PRODUCTION AND OPERATIONS MANAGEMENT SOCIETY

24th ANNUAL POM CONFERENCE
DENVER, COLORADO, USA
MAY 3 – 6, 2013

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POMS 2013 CONFERENCE PROGRAM

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24th Annual POM Conference

Denver, Colorado, USA, May 3 – 6, 2013

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24th Annual POM Conference

Denver, Colorado, USA, May 3 – 6, 2013

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POMS 2013

Program Book

24th Annual Conference

Denver, Colorado, USA

May 3 – 6, 2013

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May 2, 2013

Production and Operations
Management Society (POMS)
Denver Marriot City Center
1701 California Street
Denver, CO 80202

Greetings:

It my pleasure to extend a "Mile High" welcome to Production and Operations Management Society (POMS). We are excited that you have chosen Denver as the site for your 2013 conference.

This year's conference will give you an opportunity to come together to share new innovative strategies, learn the latest in technology and network with colleagues. Your work is important and extends across the world; aiding professionals in understanding and improving production and operations management.

While you are here it is our hope that you will take some time to enjoy some of the amenities that our beautiful city has to offer. Denver's downtown is one of the nation's most walkable cities and boasts a variety of attractions, including the nation's second largest performing arts complex, three art museums, three sports stadiums, a U.S. Mint, more than 300 restaurants, and one of the largest city park system in the country.

Enjoy your stay in Denver and please plan to return soon!

Sincerely,

Michael B. Hancock
Mayor

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Engineering Professor

"I enjoyed applying the knowledge from class to a real-world situation."
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Engineering Professor

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Professor

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For Supply Chain Management:

The Supply Chain Game is an online competitive simulation for supply chain management courses, focusing on forecasting, intermediate inventory control, logistics, and supply network design. The game was developed under faculty supervision from Sunil Chopra at the Kellogg School of Management at Northwestern and Philipp Afeche at University of Toronto.

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Welcome Message from the POMS President

Dear POMS colleagues and friends:

It is a great privilege and pleasure to welcome you to the 2013 POMS Conference in Denver. Our annual conference provides a powerful and exciting opportunity for POM researchers to meet face-to-face, discuss topics of shared interest, exchange notes and renew friendships, and have good times together. For our young colleagues, it is a great way to join the larger research community and develop a professional network.

POMS is increasingly the Society of choice for our members who truly come from all over the world. The POMS membership level now stands close to 2000 and spans over 57 countries with 56% of the members currently from outside of the US. Moreover, to encourage students in POM to get involved and retired senior scholars and practitioners in the field to remain involved, POMS membership is now free to them. At POMS Denver, you will therefore be interacting with POM researchers working in academia, government, industry, and research establishments, as well as retired senior scholars active in POM, and POM students from all over the world.

The Society depends on dedicated volunteers who generously give their time. We are fortunate this year to have an outstanding organizing committee lead by Manoj Malhotra (General Chair), Mark Ferguson (Program Chair), Vikram Tiwari (Scheduling Committee Chair), Laurens Debo (Doctoral Consortium Chair), Jack Kanet (Emerging Scholars Program Chair), Tobias Schoenherr (Proceedings Coordinator), Nagesh Murthy (Vice President Meetings), Shailesh Kulkarni (Associate VP Sponsorship), and Sushil Gupta (POMS Executive Director). The other members of the Conference Planning Committee, the college conference and cluster organizers, and many others involved in planning and managing this conference have all worked tirelessly to provide us with a world-class experience. We owe all of them a great debt of gratitude!

The conference theme "Integrating Practice in POM Research and Teaching" is a timely reminder that research and teaching in POM should always go hand in hand. We will share our research, practice and teaching lessons through four action-packed days of paper presentations, focused presentations by senior managers and executives, panel discussions, and keynote addresses. These will extend and integrate knowledge contributing to an improved understanding and practice of production and operations management and its teaching in public and private manufacturing and service organizations throughout the world.

Truly, this conference promises to be a diverse and energizing experience. I look forward to seeing many of you in Denver.

Suresh Sethi
President, Production and Operations Management Society
Eugene McDermott Chair of Operations Management &
Director, Center for Intelligent Supply Networks (C4iSN)
Naveen Jindal School of Management, The University of Texas at Dallas

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Welcome to the 24th Annual POM Conference!

A Message from your Vice President for Meetings

On behalf of the entire planning committee, it is a great pleasure to welcome you all to the 24th Annual POM Conference at Denver Marriott City Center. In addition to experiencing an exciting line up of events at the conference, it is also a tremendous opportunity to enjoy the city of Denver at a nice time of the year.

It is indeed a great time for POMS as we continue to draw a large fraction of participants from across the globe while also experiencing the growth in attendance that is constantly redefining our new normal! Our planning team has done a fantastic job under the direction of our President, Suresh Sethi and our Executive Director, Sushil Gupta. Our General Chair, Manoj Malhotra and Program Chair, Mark Ferguson have worked with great energy and enthusiasm to line up exciting plenary speakers and assemble a wonderful team of track chairs to offer you a high quality experience. In particular, this year's theme of "Integrating Practice in POM Research and Teaching" has brought an unprecedented level of engagement with Practice Leaders in all aspects of this conference. Special thanks to Chris Tang for organizing the day long Practice Leaders Forum and several plenary and semi-plenary sessions.

The core planning team, along with the track chairs and various award committees has worked tirelessly to organize all facets of this meeting. Thanks to the leadership in the POMS community, we have had an incredible sponsorship support at premier levels from several schools. We have received the highest number of premier sponsorships ever! I would like to express my sincere thanks to Shailesh Kulkarni for his critical role as the Associate VP Sponsorship, Vikram Tiwari for his pivotal role as Scheduling Committee Chair, Laurens Debo for his role as the Doctoral Consortium Chair, and Tobias Schoenherr for shouldering the time consuming and meticulous needs of being the Proceedings Coordinator. We thank Jack Kanet for his institutional leadership for the Emerging Scholars Program and congratulate him as we celebrate the 10th Anniversary of this Program at POMS. Lastly, a special thanks to all the doctoral student volunteers holding the fort in the registration area and to Cindy Ferguson at the Lundquist College of Business for offering immense support to take care of countless tasks for planning and supporting ground operations for this meeting.

It is indeed my great pleasure to have served as your VP for Meetings in Denver. Once again, have a wonderful conference!

Nagesh N. Murthy
VP for Meetings, POMS
Booth International Distinguished Research Scholar, Associate Professor of Operations Management
Lundquist College of Business,
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University of Dayton OPS Team

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The Operations and Supply Management faculty at the University of Dayton congratulates POMS for another highly successful international conference.

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POMS 24th Annual Conference – Denver

Welcome Message from the Conference General Chair

On behalf of the Planning Committee, welcome to the 2013 POMS Annual Conference. The 2013 Denver Conference is one of the largest POMS conferences with over 1000 abstracts and over 1000 registered attendants from over 45 countries. The impact of POMS is visible through the strong growth of its conference and international participation over time!

Our theme, ***Integrating Practice in POM Research and Teaching*** is presented through 23 tracks and 2 Plenary Sessions. Of particular interest this year is the development of the half plenary sessions on Sunday, May 5, 2013 that showcase the increasing level of influence that practicing managers have on driving POM research and teaching.

By sharing our research through paper presentations and integrating practitioner perspectives throughout the conference program, we fulfill the POMS fundamental purposes:

- to extend and integrate knowledge that contributes to the improved understanding and practice of production and operations management (POM);
- to disseminate information on POM to managers, scientists, educators, students, public and private organizations, national and local governments, and the general public; and
- to promote the improvement of POM and its teaching in public and private manufacturing and service organizations throughout the world.

Clearly, the success of the 2013 Denver conference relies on the support of POMS current and new members and the hard work of the Program Chair and Track Chairs for inviting current POMS members and new members to attend this exciting conference. However, this conference is made possible by the tireless effort of the organizing committee members to whom I would like to express my gratitude.

Specifically, I am indebted to each of the planning committee members as follows: Professors Sushil Gupta (Executive Director) and Nagesh Murthy (VP Meetings) for guiding us each step of the way, Professor Mark Ferguson (Program Chair) for organizing all session tracks, Professor Vikram Tiwari (Scheduling Committee Chair) for scheduling different events, Professor Laurens Debo (Doctoral Consortium Chair) for organizing a special program for the doctoral students, Professor Jack Kanet (Emerging Scholars Program Chair) for organizing a special program for young scholars, and Cherry Singhal for managing our invitation letters. Last but not the least, I am grateful to Professors Nagesh Murthy (VP meetings) and Shailesh Kulkarni (Associate VP Sponsorship) for soliciting extra funds to support POMS and many of the special conference activities. Finally, I would like to thank all of the sponsoring organizations for their generous financial support.

Once again, welcome to the 24th Annual Conference of the Production and Operations Management Society. I look forward to meeting you at the conference, and I hope you will have a wonderful time in the city of Denver.

Manoj K. Malhotra
Conference General Chair
Jeff B. Bates Professor of Business Administration
Moore School of Business
University of South Carolina
U.S.A.

Welcome Message from the Program Chair

Welcome to Denver and the 24th Annual Conference of the Production and Operations Management Society.

Thanks to the overwhelming support of our members, we have broken the abstracts submitted record for the second year in a row with over 1300 abstracts submitted from 53 different countries. This is a great sign for the growth of our society as well as our field. The theme of the conference this year is Integrating Practice in POM Research and Teaching. As you look through the sessions in each track, I think you will see this theme reflected in every track. One area of focus this year was to increase the number of speakers from industry. This was presented as a challenge to our track chairs and they were certainly up for it, as almost every track has at least one session that includes speakers from industry.

If you enjoy the talks during the conference, be sure to thank our team of dedicated track chairs. This distinguished group of subject matter experts worked tirelessly to recruit and organize a great set of speakers for you. I offer my deepest gratitude and thanks to the entire team:

Canan Savaskan, Cindy Wallin, Nektarios Oraipoulos, Ken Klassen, Eda Kemahlioglu Ziya, Ravi Behar, Kate Hughes, Manpreet Hora, Lingxiu Dong, Santosh Mahapatra, Mike Galbreth, Fernando Bernstein, Itir Karaesmen-aydin, Sanjay Ahire, Aravind Chandrasekaran, Meltem Denizel, Sebastian Heese, Amit Eynan, Brian Tomlin, Stephan Wagner, Vishal Agrawal, Fred Glover, Qi Annabelle Feng, Natalia Santamaria, Hari Balasubramanian, Gang Li, Nezih Altay, Rob Klassen, Tim Huh, Farzad Mahmoodi, Glen Schmidt, Rich Metters, Michael Lapre, Tevhide Altekin, Yimin Wang, Feryal Erhun, Chris Tang, Gary Kochenberger, Jayaranth Jayaram

I'd also like to thank my colleague and Program Chair, Manoj Malhotra, and Executive Director, Sushil Gupta, whose visions defined the conference and whose leadership kept the conference planning on track. The Vice President of Meetings, Nagesh Murthy, continues to find fantastic locations for our meetings. If you enjoy the location and the facilities, be sure to thank him for another year of dedicated service. My biggest thanks goes to the Scheduling Committee Chair, Vikram Tiwari, who carried the bulk of the program design load and was always available to answer questions about the conference management system.

Finally, all of our efforts would be for naught without the fantastic support of our members. This is your conference and I hope it proves to be an enjoyable and fruitful experience for you.

Mark Ferguson
Professor of Management Science
Wilbur S. Smith Distinguished Fellow
Moore School of Business
University of South Carolina

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#9 in Publishing in POM & JOM (2008-2012)
#9 SCM Undergraduate Program (Gartner, 2011)
#16 SCM Graduate Program (Gartner, 2011)

Service to POMS

- **Chelliah Sriskandarajah,** Hugh Roy Cullen Chair in Business Administration:
  Fellow of POMS Award 2012: Presented at the 23rd Annual POM conference, April 20-23, 2012.
  Associate Executive Director, Production and Operations Management Society (POMS) March 2004 - April 2012.
  Departmental Editor, Production and Operations Management, July 2012 - to date.
  Senior Editor, Production and Operations Management, January 2006 - July 2012.
- **Rich Metters,** Department Head, Tenneco Professor:
  Editorial Review Board member: Production and Operations Management, 1999-present.
  President POMS College of Service Operation (2010-2011).
  Special issue co-editor, Production and Operations Management, 'Service Strategy and **Technology Application**, v.13(3), Fall 2004
  POMS Board of Directors: Secretary, 2010-present
  POMS National Meeting: **General Chair for annual meeting, April 4-7, 2003, Savannah, Georgia, "POM in the Service Economy"**
  Service Operations track co-chair 2009, 2011
- **Neil Geismar,** Associate Professor, Mays Research Fellow**:**
  Senior Editor, Production and Operations Management, 2012 – present.
- **Greg Heim,** Associate Professor, Mays Research Fellow:
  Production and Operations Management Editorial Review Board (2007-2010)
- **Michael Ketzenberg,** Associate Professor, Mays Research Fellow:
  Production and Operations Management Editorial Review Board, 2008-present**.**
  POMS College of Sustainability, Treasurer, 2008-2010
- **Subodha Kumar,** Associate Professor, Shelley and Joe Tortorice '70 Faculty Research Fellow:
  Senior Editor, Production and Operations Management Journal (2007 – Present)

- **Rogelio Oliva**, Associate Professor, Ford Faculty Fellow:
  Treasurer College of Behavioral Operations Management of the Production and Operations Management Society (2009–11).

POM 2013
Thanks to Sponsors, Exhibitors, and Advertisers

As we ushered in the new year, times were changing for the better on the global and especially the US economic front. Therefore, we were quite optimistic about sponsorship support for POMS 2013. Our aspirations were realized and we were able to garner over 85% percent of our peak support for POMS in the last eight years. This can be directly attributed to numerous members of the POMS community who have stepped up admirably to champion support for POMS 2013 at their respective schools. A large share of the credit, literally, goes to the *University of South Carolina's Moore School of Business* for being the sole Platinum sponsor. Continuing in its own fine footsteps from last year, the *University of California, Los Angeles* provided Silver sponsorship. Furthermore, continuing in their wonderful tradition of supporting POMS the *University of Texas at Dallas* and B-Schools at the *Georgia Institute of Technology, Texas A&M University* and once again, the *University of Oregon* provided Bronze sponsorships. We are also grateful for sustained Bronze sponsorship from Responsive Learning Technologies and from *APICS/E&R*. In addition the *University of Dayton* and the *University of North Texas* stepped up and also became Bronze Sponsors in 2013.

We greatly appreciate the commitment from folks in the POMS community who have regularly gone to their administration to sustain their annual premier support for POMS. POMS aims to provide a high quality experience for all the attendees at its annual meeting. Sponsorships are critical in lightening the burden of ever-increasing costs and allowing the society to maintain its high standards. We are thankful to numerous schools that despite tight budgets have supported POMS and have sponsored tracks, coffee breaks, POMS colleges, and special events. We also greatly appreciate the support of the exhibitors and advertisers. We would like to recognize Nagesh Murthy for facilitating contracting with the conference hotel, Sushil Gupta for continually providing valuable leads and guidance that helps us maximize the value proposition for our sponsors. We would also like to thank members of the Sponsorships and Exhibits Committee for helping provide invaluable operational support during the conference itself. Finally, we would be remiss not to recognize, once again, the efforts of Nagesh Murthy, who continuing in his second year as Vice President for Meetings has worked tirelessly to make this the most well attended POMS conference to date.

Shailesh S. Kulkarni
Associate Vice President for Sponsorships, POMS 2013
Associate Professor and UNT Leadership Fellow,
Department of Info. Tech. and Decision Sciences,
Business Leadership Building,
University of North Texas,
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POMS Fellows

Designation as a POMS Fellow is the most prestigious honor awarded by the Production and Operations Management Society, and is given for life. It is intended to recognize POMS members who have made exceptional intellectual contributions to our profession and Society through their research and teaching. Although loyal service to the Society, in administrative, elected, or editorial assignments, is not by itself a sufficient qualification for this award, it can strengthen the case of a member who has also become a thought-leader in our field. To be eligible a candidate must have demonstrated commitment to furthering the objectives of POMS (as evidenced by such indicators as membership in the Society and active participation in POMS Colleges and meetings.)

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• John A. Buzacott – York University, Canada
• Sushil K. Gupta – Florida International University, USA
• Robert H. Hayes – Harvard Business School, USA
• Aleda V. Roth – Arizona State University, USA
• Roger W. Schmenner – Indiana University, USA
• Kalyan Singhal – University of Baltimore, USA
• Wickham Skinner – Harvard Business School (Retired), USA
• Martin K. Starr – Rollins College, USA

Inducted in 2005
• Gabriel Bitran – Massachusetts Institute of Technology, USA
• Marshall Fisher – University of Pennsylvania, USA
• Paul Kleindorfer – University of Pennsylvania, USA
• Hau Lee – Stanford University, USA
• Suresh Sethi – University of Texas at Dallas, USA
• Luk Van Wassenhove – INSEAD, France
• Chris Voss – London Business School, UK
• Steve Wheelwright – Harvard University, USA

Inducted in 2006
• Richard B. Chase – University of Southern California, USA
• Kasra Ferdows – Georgetown University, USA
• Wallace J. Hopp – Northwestern University, USA

Inducted in 2007
• Warren H. Hausman – Stanford University, USA
• Roger G. Schroeder – University of Minnesota, USA

Inducted in 2008
• Joseph Blackburn – Vanderbilt University, USA
• Steven C. Graves – Massachusetts Institute of Technology, USA

Inducted in 2009
• Cheryl Gaimon – Georgia Institute of Technology, USA
• L. Joseph Thomas – Cornell University, USA

Inducted in 2010
• Mike Pinedo – New York University, USA
• Edward Silver – University of Calgary, Canada

Inducted in 2011
• William Lovejoy – University of Michigan, USA
• Christopher S. Tang – University of California Los Angeles (UCLA), USA

Inducted in 2012
• Chelliah Sriskandarajah – Texas A&M University, USA

Department of Business Administration

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Friday Plenary Session

Friday, May 3, 2013, 11:30 am - Salons E & F

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Kerry Hester
Senior Vice President, Customer Experience

Kerry Hester is US Airways' senior vice president, customer experience and is responsible for all of the airline's customer-facing operating groups including reservations, airport customer service, inflight services, customer strategy and customer service recovery. Hester reports to Executive Vice President and Chief Operating Officer, Robert Isom.

Hester was formerly US Airways' senior vice president, operations planning and support where she oversaw reservations, the strategy, planning and service recovery functions within customer service, operations planning performance and analysis and crew planning and scheduling. Prior to joining US Airways in 2007, Hester served in various management roles in revenue management, schedule/network planning, airport customer service and reservations during her eleven years at Northwest Airlines.

In 2011, Profiles in Diversity Journal named Hester as a Woman Worth Watching, an award that acknowledged Hester's accomplishments in the airline industry. In 2012, the Phoenix Business Journal selected Hester as one of the most influential business leaders in the Phoenix area for her leadership role at US Airways and for her work with community organizations. She is proud to serve on the boards of Junior Achievement of Arizona and Homeward Bound.

Hester graduated with a Bachelor of Arts in economics from Tulane University and she received her Master of Business Administration from the Stephen M. Ross School of Business at the University of Michigan.

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- Eleven Readings on key topics, including Process Design and Analysis, Queuing Theory, and Inventory Management. Each Reading includes Interactive Illustrations that allow students to experiment with changing parameters and master important theories quickly.
- Optional Labs allow students to explore more complex subjects in greater detail through short simulations paired with questions designed to guide experimentation.

Visit the HBP booth to REQUEST PREVIEW ACCESS to *Core Curriculum*.

Sunday Plenary Session

Sunday, May 5, 2013, 1:00-2:30 pm - Salon E & F

<u>Dr. Gang Yu</u> (于刚)

Co-founder and CEO of Yihaodian, and

2012 POMS MKS Practice Excellence Winner

Dr. Yu is the co-founder and Chairman of Yihaodian (www.yihaodian.com). Founded in 2008, Yihaodian.com is China's fastest growing company – a B2C retailer selling over one million SKUs to consumers online. In addition to winning the first prize for Deloitte Technology Fast500 Asia Pacific in 2011 with 19,200% growth in three years, its success has motivated Walmart to strategically invest in Yihaodian in both 2011 and 2012.

Gang received his BSc from Wuhan University, MS from Cornell, and PhD from the Wharton School. With a stellar research record (90 top academic publications and books), he was promoted to a chaired professor at McCombs School of Business, University of Texas in Austin. Currently, he serves as an Adjunct Professor at Beijing University, Tsinghua University, The Chinese University of Hong Kong, Wuhan University, Shanghai Jiaotong University, etc.

Dr. Yu founded CALEB Technologies, a company that developed a real-time operations control system to help airlines recover from schedule disruptions. After selling CALEB to Accenture in 2002, he joined Amazon.com as VP of Worldwide Supply Chain, and then he joined Dell as VP of Worldwide Procurement. In 2008, Dr. Yu together with Junling Liu left Dell to found Yihaodian, a B2C e-commerce startup specializing initially in fast moving consumer goods, and later branching into a broad selection of products. Dr. Yu's company Yihaodian.com has been identified to be THE single fastest growing company in all of Asia Pacific according to the latest annual survey by Deloitte. In three years, Yihaodian's revenue has grown 192 times reaching 2.7 Billion RMB in 2011, offering over 180,000 SKUs, with over 6000 employees, 12 warehouses in 5 cities, and delivery stations in 34 cities in China.

Dr. Yu's excellence of work has earned him prominent recognition in transportation, logistics, and manufacturing industry. In addition to the **2012 POMS MKS Practice Excellence Award**, he received the 2002 Franz Edelman Management Science Achievement Award. Other recognitions include the 2002 IIE Transaction Award for Best Application Paper and the 2003 Outstanding IIE Publication Award from the Institute of Industrial Engineers, in addition to many other awards.

Dr. Yu now lives in Shanghai with his wife Michelle, his son Ray, and his daughter Kelley.

POMS Practice Leaders Forum

Sunday, May 5, 2013

SEMI-PLENARY SESSION 1 (8:00 – 9:30 am): Health Care and Operations Suites IV

Moderator: Christopher Tang -- UCLA

Speaker 1: Thomas Rohleder – Mayo Clinic

"Facing an Uncertain Future: Mayo Clinic's Center for the Science of Health Care Delivery"

Abstract:
Mayo Clinic desires to maintain its leadership position as a patient-centered health care organization in the face of significant pressures to reduce its overall cost structure. A key strategic component to achieve this goal is the newly formed Center for the Science of Health Care Delivery. This presentation will discuss how this Center is promoting applications of operations management at Mayo Clinic as well as research useful to all health care organizations. Results from several specific applications will be highlighted.

Speaker 2: Kimberly Clemson – Amgen, Inc.

"Advancing From Product Development to Product Lifecycle Management within Operations at Amgen"

Abstract:
Developing a biologic drug, including the manufacturing processes and quality systems to support it, spans many years. As a result of long development times, patient needs, market demands, and design requirements must be projected years in advance of the product launch. Furthermore optimizing the product or manufacturing processes post launch requires years to implement given complex global regulatory requirements. This environment requires a highly integrated product and process development program that manages the product through its lifecycle. This program is critical to the success of Amgen's Operations organizations and new efforts are underway to further maximize the value this program provides.

Speaker 3: Dirk de Waart - PricewaterhouseCooper

"Next Generation Supply Chains: Efficient, Fast, and Tailored"

Abstract:
Results of PwC's Global Supply Chain Survey 2013. This year's global supply chain survey by
PwC shows how Leaders are moving ahead of the pack. They're tailoring their supply chains to customer needs and investing in next-generation capabilities while keeping the focus on supply chains that are both fast and efficient.

SEMI-PLENARY SESSION 2 (9:45 – 11:15 am): Supply Chain Management Suites IV

Moderator: Kevin O'Marah – SCM World and Stanford University

Speaker 1: Ashlie Wallace – Dell, Inc.

"Managing Supply Chain Risk at Dell"

Abstract:
Continuity of supply (COS) is a top priority for Dell. COS issues create a challenging environment that drive long cycle time, which impacts customer experience and ultimately profitability. Dell Procurement has implemented an analytical approach to assess risk throughout the entire supply chain with the ultimate goal of driving sustainable improvement in component shortages and rapid incident recovery through event management. In this session, she will discuss the method, results, and best practices related to managing supply chain risk and maintaining the resulting operational resiliency.

Speaker 2: Alex Brown – Xilinx

"Supply Chain Planning in the Semiconductor: Facing the Complex Challenge"

Abstract:
This talk will review basic supply chain planning in the semiconductor industry, from forecasting through production planning & scheduling. The talk will focus on the challenges brought on by innovation in the product & process that is driving dramatically increased planning complexity.

Speaker 3: Keith Holliday – Sonoco

"Building SCM Capability at a 110 Year Old Packaging Company"

Abstract:
Sonoco has reliably met customer needs, often through heroic intervention. I will share the journey toward supply chain excellence which has been building the processes, systems, and people capability to reduce the need for heroic intervention while delivering perfect order/ inventory performance in the top quartile of the packaging industry.

SEMI-PLENARY SESSION 3 (2:45 – 4:15 pm): Business Analytics
Suites IV

Moderator: Kevin O'Marah – SCM World and Stanford University

Speaker 1: Shailendra Jain – Hewlett-Packard

"Information Analytics at HP Labs"

Abstract:
HP Labs has a long history of innovation in applied analytics driven by HP enterprise needs for strategic and operational decisions. More recently, HP is gearing towards providing business services to manage big data and information optimization solutions for our enterprise customers. This talk will highlight select successful applications of Operations Research and related analytical disciplines. One common theme of these applications is need for effective use of multiple analytical methodologies to address large scale industrial problems. Generally, these methodologies include: large scale optimization, advanced statistical modeling, data mining/machine learning, text mining/information extraction, marketing science, game theory/behavioral economics and others. Our HPLabs team is building methodologies and deploying tools for strategic and operational planning of workforce for our IT Services business, with about 200K highly skilled employees to meet HP's enterprise customer demands in a dynamic and uncertain environment. This work addresses a difficult problem of optimal matching of complex demand & supply under uncertainty. Additional novel feature of this work is that we exploit unstructured information about demand and supply through advanced text mining and information extraction technologies and feed its result to large scale optimization for structured information processing. I will brief highlight the work in product portfolio optimization, which is the winner of INFORMS Edelman prize of 2009 and also our work in demand modeling & pricing optimization, for which HP was recognized by INFORMS Revenue Management and Pricing Practice Award of 2012. If time permits, healthcare analytics work in OR Scheduling and Comparative Effectiveness Research (CER) for managing costs and improving treatment effectiveness will be also shared.

Speaker 2: Thomas Olavson – Google, Inc.

"Big Data Problems are Sexy, but Small Data Problems are Beautiful"

Abstract:
HBR says that the Data Scientist is the sexiest job of the 21st century. Data scientists work on Big Data problems -- mostly analysis of logs data from internet users. Many problems that quants have faced for years in operations, finance, and strategic planning are quite different, but no less challenging, interesting, or impactful. I'll discuss a taxonomy for different analytical problem types and what makes each sexy or beautiful.

Speaker 3: Robert Wang – Nestlé

"Business Analytics – A Nestlé's Way"

Abstract:
The Decision Support Group of Nestlé's Logistic Division, is often regarded as the company's think tank, or internal consulting. Each year it delivers millions of savings through various projects in its supply chain. The group is known for its ability to focus and deliver measurable results in a very short time. This presentation will cover how the group is organized, successful projects in the last 5 years, and what is the data infrastructure behind all the projects.

POMS Practice Leaders

KEVIN O'MARAH – Chief Content Officer, SCM World, and Senior Research Fellow, Stanford Global Supply Chain Forum

POMS is delighted to have Kevin to serve as co-director of the POMS Practice Leaders Forum with Christopher Tang (UCLA). Currently, Kevin is Chief Content Officer at SCM World. From 2010-2011 Kevin was GVP for Supply Chain research at Gartner which acquired AMR Research in Boston where he was Chief Strategy Officer. While at AMR (2000-2010) Kevin created the Supply Chain Top 25, led the Product Lifecycle Management research practice and Supply Chain practice, and produced the annual AMR Conference. He was formerly a Vice President at Oracle, and a consultant with Mercer (in London), CGEY (in Calgary) and Company Assistance Ltd. (working on privatization in Poland). He holds a bachelor's degree in Economics from Boston College, an MSc in Management Studies from Oxford University, and a Masters in Business Administration from Stanford University.

ALEX BROWN – Vice President of Supply Chain, Xilinx

Alex Brown is Vice President of Supply Chain at Xilinx where he has been since 2002. Prior to Xilinx, Alex was Director of Strategic Consulting at Manugistics and Assistant Professor at the Owen School of Management at Vanderbilt University. Alex has a PhD in Industrial Engineering from Stanford, a Masters in Microelectronic Engineering from Cambridge, and a BS in Electrical Engineering from Vanderbilt.

KIMBERLY CLEMENSON – CMC Excellence Program Director, Amgen, Inc.

Kimberly has 20 years of diverse Operations experience from various ventures into research, pharma/biotech and entrepreneurship. She is currently Director of Global Operations at Amgen and is leading an effort to optimize product development and commercialization practices across all of Operations. Kimberly joined Amgen in 2003, after receiving her MBA at UCLA, and has spent the majority of her time as a Global Operations Leader, both leading product development teams and managing commercial products within the Operations space. Kimberly also has a BS degree in Physics from Eastern Kentucky University and an MS in Health Physics from Texas A&M University. Kimberly is an avid cook and foodie, and lives in Thousand Oaks, CA, with her husband and two step-children.

KEITH HOLLIDAY – Director, Corporate Supply Chain & Logistics, Sonoco Products Company

Director- Corporate Supply Chain & Logistics at Sonoco Products Company leading the end to end process capability improvement work with a target of becoming a top quartile supply chain performer in the packaging industry; in addition leads the Lean Six Sigma process for the corporation. Prior to joining Sonoco, was the Director of Supply Chain Transformation and Six Sigma Champion- Global Operations for DuPont, leading the application of six sigma across DuPont Operations and to business processes, specifically the end to the end supply chain. Keith has a Manufacturing/ engineering background with 30 years DuPont experience and overall 38 years in manufacturing with assignments at sites across the US and global experience leading business process improvement.

SHAILENDRA JAIN – Distinguished Technologist and Research Manager, HP Labs

Shailendra Jain established and managed the Decision Technology Department at HP Labs, which focused on business process innovation through analytics. Dr. Jain has led business analytics projects in several areas, including inventory management & production planning, forecasting, personalization, marketing spend optimization, product variety management and post-sales services design/pricing. He is currently leading the applied research efforts of HP Labs in service innovation, with specific emphasis on service work-force planning/optimization & healthcare analytics. He received his Ph.D. in Management Science from UCLA and a Masters in Industrial Engineering from IIT, Delhi.

THOMAS OLAVSON – Director, Operations Decision Support Group at Google

Thomas Olavson is director of the Operations Decision Support group at Google. His team provides model-based decision support for Google's cloud infrastructure and supply chain planning. He was previously director of HP's Strategic Planning and Modeling team, an Informs Prize and Edelman Award winning team. Thomas received his Ph.D. in Management Science & Engineering from Stanford University in 2001.

THOMAS R. ROHLEDER, PH.D. – Health Sciences Researcher, Mayo Clinic

Thomas Rohleder is a Health Sciences Researcher at Mayo Clinic, and his research is focused on health care systems engineering. A major aspect of the research is building computer models of health care processes and systems, and using them to test alternative designs before actual implementation. He received his B.S in Finance from the University of Minnesota, and his Ph.D in Operations Management from the University of Minnesota. His current studies include: modeling patient flow through cardiovascular surgery, maximizing patient access to PET scanners in nuclear medicine, and optimizing patient access service for available outpatient resources.

DIRK DE WAART – Partner Management Consulting, PricewaterhouseCoopers

Dirk is a Partner in the Los Angeles office of PwC. He has over 15 years of experience in supply-chain management and service operations for technology-based firms. Dirk has worked with clients in the aerospace, aviation, automotive, electronics, semiconductor, life science, and telecommunications industry to design and implement operational improvements. Prior to joining PwC and PRTM, Dirk held management positions in the aerospace service business unit at AlliedSignal (now Honeywell) for three years in both the USA and Germany. Dirk is a graduate of Delft University of Technology in the Netherlands with an MS Degree in Aerospace Engineering. He received an MBA Degree in General Management from INSEAD.

ASHLIE WALLACE – Procurement Director, Dell

Ashlie Wallace is a Procurement Director at Dell and is responsible for general management of Dell's international trading company, which owns procurement of Dell's Tier 2 components, sale to Tier 1 suppliers for production, and management of inbound supply chain and inventory. She is also responsible for leading the continuity of supply strategy initiative and owns Dell's global E&O governance process focused on reducing cost, risk management, and maintaining optimal e2e supply chain processes. Prior to her current role, she was responsible for Dell's global inventory forecast and driving strategic initiatives directed at optimizing cash flow from operations. Ashlie has bachelor degrees in International Business and Spanish from Texas State University and a Masters in Business Administration from the University of California Los Angeles.

ROBERT WANG – Senior Business Analyst, Nestle USA

Robert Wang is currently a Senior Business Analyst in the Decision Support Group of Nestle USA, located in Glendale, CA. He has lead on various optimization projects in Supply Chain Network, Master Production Scheduling, Private Fleet, and Inventory Development. He received his Ph.D. in Management Science from UCLA Anderson in 1995, and has worked as a Senior Consultant at Ernst & Young LLP and as a Manager at Deloitte & Touche LLP.

POMS 2013 Martin K. Starr Excellence in
Production and Operations Management Practice Award
Thomas A. Debrowski
(Executive Vice President, Worldwide Operations, Mattel, Inc.)

The *Martin K. Starr Excellence in Production and Operations Management Practice Award* has been instituted by the Production and Operations Management Society (POMS) to recognize contributions made to the field of Production and Operations Management (POM) by POM practitioners. This award is based on exceptional quality of contributions to the POM field and is presented to an individual who has done an exceptional job in making advances in the practice of POM, promoting the profession, making an impact, and building a linkage between industry and academics. These contributions are not restricted to a single organization and may span time spent at several organizations during the career of the candidate. The cumulative contributions made by the candidate during his/her career are evaluated. It is an international award and is open to all POM practitioners from around the world. It is POMS' most prestigious award to recognize a practitioner and industry leader. The POMS' Board in its annual meeting held on April 28, 2006 in Boston, U.S.A. unanimously approved that the award be named after Dr. Martin K. Starr. The POMS' Board in its deliberations noted that Dr. Starr has contributed to POMS and its activities since its inception and has been a constant source of guidance and inspiration to POMS. Naming this award after him is indeed a great recognition of his services to the POM profession in general and the POM Society in particular.

The first seven recipients of the award are: Dr. Gang Yu (2012), Mr. Edwin Keh (2011), Dr. Krishan Kumar (2010), Ms. Erin J. Wallace (2009), Dr. Dina Petrarolo (2008), Dr. Corey A. Billington (2007) and Mr. Lee Cockerell (2006). All seven recipients are the most esteemed members of the POM field. Dr. Yu is the co -founder and Chairman of NewHeight Corporation and The Store Corporation(www.yihaodian.com). He is also an Adjunct Professor at Beijing University, Tsinghua University, The Chinese University of Hong Kong, Wuhan University, and Shanghai Jiaotong University. Mr. Edwin Keh served as Chief Operating Officer and Senior Vice President of Wal-Mart Global Procurement. Dr. Krishan Kumar is the Director of Maruti Automotive Center of Excellence, Maruti Suzuki India Limited - the largest automobile manufacturer in South Asia. Ms. Erin J. Wallace serves as Senior Vice President of Operations Integration Line of Business for Walt Disney Parks & Resorts ®. Dr. Dina Petrarolo is the Managing Director at Shatterprufe, South Africa's Automotive Glass Manufacturer; and prior to his current position, Dr. Petrarolo served as the Global Head of Manufacturing Development, SABMiller pic, Sandton, South Africa. Dr. Corey Billington is a Professor of Operation Management and Procurement at IMD in Lausanne, Switzerland; and prior to his current position he

worked as Senior Vice President for Hewlett Packard (HP). Mr. Lee Cockerell is a consultant, author, and speaker, now retired as the Executive Vice President of Operations for the Walt Disney World ® Company.

The committee for the 2013 award unanimously selected, from among a slate of excellent candidates, Mr. Thomas Debrowski to be the recipient of this year's award. Thomas A. Debrowski is executive vice president of Worldwide Operations for Mattel, Inc., where he is responsible for ensuring the efficiency and quality of all worldwide manufacturing, logistics and supply chain activities for Mattel. He oversees the operations and distribution departments, which include global sourcing, procurement, manufacturing operations, operations finance and strategy, operations technology, logistics, operational planning, environmental affairs, health and human safety.

Debrowski joined Mattel after more than nine years as senior vice president of Operations for The Pillsbury Company. In this role, he was responsible for integral processes ranging from purchasing and manufacturing to product quality and environmental affairs.

Before joining Pillsbury, Debrowski was a 20-year veteran of Kraft Foods, Inc., the largest U.S.-based packaged food company in the world. He began his career at Kraft in 1972, and rose through the ranks to eventually become vice president and director of Grocery Operations for Kraft USA. Prior to that, he spent seven years living and working overseas and was responsible for Operations in both Europe and Asia-Pacific, respectively.

Debrowski's affiliations include Calera Capital Advisory Board, Mattel Children's Foundation, and Save the Children. He is serving as a board member of the Speech and Language Development Center, and he was a board member of the National University of Singapore (NUS) Business School Advisory Board. Also, he has served as a guest speaker about global operations at the UCLA Anderson School over last 10 years.

Debrowski earned a Bachelor of Science degree from Delaware Valley College of Science and Agriculture.

The committee for this year's award consists of the following:

- Edwin Keh, Faculty, The Wharton School University of Pennsylvania, Philadelphia, PA, U.S.A. (Chair)
- Suresh Chand, Louis A. Weil, Jr., Professor of Management, Krannert School of Management, Purdue University, West Lafayette, Indiana, U.S.A.
- Sushil Gupta, Professor, College of Business Administration, Florida International University, Miami, Florida, U.S.A.
- Martin K. Starr, Emeritus Professor, Crummer Graduate School of Business, Rollins College, Winter Park, Florida, U.S.A, and Emeritus Professor, Columbia University, New York, U.S.A.
- Christopher S. Tang, University Distinguished Professor, Edward W. Carter Chair in Business Administration, UCLA Anderson School, Los Angeles, California, U.S.A.

Emerged Scholars Reception: Ten Years of Emerging Scholars

To all POMS colleagues who have participated in the POMS Emerging Scholars Program since its inception in 2004:

Please join us in this "mini" reunion celebration of the 10th anniversary of the program. Since 2004 over 200 junior and senior faculty have participated in the program.

Sunday, May 05, 2013
6:15 – 7:30 PM
Location: Allie's American Grille

Sponsored by the University of Dayton School of Business Administration

POMS 2013 EMERGING SCHOLARS PROGRAM
(Participation in This Session is by Invitation Only)

Sunday, May 5, 2013, 7:15-11:45 a.m. – Mattie Silks

The Program:

The Production and Operations Management Society is committed to fostering the development of young professionals pursuing academic careers in the field of OM, and has thus commissioned this special session of the conference. The program's goal is to provide junior OM professionals with career-building advice in developing excellence in their personal programs of teaching, research, and service in Operations Management. The program will consist of a set of guided discussions on topics relevant to academic career building in the field of Operations Management. The discussions will cover a broad range of topics such as (but not limited to): excelling in the classroom, new methodologies for research and teaching, book writing, charting and managing a winning research stream, choosing publication outlets, dealing with lazy editors, dealing with impertinent reviewers, doing research in non-PhD granting universities, funded research, professional service – getting involved with what and when, service opportunities in the POMS, consulting, juggling your activities – doing it all, setting priorities, etc.

Facilitators:

Jack Kanet, University of Dayton
Mike Gorman, University of Dayton
Martin Stößlein, University of Munich

Senior Scholars:

Peter Letmathe, University of Aachen
Charles Wells, University of Dayton

Timetable:

07:15 - 07:30	Registration, packet pickup, call to order
07:30 - 08:15	Breakfast meeting[1], biographical research
08:30 - 10:00	Discussion round 1 (introductions, teaching, research, service, other)
10:00 - 10:15	Break (photo session)
10:15 - 11:45	Discussion round 2 (continuation of discussions, wrap-up)

Emerging Scholars Participants:

Anupam	Agrawal	University of Illinois at Urbana-Champaign
Yasin	Alan	Vanderbilt University
Saurabh	Bansal	The Pennsylvania State University
Carol	Cagle	Mercer University
Toyin	Clottey	Iowa State University
Gökçe	Esenduran	The Ohio State University
Jonathan	Helm	Indiana University
Amit	Kakkad	University of San Diego
Tao	Li	Santa Clara University
Yen-Ting	Lin	University of San Diego
Kirstin	Scholten	University of Groningen
Enrico	Secchi	University of Victoria
Jeff	Shockley	College of Charleston
Praowpan	Tansitpong	State University of New York at New Paltz
Jasper	Veldman	University of Twente
Wenli	Xiao	University of San Diego
Tingting	Yan	Wayne State University
Arda	Yenipazarli	Georgia Southern University
Jie J.	Zhang	University of Vermont

[1] Breakfast courtesy of School of Business Administration, University of Dayton

POMS Doctoral Consortium 2013

POMS 24rd Annual Conference, Denver, CO, U.S.A.

Sunday, May 5 – 1:30-5:00pm

Room: Mattie Silks

OVERVIEW

The purpose of the POMS Doctoral Consortium is to help doctoral students maximize their chances of having a successful academic career in our globally competitive environment. Various perspectives on finding the right position and becoming an excellent researcher and teacher will be explored by having a mix of faculty provide their advice and direction.

AGENDA

1:30-1:40 Introduction: Laurens Debo, University of Chicago (USA)

1:40-2:00 John Birge, University of Chicago (USA) : **The job market: Attributes of successful candidates**

2:00-2:20 Ann Marucheck, University of North Carolina at Chapel Hill (USA): **Special issues on the job market, international student issues and dual career concerns**

2:20-2:40 Kyle Cattani, Indiana University (USA): **Career Advice: Hedging your bets**

2:40-3:00 Panel Session: John Birge, Ann Marucheck, Kyle Cattani, Laurens Debo, Neil Geismar (Texas A&M, USA): Q & A

3:00-3:15 Break

Breakout Session

3:15-3:45 Participants present/discuss research plans in small groups with the speakers and each other.

3:45-4:00 Break

4:00-4:30 Michael Pinedo, New York University (USA): "**Research and publishing"**

4:30-4:50 Ananth Iyer, Purdue University (USA), "**Planning your career for the long run: Research Grants, Industry Collaborations, and Professional Service"**

4:50-5:00 Panel Session: Q & A / Wrap-up

NAME OF PARTICIPANT	AFFILIATION
Aditya Vedantam	Purdue University
Akkarapol Sa-ngasoongsong	Oklahoma State University
Anh T. Ninh	Rutgers University
Balaraman Rajan	University of Rochester
Belleh Fontem	The University of Alabama
Changqing Cheng	Oklahoma State University
Changrong (Edmund) Deng	Duke University
Cherry Singhal	University of South Carolina
Cristiane B. Villar	FGV, Sao Paulo, Brazil
David Barrett	Western University
David Dreyfus	Michigan State University
Emre Ertan	University of Texas at Dallas
Fabio Tescari	Fundacao Getulio Vargas, Sao Paulo, Brazil
Fei Lv	Huazhong University of Schience and Technology, China
Gang Wang	University of North Carolina
George Ball	University of Minnesota
Gernot Lechner	University of Graz
Giulia Santarelli	University of Bologna, Italy
Guangzhi Shang	University of South Carolina
Hande Cetinay	Technical University Eindhoven
Hella Abidi	FOM University of Applied Sciences
Jaime Andres Castaneda A.	University of Lugano, Switzerland
Jeremy J. Kovach	Georgia Institute of Technology
Jianfu (jeff) Wang	University of Toronto
Jillian T. Watson	Clemson University
Jing Wang	Huazhong University of Science & Technology, China
Jinghan Quan Tian	The Hongkong Univesity of Science and Tehnology
John Joshin	Indian Institute of Management Lucknow – India
Jorge Andres Rodriguez	ESADE Business School, Spain
Karca Duru Aral	INSEAD
Lan Wang	University of Florida
Liliana Rivera	Massachusetts Institute of Technology
Maryam Lotfi	City University London, UK
Maximiliano Udenio	Technical University of Eindhoven
Megan Wydick Martin	Virgina Polytechnic Institute and State University
Meng Li	University of Texas at Dallas
Mericcan Usta	Stanford University
Michelle Xiao Wu	Chicago Booth
Min Choi	Arizona State University
Mohammad Nikoofal	McGill University
Nazil Turken	University of Florida
Nicholas Freeman	University of Alabama

Osman Kazan	University of Texas at Dallas
Prashant Chintapalli	Indian Institute of Management, India
Qingning Cao	The University of Texas at Dallas
Qiong (Cherry) Chen	Clemson University
Rosa Hendijani	University of Calgary, Canada
Saied Samiedaluie	McGill University
Sarah A. Schiffling	Heriot-Watt University, UK
Sebastian Schiffles	TU Munich, Germany
Selvaprabu (Selva) Nadarajah	Carnegie Mellon University
Seong Wook Hwang	The Pennsylvania State University
Shiliang Cui	University of Pennsylvania
Sien Chen	University of Xiamen, China
Siti Zakiah Abu Bakar	Southern Illinois University Carbondale
Sobhan Asian	Nanyang Technological University, Singapore
Steven Carnovale	Rutgers Business School-Newark & New Brunswick
Suntichai Kotcharin	The University of Manchester
Suvrat Dhanorkar	University of Minnesota
Thunyarat (Bam) Amornpetchkul	University of Michigan
Tianxiao Gong	Peking University, China
Timofey Shalpegin	HEC Paris
Torbjorn H. Netland	Norwegian University of Science & Technology
Varun Gupta	University of Texas at Dallas
Vinay Kalakbandi	Indian Institute of Management Bangalore, India
Vishal Ahuja	Chicago Booth
Yuhong He	University of California, Irvine
Zhongwen Ma	University of Texas at Dallas

2013 Emerging Economies Doctoral Student Award Recipients

The Production and Operations Management Society (POMS) created the ***Emerging Economies Doctoral Student Award*** to encourage the development of future scholars in emerging economies and to begin to build connections between these future scholars and POMS. To be eligible, an applicant has to be enrolled in a Ph.D. program in operations management or related disciplines offered by a university in a country belonging to one the following three regions – African, Asia-Pacific, and Latin America and Caribbean. For 2013, POMS appointed a committee comprising Professors Yih-Long Chang (Georgia Institute of Technology, Haresh Gurnani (University of Miami), Vernon Hsu (Chinese University of Hong Kong), Ann Marucheck (University of North Carolina), Johnny Rungtusanatham (Ohio State University), and Srinivas Talluri (Michigan State University) and charged the committee with recommending recipients for the award. The committee evaluated 14 strong applications and is pleased to recognize the following five individuals as the ***2013 Emerging Economies Doctoral Student Award*** recipients.

Mostafa Abdelrahman Moussa is currently a Lecturer Assistant and Researcher for several engineering schools in Egypt where he teaches courses on operations management, project management, facility planning, time and motion study, and quality management. He received a Bachelor of Science degree and a Master's degree from the Design and Production Engineering Department, Faculty of Engineering, Ain Shams University, Cairo, Egypt, and is currently pursuing his Ph.D. in industrial engineering from the same institution. For his Master's degree, he considered the industrial problem of multi-objective optimization of supply chain network design. He has published a paper in this area to introduce an advanced genetic algorithm for solving this problem. His research interests continues to focus on applying different meta-heuristic techniques to solve different industrial problems such as scheduling, supply chain management, assembly line balancing and facility layout. He has also worked on several projects to apply lean manufacturing concepts for a number of reputed organizations in Egypt. He is currently participating in efforts to establish an industrial engineering society in Egypt in order to raise awareness about industrial engineering and to act as a liaison between industry and research in Egypt.

Prashant Chintapalli is a Ph.D. (FPM) student in the Department of Production and Operations Management, Indian Institute of Management, Bangalore (IIMB). He received a Master of Science (Hons.) in Mathematics and a Bachelor of Engineering (Hons.) in Computer Science, both from the Birla Institute of Technology and Science (BITS), Pilani (Rajasthan) India, in 2004. He stood first among the class of 2004 of the Department of Mathematics, BITS, Pilani. He was the recipient of first prize in a paper presentation contest (Mathematics stream) at the all India Science festival (APOGEE 2002) organized by BITS, Pilani. The Government of Andhra Pradesh conferred on him *Pratibha'99*, the award for academic excellence in high school and undergraduate studies. He has worked with Oracle Inc. in the capacity of Senior Applications Engineer for a term of 5 years and pursued the executive programme in international business at the Indian Institute of Management, Calcutta (IIMC), in 2008. In 2010, he received the EADS-SMI scholarship awarded by the EADS-SMI center of Production and Operations Management department at IIMB. His current research interests include revenue management, pricing, and inventory management.

2013 Emerging Economies Doctoral Student Award Recipients

Tianxiao Gong, Ph.D. candidate of the Guanghua School of Management, Peking University in China, received a Bachelor degree in industrial engineering from Shandong University. During his bachelor study, he worked part-time job as an industrial engineer for Bluesword Logistics Co., a 4PL logistics technology company in China. His Ph.D. research focuses on OM issues in innovating firms in the presence of strategic consumers. His research has been presented at the 2012 INFORMS International Conference and will be presented at the 2013 POMS Annual Conference. Gong has also published in Chinese journals. In addition, Gong has participated in research programs and industry-academic cooperation programs like the distribution networks planning and design for agricultural products in Beijing, the modern logistics park planning and design in the Xinjiang and Chongqing provinces. He currently serves as an academic assistant in the Department of Management Science and Information System at Peking University. As a student volunteer, he helped organized the sixth international annual conference of the Chinese scholars association for management science and engineering and the national doctoral forum in management science and engineering. Gong will be visiting the Graduate School of Business at Columbia University between 2013 and 2014.

Vinay Kumar Kalakbandi, a Ph.D. candidate from the Productions and Operations Management (POM) area of the Indian Institute of Management Bangalore, holds a Master's degree in industrial engineering and operations research (IE&OR) from the Indian Institute of Technology, Bombay. His master's thesis dealt with assembly line optimization in a network equipment manufacturing company. His research interests include behavioral operations management, supply chain management, assembly line design and ad-response analytics. For his Ph.D. dissertation, he is conducting research on supply chain contracting from a behavioral decision-making perspective. He intends to examine factors affecting supply chain contract choice and the impact of contractual flexibility on supply chain performance. He has also worked on various freelance projects with Pricewaterhouse Coopers' Government Reforms and Infrastructure Practice, IBM's Integrated Supply Chain Management Practice, and AdoRoi Marketing Science. He is an avid traveler, an amateur photographer, and a nature enthusiast.

Giuliano Marodin is a Ph.D. candidate in the Industrial Engineer Graduate Program at the Federal University of Rio Grande do Sul in Brazil. He is currently a lecturer for several Master degree's programs in Brazil and a project manager for the Lean Institute Brasil, a partner organization of the Lean Enterprise Institute and a member of the Lean Global Network. He received his Master's degree in industrial engineering and a BBA degree from the same institution, where he also worked as an assistant professor for the Business School Department (2007-2009). In 2003, Marodin completed a one-year bachelor exchange program at the École Superieure des Affaire at the Université Pierre Mendes, France. More recently, with funding from the Coordination for the Improvement of Higher Level Personnel (CAPES), a national governmental institution, he was a visiting scholar at the Fisher College of Business, The Ohio State University. His research has appeared in proceedings of POMS and INFORMS, and a paper from his Master´s thesis has been published in the *International Journal of Production Research*. Since 2002, he has worked as a consultant to implement lean production systems in firms in diverse industries.

24th Annual Production and Operations Management (POM) Conference, Denver

May 3 - 6, 2013

Conference Agenda

	Start Time	End Time	Event	Location
Wednesday, May 1, 2013				
	5:00 PM	6:00 PM	Mini Conference Registration: Supply Chain Management	Registration Counter
	5:00 PM	6:00 PM	Mini Conference Registration: Healthcare Operations Management	
	5:00 PM	6:00 PM	Mini Conference Registration: Humanitarian Oprs. & Crisis Mgmt	
	5:00 PM	6:00 PM	Mini Conference Registration: Sustainable Operations Mgmt	
Thursday, May 2, 2013				
	8:30 AM	1:30 PM	Registration for all mini-conferences	Registration Counter
	10:30 AM	8:30 PM	Mini Conference: Supply Chain Management	Suites III
	1:00 PM	7:45 PM	Mini Conference: Healthcare Operations Management	Salons B,C,D
	11:00 AM	6:15 PM	Mini Conference: Humanitarian Oprs. & Crisis Mgmt	Suites IV
	9:00 AM	5:00 PM	Mini Conference: Sustainable Operations Mgmt	Suites V & VI
	5:00 PM	7:00 PM	POMS Annual Conference Registration Check-in	Registration Counter
Friday, May 3, 2013				
	8:00 AM	5:00 PM	POMS Annual Conference Registration Check-in	Registration Counter
	9:00 AM	12:30 PM	Exhibits Open	
	8:00 AM	9:30 AM	Parallel Sessions	
	9:30 AM	10:00 AM	Morning Coffee Break	
	9:00 AM	4:00 PM	POMS Board Meeting	Mattie Silks
	10:00 AM	11:30 PM	Parallel Sessions	
	11:30 AM	12:30 PM	Plenary Session: Kerry Hester, Senior Vice President of Customer Experience at US Airways	Salons E & F
	12:30 PM	1:30 PM	Lunch on your own	
	1:30 PM	3:00 PM	Parallel Sessions	
	1:30 PM	5:00 PM	Exhibits Open	
	3:00 PM	3:30 PM	Afternoon Coffee Break	
	3:30 PM	5:00 PM	Parallel Sessions	
	5:00 PM	5:15 PM	Evening Coffee Break	
	5:15 PM	6:45 PM	Parallel Sessions	
	7:00 PM	8:00 PM	Welcome Reception (Open to all registered attendees & guests)	Salons E & F
Saturday, May 4, 2013				
	8:00 AM	5:00 PM	POMS Annual Conference Registration Check-in	Registration Counter
	7:00 AM	7:50 AM	College President's Breakfast (Invitation Only)	Allie's Grill
	8:00 AM	9:30 AM	Parallel Sessions	
	9:00 AM	12:30 PM	Exhibits Open	
	9:30 AM	10:00 AM	Morning Coffee Break	
	10:00 AM	11:30 AM	Parallel Sessions	
	11:30 AM	12:30 PM	Lunch on your own	
	11:30 AM	12:30 PM	Program Committee and Track Chairs Lunch (by invitation)	Allie's Grill
	12:30 PM	2:00 PM	Parallel Sessions	
	12:30 PM	5:00 PM	Exhibits Open	
	2:00 PM	2:15 PM	Afternoon Coffee Break	
	2:15 PM	3:45 PM	Parallel Sessions	
	3:45 PM	4:00 PM	Afternoon Coffee Break	
	4:00 PM	5:30 PM	Parallel Sessions	

24th Annual Production and Operations Management (POM) Conference, Denver May 3 - 6, 2013				
Conference Agenda				
	Start Time	End Time	Event	Location
Saturday, May 4, 2013				
	5:45 PM	6:30 PM	College of Supply Chain Management Business Meeting	Suites I & II
	5:45 PM	6:30 PM	College of Healthcare Operations Management Business Meeting	Suites IV
	5:45 PM	6:30 PM	College of Behavior in Operations Management Business Meeting	Salons A & B
	5:45 PM	6:30 PM	College of Service Operations Business Meeting	Mattie Silks
	5:45 PM	6:30 PM	College on Humanitarian Oprs. & Crisis Mgt. Business Meeting	Suites III
	5:45 PM	6:30 PM	College of Sustainable Operations Business Meeting	Suites V & VI
	5:45 PM	6:30 PM	College of Product Innovation & Tech. Mgmt. Business Meeting	Salons C & D
	6:30 PM	8:00 PM	President's Reception (Open to all registered attendees & guests)	Salons E & F
Sunday, May 5, 2013				
	8:00 AM	5:00 PM	POMS Annual Conference Registration Check-in	Registration Counter
	7:15 AM	11:45 AM	Emerging Scholars Breakfast & Program for Registered Participants	Mattie Silks
	8:00 AM	9:30 AM	Parallel Sessions	
	8:00 AM	9:30 AM	POMS Practice Leaders Semi Plenary Session: Health Care and Operations (Mayo Clinic + Amgen) + (PwC)	Suites IV
	9:30 AM	12:30 PM	Exhibits Open	
	9:30 AM	9:45 AM	Morning Coffee Break	
	9:45 AM	11:15 AM	Parallel Sessions	
	9:45 AM	11:15 AM	POMS Practice Leaders Semi Plenary Session: Supply Chain Management (Dell, Xilinx, Sonoco)	Suites IV
	11:15 AM	12:45 PM	Awards Ceremony & Luncheon (Open to all registered attendees & guests)	Salons E & F
	1:00 PM	2:30 PM	Plenary Session: Dr. Gang Yu's speech – 2012 MKS Award Winner	Salons E & F
	1:00 PM	5:00 PM	Exhibits Open	
	1:30 PM	5:00 PM	Doctoral Consortium	Mattie Silks
	2:45 PM	4:15 PM	Parallel Sessions	
	2:45 PM	4:15 PM	POMS Practice Leaders Semi Plenary Session: Business Analytics (HP + Google + Nestlé)	Suites IV
	4:15 PM	4:30 PM	Afternoon Coffee Break	
	4:30 PM	6:00 PM	Parallel Sessions	
	4:15 PM	4:30 PM	Afternoon Coffee Break II	
	4:30 PM	6:00 PM	Parallel Sessions	
	4:30 PM	6:00 PM	POMS Practice Leaders Forum: Next Steps - POMS practice leaders + POMS board members + MKS-EPOMP Award Winners (by Invitation)	Suites IV
	6:05 PM	6:45 PM	POMS Business Meeting (Please attend --all are invited)	Mattie Silks
	6:15 PM	7:45 PM	Emerged Scholars Reception	Allie's Grille
Monday, May 6, 2013				
	8:00 AM	10:00 AM	POMS Annual Conference Registration Check-in	Registration Counter
	8:00 AM	11:30 AM	POM Exhibits Open	
	8:00 AM	9:30 AM	Parallel Sessions	
	9:30 AM	9:45 AM	Coffee Break	
	9:45 AM	11:15 AM	Parallel Sessions	

Conference Tracks

Behavioral Issues in Operations Management (BIOM)

Cynthia Wallin, Brigham Young University [cynthia.wallin@byu.edu]

Natalia Santamaria, Universidad De Los Andes [n-santam@uniandes.edu.co]

The focus of this track is the analysis of human behavior with relevance to operations management, it is open to studies of all aspects of behavior that is not completely determined by perfect rationality. Examples include decision making under uncertainty and complexity, social preferences, team dynamics, decision making across cultures, collaboration across cultures, etc. Research submitted to this track should have a clear operations context. All research methodologies are welcome.

Empirical Research in Operations Management (EROM)

Manpreet Hora, Georgia Institute of Technology [manpreet.hora@scheller.gatech.edu]

Robert Klassen, University of Western Ontario [rklassen@ivey.uwo.ca]

Submissions in this track should focus on empirical methodology and application research, and operations or supply chain management research. Specifically, the research should be based on data from sources including but not limited to case studies, controlled experiments, archival records, surveys and simulations. The data could be from any industry including retail, manufacturing, financial, wholesale, and other services, etc. The reported research should apply or advance operations and supply chain concepts and should provide insights helpful to make strategic and operational decisions. Keywords: Econometrics, Time series, Retrospective, Path analysis, Statistics, Analysis of Variance, Case Study, Cluster Analysis, Content Analysis, Empirical Methodology, Data Envelopment Analysis, Event Study, Factor Analysis, Moderation, Mediation, Profile Deviation, Regression, Simulation, Structural Equation Model, Critical Incident, Cross Section, Experiment, Longitudinal, Panel, Population, Sample, Scale Development, Survey, Operations Strategy.

General Track (GENT)

Jayanth Jayaram, University of South Carolina [jayaram@moore.sc.edu]

Mark Ferguson, University of South Carolina [mark.ferguson@moore.sc.edu]

This track is for any presentation whose topic does not fit well within the other existing tracks

Healthcare Operations Management (HLTC)

Ken Klassen, Brock University [kklassen@brocku.ca]

Hari Balasubramanian, University of Massachusetts Amherst [hbalasubraman@ecs.umass.edu]

For the Healthcare Operations track, we seek submissions that highlight the effectiveness of operations management in improving overall patient outcomes by enhancing the processes and systems critical to the delivery of healthcare. While traditional issues ailing healthcare – inefficiencies, waste and redundancy, inadequate resources – remain unsolved, newer issues such as ever-decreasing reimbursements, conflict-of-interests among healthcare providers, pay -for-performance, private versus public financing of healthcare, etc. keep making the processes surrounding the delivery of care more complicated. Addressing these challenges requires developing and applying knowledge and skills within the operations management domain to the healthcare industry. We seek a mix of research papers that highlight the variety of healthcare operations management approaches tackling both well-known and emerging challenges: (1) research that addresses operations management issues motivated by the healthcare industry, in order to build theoretical knowledge benefitting the greater operations management community; (2) research that adapts operations management techniques in fundamentally novel ways to address healthcare operations issues; (3) and research that applies existing

operations management knowledge to solve healthcare issues at one or more healthcare organizations, and therefore demonstrates direct and implementable relevance to other healthcare providers. Keywords: Patient and process flow modeling, analysis, and improvement; Scheduling models for staff, patients, or resources (e.g., operating rooms); Clinical capacity planning/management; Behavioral operations in healthcare delivery systems; Operations strategy in the healthcare sector; Healthcare logistics / supply chain management, including response to epidemics and pandemics; Quality and safety improvement in healthcare; Managing and forecasting patient demand; Designing and improving healthcare delivery environments and patient experiences; Knowledge transfer and learning in healthcare organizations; New product development in medical, pharmaceutical, and healthcare-related industries; Technology innovation and diffusion in healthcare; Analytical and empirical models of adoption of IT initiatives (EMR, CPOE, eMAR etc.) in healthcare organizations at local/regional/statewide level; Application of Lean methodology in healthcare; Medical outcome measurement; Evidence based delivery of medical care; Models of healthcare finance, including payer-provider issues; Competition in healthcare.

Humanitarian Operations and Crisis Management (HOCM)

Kate Hughes, Heriot-Watt University [kate.hughes@hughes-scm.com]

Nezih Altay, Depaul University [naltay@depaul.edu]

Natural disasters and crises are omnipresent threats to our lives and local and global economies. Although these threats are ever present their nature, sources and impacts have evolved in time. Consequently, the humanitarian and emergency management field is fast changing to adapt to these changes and we as operations and supply chain management researchers need to not just simply keep up but hopefully lead that change. For this upcoming meeting we invite quality submissions within the scope of humanitarian operations, crisis management and community supply chains on topics such as: research dealing with policies; disaster management; emergency response and management; vulnerability mapping; coordination and collaboration among humanitarian actors; information issues and challenges; humanitarian partnerships; modeling humanitarian operations; practice-academia gap in humanitarian logistics; sustainable humanitarian supply chains and the impact of climate change; procurement and pre-positioning; buyer-supplier relationships, data sources in humanitarian operations, OR/MS approaches to humanitarian problems, rebuilding and restoration activities and impact on beneficiaries, current disaster management challenges; methodological and challenges and tools; and country or regional-themed research. We are open to empirical research, modelling and simulation, concept papers, theoretical papers as well as case studies.

Inventory Management (INVM)

Lingxiu Dong, Washington University St Louis [dong@wustl.edu]

Tim Huh, University of British Columbia [tim.huh@sauder.ubc.ca]

The Inventory Management Track invites a variety of submissions that study the inventory, capacity, and production related topics in manufacturing, service, and retailing operations, including research at the interface of inventory and marketing, finance, and other disciplines. In addition to mathematical models and empirical studies, best practices, case studies, tutorials, and panel discussions are also welcome.

Learning and Knowledge Management in OM (LKOM)

Aravind Chandrasekaran, Ohio State University [chandrasekaran.24@osu.edu]

Michael Lapré, Vanderbilt University [michael.lapre@owen.vanderbilt.edu]

We invite submissions that focus on operational level learning and knowledge management

issues. Topics in this track include organizational learning curves, front-line employee learning, team/project learning, productivity dilemma, exploration – exploitation tensions, ambidextrous organizations, social networks, knowledge management within and across organizations, distributed knowledge work and management of intellectual property. We welcome research from a variety of industry context including manufacturing, healthcare, financial, R&D, Information Technology, Medical Device etc. Papers can also traverse different units of analysis such as individual, project, business unit, supply chain and networks.

Manufacturing Operations (MANF)

Santosh Mahapatra, Clarkson University [smahapat@clarkson.edu]

Farzad Mahmoodi, Clarkson University [mahmoodi@clarkson.edu]

Manufacturing and Operations management plays a critical role in producing and delivering goods and services to customers. It involves planning, designing, controlling and improving the organization's resources and processes to transform capital, skills, and materials into products and services. Effective management of operations enables companies to gain a competitive advantage by creating cost leadership, exceptional quality, quick response to customer needs, and on-time delivery of products and services to market. It is important that any manufacturing and operations strategy be aligned with the overall business strategy. This track will focus on theoretical and managerial issues in the field of manufacturing and operations management, including manufacturing strategy, capacity planning, collaborative planning and forecasting, advanced manufacturing systems, manufacturing processes, project management, total quality management (TQM), lean and six sigma, manufacturing and operational flexibility, agile manufacturing, facility location and network design, facility layout, vehicle routing, enterprise resource planning, etc.

Marketing and Operations Management Interface (MOMI)

Michael Galbreth, University of South Carolina [galbreth@moore.sc.edu]

Glen Schmidt, University of Utah [glen.schmidt@utah.edu]

We invite submissions investigating the interface between marketing (typically charged with generating demand) and operations (typically charged with generating supply), who must jointly work to match supply with demand. The challenge in coordinating these two tightly linked areas creates a fertile ground for research to provide relevant new insights for practice. All methodological approaches to issues at this interface are welcome.

Operations Management and Economic Models (OMEM)

Fernando Bernstein, Duke University Durham [fernando@duke.edu]

We invite submissions that explore economic models in operations management. Submissions might study any issue related to supply chain management, contracting, strategic behavior in supply chains, etc.

Operations Management Practice (OMPR)

Sanjay Ahire, University of South Carolina [ahire@moore.sc.edu]

Richard Metters, Texas A&M University College Station [rmetters@mays.tamu.edu]

The goal of the "OM Practice" track is to enhance the connections of OM academics and researchers to OM practice. We invite submissions from practicing managers and consultants, from academic/industry consortiums, and from academics engaged in industry/practice outreach. The submissions should highlight how OM competencies and techniques have enabled/advanced OM practice and/or how OM practice has informed OM research.

Conference Tracks

Product Innovation and Technology Management (PITM)

Jeremy Hutchison-Krupat, University of Virginia [krupatj@darden.virginia.edu]

Nektarios Oraiopoulos, Cambridge University [nektarios@gatech.edu]

We invite submissions that use mathematical or empirical approaches to address the challenges of the innovation process. For the purposes of this track, this includes product, process, service, and business-model innovation, technology strategy, identification and commercialization of new technologies, the management of the R&D process, collaborative structures and processes, coordination and incentives. While the track approaches innovation and new product development with an Operations orientation, emphasizing processes and execution, designing successful new products is inherently cross disciplinary, and therefore we encourage close ties to other disciplines.Keywords: Product development, innovation, development process, technology, execution.

Production Planning and Scheduling (PRPS)

Meltem Denizel, Ozyegin University [meltem.denizel@ozyegin.edu.tr]

Tevhide Altekin, Sabanci University [altekin@sabanciuniv.edu]

Within this track we seek contributions to cover recent advances in Production Planning and Scheduling. While production planning involves the acquisition and allocation of limited resources to meet customer demand over a given time horizon, scheduling entails generation of a plan with reference to the sequence of time allocated for the completion of an item. We welcome variety of topics related to production planning, including but not limited to capacity planning, lot sizing models, design of production systems, design of product and material recovery systems, coordinating suppliers and key customers in a supply chain, inventory management, sales and operations planning, and production innovations. Whilst classical scheduling addresses various shop environments (single-machine, parallel machines, flow shops, job shops, open shops), scheduling is also widely applied not only in health care operations such as patient scheduling and nurse scheduling but also in timetabling used to schedule university classes and conferences. Studies of any other scheduling topics are welcome, too.

Purchasing and Supply Management (PRSM)

Stephan Wagner, Swiss Federal Institute of Technology Zurich [stwagner@ethz.ch]

Feryal Erhun, Stanford University [ferhun@stanford.edu]

Purchasing and supply management is crucial for the effective and efficient operation of manufacturing and service firms. This track is designed to facilitate presentations that advance knowledge and theory of practices evolving in the field of purchasing and supply management. Topics of interest in this track include but are not limited to outsourcing, global sourcing, risk and disruption in the upstream supply chain, supply networks, service purchasing, relationship management and buyer-supplier relationships, supplier innovation, supplier development, contracting, behavioral issues, as well as issues related to sustainability and green supply management. Furthermore, this track welcomes papers based on all types methodologies.

Retail Operations Management (RTOM)

Hans S Heese, Indiana University [hheese@indiana.edu]

This track focuses on all topics related to the retailing industry. Themes that are of interest include (but are not limited to): retail assortment planning, inventory planning, retail store design, retail network design, Internet and multi-channel retailing, and retail supply chain management. Submissions of papers on the role of technology in retail operations (e.g., RFID technology or Business Analytics) and on the interface of retail operations with other functions

(e.g., finance or marketing) are also encouraged. The track is open to papers based on all types of methodologies, including theoretical, empirical, and field based research.

Revenue Management and Pricing (RVMP)

Noel Perez, Rensselaer Polytechnic Institute [perezn@rpi.edu]

We invite submissions on revenue management and pricing (RMP). The research can be on pricing optimization or study other aspects of pricing. There are no restrictions on research methodology used or in application areas. We encourage research papers on applications of RMP to new industries as well as research that build analytical models, use empirical methods, or study behavioral issues related to RMP.

Scheduling and Logistics (SCHL)

Charles Munson, Washington State University Pullman [munson@wsu.edu]

Amit Eynan, University of Richmond [aeynan@richmond.edu]

Scheduling and logistics are important fields in operations management. Major topics in these fields include, but are not limited to, machine scheduling, workforce scheduling, vehicle routing, distribution, warehousing, cargo handling, transportation, transshipments, material flow, coordination of resources and operations, procurement, and other aspects of supply chain management.

Service Operations (SERV)

Ravi Behara, Florida Atlantic University [rbehara@fau.edu]

Gang Li, Bentley University [gli@bentley.edu]

This track is designed along the objectives of the POMS College of Service Operations. We invite submissions from scholars and practitioners interested in all aspects of research, teaching, and practice in Service Operations Management. Subjects may include, but are not limited to, service measurement, service productivity, service supply chains, product-service systems, service design, service quality, service recovery, lean service, IT-enabled services, service innovation, service analytics, service organizational design and structures, service value, performance management systems in services, coordinating service strategy and operations, behavioral service operations, global service operations, non-profit services operations, public services operations, and teaching service operations. We welcome all research methodologies, including theoretical, empirical, case studies and field studies, presentations from practitioners, and papers on teaching service operations. Tutorials and panel sessions are also encouraged. Keywords: inter-disciplinary studies in services, global services, non-profit and public services, service organizational design, service strategy, service innovation, service analytics, service practice, and teaching service operations.

Supply Chain Contracting (SCHC)

Vishal Agrawal, Georgetown University [va64@georgetown.edu]

Christopher Tang, University of California Los Angeles [chris.tang@anderson.ucla.edu]

We invite submissions that explore contracting and incentive issues in supply chains using any methodology. Topics may include, but are not restricted to, design of supply contracts, outsourcing, managing decentralized supply chains, alignment of incentives, managing supplier relationships, managing risk in supply chains, and behavioral aspects involved in contracting.

Conference Tracks

Supply Chain Management (CSCM)

Canan Savaskan, Southern Methodist University [csavaskan@mail.cox.smu.edu]

Qi Feng, Purdue University [AnnabelleFeng@Purdue.Edu]

The focus of this track is on research that studies the management of a network of interconnected businesses involved in the provision of product and service packages required by the end customers in a supply chain. Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption as well as returns of goods that do not satisfy well the customer needs. This track is open to all types of studies that have an impact on supply chain management. We welcome emprical as well as analytical work.

Supply Chain Risk Management (SCRM)

Brian Tomlin, Dartmouth College [brian.tomlin@tuck.dartmouth.edu]

Yimin Wang, Arizona State University Tempe [yimin_wang@asu.edu]

We invite submissions on the general theme of risk management in supply chains. We are interested in a range of methodologies, e.g., analytical, behavioral, empirical, and field-based, and a range of topics including but not limited to cost, disruption, quality, reputation, and yield risks and strategies/tactics to manage these risks.

Sustainable Operations (SUST)

Eda Kemahlioglu-Ziya, University of North Carolina Chapel Hill [eda_kemahliogluziya@unc.edu]

This track is open to papers that apply operations management principles in the context of environmental, social and economic sustainability. We welcome papers based on all types of methodologies, including theoretical, empirical, and field-based research.

Work Force Planning (WRFP)

Fred Glover, University of Colorado [glover@opttek.com]

Gary Kochenberger, University of Colorado Denver [Gary.Kochenberger@ucdenver.edu]

This track welcomes papers that focus on the strategic, operational, and tactical issues of work force planning.

Tracks and Abbreviations

Track Name	Abbreviation
Behavioral Issues in Operations Management	BIOM
Empirical Research in Operations Management	EROM
General Track	GENT
Healthcare Operations Management	HLTC
Humanitarian Operations and Crisis Management	HOCM
Inventory Management	INVM
Learning and Knowledge Management in OM	LKOM
Manufacturing Operations	MANF
Marketing and Operations Management Interface	MOMI
Operations Management and Economic Models	OMEM
Operations Management Practice	OMPR
Product Innovation and Technology Management	PITM
Production Planning and Scheduling	PRPS
Purchasing and Supply Management	PRSM
Retail Operations Management	RTOM
Revenue Management and Pricing	RVMP
Scheduling and Logistics	SCHL
Service Operations	SERV
Supply Chain Contracting	SCHC
Supply Chain Management	CSCM
Supply Chain Risk Management	SCRM
Sustainable Operations	SUST
Work Force Planning	WRFP

Friday, May 03, 2013

Track	08:00 AM - 09:30 AM	10:00 AM - 11:30 AM	01:30 PM - 03:00 PM	03:30 PM - 05:00 PM	05:15 PM - 06:45 PM
Note: In the following matrix the room names are followed by the session # given in the program book.					
BIOM	Salon A, #1	Salon A, #27	Salon A, #53 Salon E, #75	Salon A, #79	Salon A, #105
EROM	Suites III, #11	Suites III, #37	Suites III, #63	Suites III, #89	Suites III, #115
GENT			Suites I, #61		Suites I, #113
HLTC	Salon B, #2 Salon E, #23 Suites IV, #12	Salon B, #28 Suites I, #35 Suites IV, #38	Suites IV, #64	Salon B, #80 Suites IV, #90	Salon B, #106 Suites IV, #116
HOCM	Salon I, #7	Salon I, #33 Salon J, #34	Salon I, #59 Salon J, #60	Salon I, #85	Salon I, #111 Salon J, #112
INVM	Matchless, #16	Matchless, #42	Matchless, #68	Matchless, #94	
LKOM		Silverton, #41	Silverton, #67	Silverton, #93	Silverton, #119
MANF	Suites V, #13	Suites V, #39	Suites V, #65	Suites V, #91	Suites V, #117
MOMI	Molly Brown, #19	Molly Brown, #45	Molly Brown, #71	Molly Brown, #97	Molly Brown, #123
OMEM	Pomeroy, #22	Pomeroy, #48	Pomeroy, #74	Pomeroy, #100	Pomeroy, #126
OMPR					
PITM		Suites VI, #40			Matchless, #120
PRPS					
PRSM	Spruce, #20	Spruce, #46	Spruce, #72	Spruce, #98	Spruce, #124
RTOM	Nat Hill, #21	Nat Hill, #47	Nat Hill, #73	Nat Hill, #99	Nat Hill, #125
RVMP					
SCHL			Salon F, #76	Salon F, #102	
SERV	Salon D, #4 Suites I, #9	Salon D, #30	Salon B, #54 Salon D, #56	Salon D, #82 Suites II, #88	Salon D, #108 Suites II, #114
SCHC	Suites II, #10			Suites I, #87	Suites VI, #118
CSCM	Salon G, #5 Salon H, #6	Salon G, #31	Salon G, #57 Salon H, #58	Salon G, #83	Salon G, #109 Salon H, #110
SCRM	Gold Coin, #17	Gold Coin, #43	Gold Coin, #69	Gold Coin, #95	Gold Coin, #121
SUST	Salon C, #3 Salon F, #24	Salon C, #29	Salon C, #55	Salon C, #81 Salon E, #101	Salon C, #107
WRFP					

Saturday, May 04, 2013

Track	08:00 AM - 09:30 AM	10:00 AM - 11:30 AM	12:30 PM - 02:00 PM	02:15 PM - 03:45 PM	04:00 PM - 05:30 PM
Note: In the following matrix the room names are followed by the session # given in the program book.					
BIOM	Salon A, #131	Salon A, #157	Salon A, #183	Salon A, #209	Salon A, #235
EROM	Suites III, #141	Suites III, #167	Suites III, #193	Molly Brown, #227 Suites IV, #220	Suites III, #245
GENT		Suites I, #165	Suites I, #191	Suites I, #217	Salon I, #241
HLTC	Salon B, #132 Salon E, #153 Suites IV, #142	Suites IV, #168	Salon B, #184 Spruce, #202 Suites IV, #194		Suites IV, #246
HOCM	Salon I, #137 Salon J, #138	Salon I, #163 Salon J, #164	Salon I, #189 Salon J, #190	Salon I, #215	Salon J, #242 Suites I, #243
INVM	Matchless, #146	Matchless, #172	Matchless, #198	Matchless, #224	Matchless, #250
LKOM	Silverton, #145	Silverton, #171	Silverton, #197	Silverton, #223	Silverton, #249
MANF	Suites V, #143		Suites V, #195	Suites V, #221	Salon E, #257 Suites V, #247
MOMI	Molly Brown, #149	Molly Brown, #175	Molly Brown, #201		
OMEM	Pomeroy, #152	Pomeroy, #178	Pomeroy, #204	Pomeroy, #230	
OMPR					Pomeroy, #256
PITM	Suites VI, #144	Suites VI, #170	Suites VI, #196	Salon E, #231 Suites VI, #222	Suites VI, #248
PRPS	Suites II, #140	Suites II, #166	Suites II, #192	Suites II, #218	Suites II, #244
PRSM	Spruce, #150			Spruce, #228	Spruce, #254
RTOM	Nat Hill, #151	Nat Hill, #177	Nat Hill, #203	Nat Hill, #229	Nat Hill, #255
RVMP		Spruce, #176			
SCHL	Salon F, #154	Salon F, #180	Salon F, #206	Salon F, #232	
SERV	Mattie Silks, #148	Mattie Silks, #174 Salon E, #179	Mattie Silks, #200	Mattie Silks, #226	Mattie Silks, #252
SCHC	Suites I, #139	Suites V, #169	Salon E, #205		
CSCM	Salon H, #136	Salon G, #161 Salon H, #162	Salon G, #187 Salon H, #188	Salon G, #213 Salon H, #214 Suites III, #219	Salon G, #239 Salon H, #240
SCRM	Gold Coin, #147	Gold Coin, #173		Gold Coin, #225	Gold Coin, #251
SUST	Salon C, #133 Salon D, #134	Salon B, #158 Salon C, #159 Salon D, #160	Salon C, #185 Salon D, #186	Salon C, #211 Salon D, #212	Salon B, #236 Salon D, #238
WRFP					Molly Brown, #253

Sunday, May 05, 2013

Track	08:00 AM - 09:30 AM	09:45 AM - 11:15 AM	02:45 PM - 04:15 PM	04:30 PM - 06:00 PM
Note: In the following matrix the room names are followed by the session # given in the program book.				
BIOM	Salon A, #261	Salon A, #287	Salon A, #313	Salon A, #339 Salon I, #345
EROM	Suites III, #271	Suites III, #297 Suites V, #299	Salon J, #320	Suites III, #349
GENT	Suites IV, #272	Suites I, #295 Suites IV, #298	Suites III, #323 Suites IV, #324	
HLTC	Pomeroy, #282 Salon B, #262	Pomeroy, #308 Salon B, #288	Pomeroy, #334 Salon B, #314	Salon B, #340
HOCM	Salon J, #268	Salon I, #293 Salon J, #294	Salon I, #319	
INVM	Matchless, #276	Matchless, #302		
LKOM	Silverton, #275	Silverton, #301	Silverton, #327	Silverton, #353
MANF	Suites V, #273		Suites V, #325	Suites V, #351
MOMI				Matchless, #354 Molly Brown, #357
OMEM				
OMPR			Gold Coin, #329 Salon H, #318	Gold Coin, #355
PITM	Suites VI, #274	Suites VI, #300	Suites VI, #326	Suites VI, #352
PRPS	Suites II, #270	Suites II, #296	Suites II, #322	
PRSM	Spruce, #280			
RTOM				
RVMP		Spruce, #306	Spruce, #332	Spruce, #358
SCHL				Nat Hill, #359
SERV			Suites I, #321	Suites I, #347
SCHC	Nat Hill, #281	Nat Hill, #307	Nat Hill, #333	
CSCM	Salon G, #265 Salon H, #266	Salon G, #291 Salon H, #292	Salon G, #317	Salon G, #343 Salon H, #344
SCRM	Gold Coin, #277	Gold Coin, #303		
SUST	Salon D, #264	Salon C, #289 Salon D, #290	Matchless, #328 Salon C, #315 Salon D, #316	Salon C, #341
WRFP	Molly Brown, #279	Molly Brown, #305	Molly Brown, #331	

Monday, May 06, 2013

Track	08:00 AM - 09:30 AM	09:45 AM - 11:15 AM

Note: In the following matrix the room names are followed by the session # given in the program book.

BIOM	Salon A, #365	
EROM	Suites III, #375	Suites III, #401
GENT	Gold Coin, #381 Molly Brown, #383	Suites II, #400
HLTC	Salon B, #366 Spruce, #384 Suites IV, #376	Salon A, #391 Salon B, #392
HOCM	Matchless, #380	
INVM		
LKOM	Silverton, #379	
MANF	Nat Hill, #385 Suites V, #377	Suites V, #403
MOMI		
OMEM		
OMPR	Salon I, #371	Salon G, #395 Salon H, #396
PITM	Suites VI, #378	Suites IV, #402 Suites VI, #404
PRPS		
PRSM		Silverton, #405
RTOM		
RVMP		Spruce, #410
SCHL	Mattie Silks, #382	Mattie Silks, #408 Suites I, #399
SERV	Suites I, #373 Suites II, #374	Gold Coin, #407 Salon D, #394
SCHC	Salon H, #370	Salon J, #398
CSCM	Pomeroy, #386 Salon G, #369	
SCRM		Salon C, #393
SUST	Salon C, #367 Salon D, #368 Salon J, #372	
WRFP		

Friday, 10:00 AM - 11:30 AM

30

Friday, 10:00 AM - 11:30 AM, Salon D — *Track:* Service Operations

Session: International Panel on Global Perspectives in the Role of Services

Chair(s): Veronica Martinez Andy Neely

043-1668 International Panel on Global Perspectives in the Role of Services

Morgan Swink, Professor, Michigan State University, United States
Chris Voss, Emeritus Professor, University of Warwick, United Kingdom
Marcia Silva, Professor, Universidade São Paulo, Brazil
Shuo-Yan Chou, Professor, National Taiwan University, Taiwan, Republic of China
Andy Neely, Professor, Cambridge University, United Kingdom
Veronica Martinez, Professor, Cranfield University, United Kingdom

This panel explores and debates on the perception and roles of services from four macro-economic regions around the globe, two emergent and two mature economies. Aiming to bring academic experts in 'Service Operations' from four geographical regions, the panel opens the debate with some meta-management questions for the panelist.

34

Friday, 10:00 AM - 11:30 AM, Salon J — *Track:* Humanitarian Operations and Crisis Management

Session: Practitioner and Commercial Panel on Issues in HCOM

Chair(s): Nezih Altay

043-1665 Practitioner and Commercial Panel on Issues in HCOM

Jock Menzies, Unreported, TermCorp, United States

Research in HOCM has gained popularity over the past five years. However, are we asking the right questions? This panel is an opportunity for HOCM researchers to hear about the real problems practitioners and their commercial partners have on the ground and during long-term planning.

Friday, 01:30 PM - 03:00 PM

64

Friday, 01:30 PM - 03:00 PM, Suites IV — *Track:* Healthcare Operations Management

Session: Publishing Your Healthcare Operations Research - Panel

Chair(s): Craig Froehle

043-1625 Publishing Your Healthcare Operations Research - Panel

Craig Froehle, Associate Professor, University of Cincinnati, United States
Murray Cote, Associate Professor, Texas A&M University College Station, United States
John Fowler, Professor, Arizona State University Tempe, United States
Bruce Golden, Professor, University of Maryland, United States

An interactive panel with leading editors and researchers in healthcare operations on how (and why) to get your research published in both OM and healthcare industry journals.

Friday, 03:30 PM - 05:00 PM

87

Friday, 03:30 PM - 05:00 PM, Suites I — *Track:* Supply Chain Contracting

Session: Innovations in Teaching

Chair(s): Gal Raz Sebastian Fixson

043-1495 Innovations in Teaching

Gal Raz, Associate Professor, University of Virginia, United States
Sebastian Fixson, Associate Professor, Babson College, United States
Glen Schmidt, Associate Professor, University of Utah, United States

This session is comprised of three speakers who will each provide perspective on the topic of adapting the classroom to better fit the changing student demographics and including advances in the available technologies and tools. The aim will be to solicit and encourage discussion from the session attendees as well.

90

Friday, 03:30 PM - 05:00 PM, Suites IV — *Track:* Healthcare Operations Management

Session: Practitioner Panel: Healthcare Operations and Lean Practice: What are we waiting for?

Chair(s): Linda LaGanga

043-1626 Healthcare Operations and Lean Practice Panel: What are we waiting for?

Linda LaGanga, Director of Quality Systems & Operational Excellence, Mental Health Center of Denver, United States
Craig Iverson, Lean Six Sigma Process Improvement Manager , Mental Health Center of Denver, United States
Surya Pathak, Assistant Professor, University of Washington Bothell, United States
Mario Harding, Administrative Director, Denver Health, Department of Medicine, United States
Elizabeth Lowdermilk, Physician (MD), Denver Health, United States

Our panel integrates the perspectives of healthcare providers, administrators, and researchers. We present predictive models and results of actual rapid improvement events, focusing on wait time and delays in healthcare organizations. We consider quantifiable and qualitative benefits of reducing waste and waiting time, and the value in healthcare organizations.

Friday, 05:15 PM - 06:45 PM

113

Friday, 05:15 PM - 06:45 PM, Suites I — *Track:* General Track

Session: Designing an OM Course

Chair(s): Roger Schmenner

043-0027 Designing an OM Course with Swift, Even Flow at its Center

Roger Schmenner, Emeritus Professor, Indiana University Indianapolis, United States

How can you raise the stature of OM in your business curriculum? How to make OM students' favorite course? The secret revealed. Schmenner discusses how using the concept of swift, even flow as the integrating theme of the course can turn students on to the importance of operations.

116

Friday, 05:15 PM - 06:45 PM, Suites IV — *Track:* Healthcare Operations Management

Session: Teaching Healthcare Operations - Panel

Chair(s): Hari Balasubramanian

043-1623 Panel: Teaching Healthcare Operations Management

Hari Balasubramanian, Assistant Professor, University of Massachusetts Amherst, United States
Elisa Long, Assistant Professor, Yale University, United States
Amy Cohn, Associate Professor, University of Michigan Ann Arbor, United States

This interactive panel will discuss strategies to teach healthcare operations management. The panelists will touch upon aspects such as structuring syllabi; adjusting the technical details depending on the student audience (clinicians/administrators/engineers/business school students); and the necessity and difficulty of using real world datasets for pedagogical reasons.

124

Friday, 05:15 PM - 06:45 PM, Spruce — *Track:* Purchasing and Supply Management

Session: Sustainable Sourcing and Supply Chain Management: Thought Leader Panel

Chair(s): Craig Carter

043-1642 Sustainable Sourcing and Supply Chain Management: Thought Leader Panel

Lisa Ellram, Professor, Miami University, United States
Susan Golicic, Professor, Colorado State University Fort Collins, United States
Robert Klassen, Professor, University of Western Ontario, Canada
Zhaohui Wu, Associate Professor, Oregon State University, United States

Thought leaders will share their perspectives concerning the current state of sustainable supply chain management (SSCM) research and future directions. The discussion will focus on supply management and the broader supply chain, empirical research, and opportunities to marry empirical and analytical techniques as this research stream moves forward.

Saturday, 08:00 AM - 09:30 AM

145

Saturday, 08:00 AM - 09:30 AM, Silverton *Track:* Learning and Knowledge Management in OM
Session: Industry Studies, Public Policy and Organizational Learning
Chair(s): John Gray

043-1661 Panel on Industry Studies, Public Policy, and Organizational Learning

John Gray, Assistant Professor, Ohio State University, United States
Geoffrey Parker, Professor, Tulane University, United States
Nitin Joglekar, Associate Professor, Boston University, United States
Edward Anderson, Associate Professor, University of Texas Austin, United States

This panel discussion will address research and managerial opportunities at the intersection of public policy and operational decision making from an organizational learning perspective. This will be followed by an interactive discussion of underlying issues for industry studies and public policy work in broader POM settings.

148

Saturday, 08:00 AM - 09:30 AM, Mattie Silks *Track:* Service Operations
Session: Service Operations Analysis - training students for success in the service economy
Chair(s): Scott Sampson

043-1669 Tutorial on Service Operations Analysis

Scott Sampson, Professor, Brigham Young University, United States

This session will discuss an important new SOM tool known as PCN Analysis. The PCN Analysis tool enables students to document service operations, uncover system deficiencies, identify strategic improvements, and systematically explore innovation opportunities. Recent experience has shown that students love PCN Analysis, and find it intuitive and insightful.

Saturday, 10:00 AM - 11:30 AM

164

Saturday, 10:00 AM - 11:30 AM, Salon J *Track:* Humanitarian Operations and Crisis Management
Session: The role of media in humanitarian operations
Chair(s): Kate Hughes

043-1664 Media Panel

Stephen Ross, Professor, Columbia University, United States

A panel discussion on the impact of media on donations and humanitarian operations.

167

Saturday, 10:00 AM - 11:30 AM, Suites III *Track:* Empirical Research in Operations Management
Session: Editorial Panel on Empirical Research in Operations Management
Chair(s): Manpreet Hora

043-1641 Editorial Panel on Empirical Research in Operations Management

Thomas Choi, Professor, Arizona State University Tempe, United States
Robert Klassen, Professor, University of Western Ontario, Canada
Michael Lapré, Associate Professor, Vanderbilt University, United States
Aleda Roth, Professor, Clemson University, United States

This session includes a panel of scholars who have extensively published empirical work and are serving as editors (including Associate Editors and Senior Editors). They will discuss their view on the trajectory of empirical research in OM focusing on engaging conceptual research questions, current issues and trends and emerging themes.

174

Saturday, 10:00 AM - 11:30 AM, Mattie Silks *Track:* Service Operations
Session: Teaching Service Operations
Chair(s): Mark Davis Janelle Heineke

043-1666 Workshop on Teaching Service Operations

Mark Davis, Professor, Bentley University, United States
Janelle Heineke, , Boston University School of Management, United States
Joy Field, Associate Professor, Boston College, United States

The goal of this workshop is to introduce some class exercises that not only emphasize topics covered in a service operations management course, but actually integrate many of them into the design of the course itself. These course-related examples demonstrate the significant value that is generated in the course.

Saturday, 12:30 PM - 02:00 PM

195

Saturday, 12:30 PM - 02:00 PM, Suites V — *Track:* Manufacturing Operations

Session: Emerging Challenges in Manufacturing Supply Chains – An Expert Panel's Perspective

Chair(s): Steve Melnyk

043-1575 Emerging Challenges in Manufacturing Supply Chain – An Expert Panel's Perspective

Steve Melnyk, Professor, Michigan State University, United States
Craig Carter, Associate Professor, Arizona State University Tempe, United States
Phillip Carter, , ,
Barbara Flynn, Professor, Indiana University, United States

The emphasis on contract manufacturing, globalization and servicization have increased manifold in recent years. This expert panel discussion would explore the set of challenges due to these recent developments and present insights into the strategic approaches to deal with the challenges.

200

Saturday, 12:30 PM - 02:00 PM, Mattie Silks — *Track:* Service Operations

Session: Intersection of Hospitality and Healthcare

Chair(s): Rohit Verma

043-1122 The Intersection of Hospitality and Healthcare: Exploring Lessons for Research and Practice

Rohit Verma, Professor, Cornell University, United States
Kenneth Boyer, Professor, Ohio State University, United States
Craig Froehle, Associate Professor, University of Cincinnati, United States
Srinagesh Gavirneni, Associate Professor, Cornell University, United States
Rachna Shah, Associate Professor, University of Minnesota, United States

Both healthcare and hospitality depends on the core principle of creating a culture of respectful treatment and valuing their stakeholders. Despite obvious differences regarding the purpose, both types of organizations also share many common operational functions. The purpose of this panel discussion is to find areas of research.

Saturday, 02:15 PM - 03:45 PM

223

Saturday, 02:15 PM - 03:45 PM, Silverton — *Track:* Learning and Knowledge Management in OM

Session: OM Research in Learning and Knowledge Management

Chair(s): Kevin Linderman Aravind Chandrasekaran

043-1662 Panel on OM Research in Learning and Knowledge Management

Aravind Chandrasekaran, Assistant Professor, Ohio State University, United States
Kevin Linderman, Associate Professor, University of Minnesota, United States
Michael Lapré, Associate Professor, Vanderbilt University, United States
Cheryl Gaimon, Professor, Georgia Institute of Technology, United States
Nitin Joglekar, Associate Professor, Boston University, United States
Roger Bohn, Professor, University of California San Diego, United States

This panel will discuss contemporary research issues in Learning and Knowledge Management in Operations. We will focus primarily on how to do rigorous and relevant research in this area and how evidence from OM research can inform research in strategy and organizational theory.

226

Saturday, 02:15 PM - 03:45 PM, Mattie Silks — *Track:* Service Operations

Session: Spa and Wellness Service Management

Chair(s): Jay Kandampully

043-1667 Executive Panel on Spa and Wellness Service Management

Richard Dusseau, President, Trilogy Spa Holdings, United States
Lynne McNees, President, International SPA Association, United States
Ella Stimpson, Chairman, International SPA Association, United States
Lydia Hanks, Assistant Professor, Florida State University, United States
Michael Collins, Associate Professor, Coastal Carolina University, United States
Jay Kandampully , Professor, Ohio State University, United States

To meet the demands of customers in an increasingly competitive market, spa and wellness firms have become highly customer-driven and service-oriented. They have become clearly 'people' focused and have adopted various service management approaches to effectively manage and provide customers with the superior service, value and experience they demand.

Saturday, 04:00 PM - 05:30 PM

241

Saturday, 04:00 PM - 05:30 PM, Salon I *Track:* General Track
Session: PANEL on Women in Operations Management: Navigating the Dual Career Lifestyle
Chair(s): Cheryl Gaimon

043-1617 Panel on Women in Operations Management: Navigating the Dual Career Lifestyle

Cheryl Gaimon, Professor, Scheller College of Business, United States
Barbara Flynn, Professor, Indiana University, United States
Deishin Lee, Assistant Professor, Harvard University, United States
Eve Rosenzweig, Associate Professor, Emory University, United States
Rachna Shah, Associate Professor, University of Minnesota, United States
Svenja Sommer, Associate Professor, Hec Paris, France

A panel of women at all ranks of academia will discuss the "dual career lifestyle." Each panel member will reflect on the challenges she faces and THE solutions she pursues to manage her own career along with her spouse's career.

247

Saturday, 04:00 PM - 05:30 PM, Suites V *Track:* Manufacturing Operations
Session: Relevance of Lean and Six Sigma for Manufacturing Excellence in the 21st Century
Chair(s): Santosh Mahapatra

043-1569 Relevance of Lean and Six Sigma for Manufacturing Excellence in the 21st century

Yavuz Bozer, Professor, University of Michigan Ann Arbor, United States
Wallace Hopp, Professor, University of Michigan Ann Arbor, United States
Morgan Swink, Professor, Michigan State University, United States
Peter Ward, Professor, Ohio State University, United States

The usefulness of Lean and Six Sigma has often been questioned on grounds such as narrow conceptualization, failure to suggest new product ideas, and overreliance on a set of generic tools/standards. This discussion would explore the relevance of the two of the most popular manufacturing innovations in 21st century.

Sunday, 08:00 AM - 09:30 AM

268

Sunday, 08:00 AM - 09:30 AM, Salon J *Track:* Humanitarian Operations and Crisis Management
Session: Journal Editors' Perspective on the Future of HOCM Research
Chair(s): Nezih Altay

043-1663 Editors Panel

Lisa Ellram, Professor, Miami University, United States
Craig Carter, Associate Professor, Arizona State University Tempe, United States
Gyongyi Kovacs, Professor, Hanken Svenska handelshögskolan, Finland
Irmak renda-tanali, Professor, University of Maryland, United States

A panel discussion with the editors of relevant journals on the future of HOCM research.

279

Sunday, 08:00 AM - 09:30 AM, Molly Brown *Track:* Work Force Planning
Session: New Models for Strategic Workforce Planning
Chair(s): Marco Better

043-1679 Tutorial: Combining Simulation and Optimization for Strategic Workforce Planning

Marco Better, Director, Customer Solutions, Optek Systems, Inc., United States

Strategic workforce planning (SWP) has been identified as a top business challenge and a high priority in order to produce organizations that are capable of performing more effectively. In this tutorial we'll demonstrate a state of the art combination of simulation and optimization that enables organizations to optimize workforce readiness.

Sunday, 02:45 PM - 04:15 PM

318

Sunday, 02:45 PM - 04:15 PM, Salon H
Track: Operations Management Practice
Session: Practitioner Issues in OSM
Chair(s): Roberta Russell

043-1648 Practitioner Issues in Operations and Supply Chain Management

Roberta Russell, Professor, Virginia Polytechnic Institute And State University, United States
Sharon Rice, Executive Director, APICS Foundastion, United States
Bhaskar Majee, Director of Sales Planning and Operations, Philips, United States
Shari Ruelas, Value Chain Optimization Coordinator, Chevron, United States
Gustavo Ugarte, Sustainability Manager, MillerCoors, United States

Industry practitioners discuss the most pressing issues in global operations and supply chain management. From the use of big data and business analytics to addressing problems in the extended supply chain, this session provides a window into the corporate balancing act of risk and reward in an age of uncertainty.

331

Sunday, 02:45 PM - 04:15 PM, Molly Brown
Track: Work Force Planning
Session: Round Table on Modern Workforce Planning and Modeling
Chair(s): Jay April

043-1672 Panel: Round Table on Modern Workforce Planning and Modeling

Jay April, Chief Development Officer, Optek Systems, Inc., United States

Modern Workforce Planning and Modeling must identify workforce requirements that achieve higher revenues and lower costs, guide optimal decisions to maximize readiness, and enable efficient recruitment, retention, and career planning. We will identify and discuss appropriate technologies for fulfilling these expectations.

332

Sunday, 02:45 PM - 04:15 PM, Spruce
Track: Revenue Management and Pricing
Session: Teaching Revenue Management and Pricing
Chair(s): John Turner

043-1643 Teaching Panel: Revenue Management and Pricing

Itir Karaesmen, Assistant Professor, American University, United States
John Turner, Assistant Professor, University of California Irvine, United States
John Birge, Professor, University of Chicago, United States
Mark Ferguson, Professor, University of South Carolina, United States
Dan Zhang, Assistant Professor, University of Colorado Boulder, United States

This is a panel on Teaching Revenue Management and Pricing (RMP). Panelists will share their experiences in introducing RMP courses to business curriculum, designing courses at graduate and/or undergraduate levels, and teaching RMP topics as part of core courses or other electives.

Sunday, 04:30 PM - 06:00 PM

353

Sunday, 04:30 PM - 06:00 PM, Silverton
Track: Learning and Knowledge Management in OM
Session: Track Showcase Speaker: Roger Bohn
Chair(s): Michael Lapré

043-1670 How the Art of Flying Became (Mostly) a Science

Roger Bohn, Professor, University of California San Diego, United States

I address an important gap in OM, with a descriptive and predictive framework for high-skilled services. I use a longitudinal analysis of flying technology, which improved from “learning by dying” to present methods 1000x better. Surgery today is roughly the level of flying in 1939.

358

Sunday, 04:30 PM - 06:00 PM, Spruce
Track: Revenue Management and Pricing
Session: Revenue Management Practice: Industry Panel
Chair(s): Pelin Pekgun

043-1644 Industry Panel: Revenue Management and Pricing

Pelin Pekgun, Assistant Professor, University of South Carolina, United States
Kathleen Mallery, Director Revenue Opt Planning and Dev, Carlson Rezidor Hotel Group, United States
Dev Koushik, Director of Revenue Optimization, InterContinental Hotels Groups, United States
Sharon Hormby, Senior Director, Total Yield Systems, Mariott International , United States

Innovative uses of revenue management as well as ongoing efforts and challenges in the hospitality industry will be discussed by industry panelists.

Notes

POMS 2013

Presentation Schedule

Notes

Friday, 08:00 AM - 09:30 AM

1

Friday, 08:00 AM - 09:30 AM, Salon A — *Track:* Behavioral Issues in Operations Management

Session: Contracts and Competition in Supply Chains

Chair(s): Ehsan Elahi

043-0594 Mental Models of Supply Chain Contracts

Vinay Kalakbandi, Student, Indian Institute of Management Bangalore, India

This paper explores the factors affecting the 'risk perception' of various known supply-chain contracts. We further postulate that risk perception impacts contract-choice likelihood, corresponding order-quantity choice and hence supply-chain performance. To demonstrate this, we use an experimental setup where subjects comparatively analyze these contracts and make contract-choice and ordering decisions.

043-1026 Carrot versus Stick: the effectiveness of contract mechanisms on incentivizing supplier innovation

David Wuttke, Student, Ebs Business School, Germany
Karen Donohue, Associate Professor, University of Minnesota, United States
Enno Siemsen, Associate Professor, University of Minnesota, United States

Using a combination of analytical models and laboratory experiments, we study the effectiveness of buyer contract mechanisms, including breach penalties and profit sharing, on incentivizing product innovation at the supplier level. Our results provide insight into how the mechanisms can be altered to better account for supplier-specific behavior.

043-1180 Analyzing Inventory Decisions in Supply Chain Contracts: An experimental Approach

Ehsan Elahi, Assistant Professor, University of Massachusetts, Boston, United States
Davood Golmohammadi, Assistant Professor, University of Massachusetts, Boston, United States

To find the reasons behind sub-optimal inventory decisions in supply chains, we apply neural network and statistical methods to a large set of data collected from laboratory experiments. Our early results show that ex post inventory error and demand chasing are not the major reasons behind this deviation.

2

Friday, 08:00 AM - 09:30 AM, Salon B — *Track:* Healthcare Operations Management

Session: Improvements to Surgical Procedures

Chair(s): Paul St. Jacques

043-0645 How Process Analysis Can Improve Spinal Cord Stimulation Implementation

Gilles Reinhardt, Associate Professor, Depaul University, United States

Spinal cord stimulation has been in clinical use for chronic pain for four decades and is still one of the most expensive treatment modalities available. We propose a process analysis approach to model, measure and improve its delivery while maintaining its effectiveness.

043-0134 Data mining evaluated IMRT plans to aid future beam angle selection

Stuart Price, Student, University of Maryland, United States
Bruce Golden, Professor, University of Maryland, United States
Edward Wasil, Professor, American University, United States
Hao Zhang, Assistant Professor, University of Maryland School of Medicine, United States

A good IMRT plan is a set of beam angles and intensities that deliver radiation to the tumor while minimizing damage to healthy tissue. Fully evaluating intensities and performance from angle sets is computationally intensive, we data mine evaluated plans to create a model to screen angle sets before evaluation.

043-1110 Healthcare process analysis

Scott Sampson, Professor, Brigham Young University, United States

Healthcare involves complex systems of providers and patients. Healthcare processes often involve complex interactions among patients and multiple providers. This presentation will review a powerful tool for process analysis known as PCN Analysis, which documents, analyzes, and improves complex processes such as healthcare. We will review resources available at http://services.byu.edu

043-0543 Identification of Potential Perioperative Result Defect through Automated Laboratory Scanning

Paul St. Jacques, Associate Professor, Vanderbilt University, United States
Jesse Ehrenfeld, Associate Professor, Vanderbilt University, United States
Lawrence House, Student, Vanderbilt University, United States

Identification of potentially cryptic defects in the adult surgical process is difficult. We explore the use of automated computerized laboratory record scans to identify potential cases of myocardial injury during surgery. Using this technique, we are able to identify cases warranting further review by quality improvement teams.

3

Friday, 08:00 AM - 09:30 AM, Salon C — *Track:* Sustainable Operations

Session: Sustainable Strategy and Policy Making

Chair(s): Sam Aflaki Shumail Mazahir

043-0512 Internal and external drivers of green investments in the energy sector

Andrea Masini, Associate Professor, Hec Paris, France
Laura Toschi, Assistant Professor, University of Bologna, Italy

This paper aims to contribute to the ongoing debate on green energy investments. By analyzing the financing process of more than 1,000 clean tech companies over the last 20 years we examine how firm-specific factors, public policies and external environmental contingencies affect the ability of green companies to attract capital.

043-0678 Recovery Legislations versus Taxation/Subsidy Policies for Product Remanufacturing

Shumail Mazahir, Student, Hec Paris, France
Sam Aflaki, Assistant Professor, Hec Paris, France

This paper studies the effect of incorporating recovery/remanufacturing targets on the performance of firms and compares them with incentive schemes such as taxation/subsidy policies. We characterise conditions under which the two types of policies outperform each other in terms of prices, manufactured and recovered quantities etc.

043-1284 Procurement Auctions Under Sustainability Default Risk

Karca Aral, Student, INSEAD, France
Luk Van Wassenhove, Professor, INSEAD, France

We study a multi-attribute auction setting where a manufacturer facing green demand issues an RFP,and decides which supplier to procure from given price bids and observed sustainability levels.We discuss how the degree of informativeness of sustainability audits and the different information revelation regimes affect manufacturer's profits and the allocative efficiency.

043-1510 Dynamics of responsible relationship

Pavel Izhutov, Student, Stanford University, United States
Hau Lee, Professor, Stanford University, United States

We analyze the investment decisions on responsible operations bysuppliers under three sourcing modes: (1) spot market, (2) long-termrelationships, and (3) long-term contracts. The results show that thesourcing mode can affect the supplier's investment decisions innon-trivial ways.

4

Friday, 08:00 AM - 09:30 AM, Salon D — *Track:* Service Operations

Session: Quality and Productivity Management

Chair(s): Stephen Pearce

043-0542 'Lean' policing: Initial findings from a study of 5 UK police forces

Harry Barton, Professor, Nottingham Trent University, United Kingdom

Improving police performance through the adoption of a 'lean' philosophy is advocated in this paper. This is seen as a potential driver for internal police improvements and is made in response to the governments' call for reform and to address the challenges of a decrease in future police funding.

043-1200 Customers and service productivity: tackling the challenges with service improvement

Stephen Pearce, Student, University of Exeter, United Kingdom
Roger Maull, Professor, University of Exeter, United Kingdom
Philip Smart, Professor, University of Exeter, United Kingdom

The library service must reduce its costs by 30%, yet customer expectations are increasing - these appear mutually exclusive. Service managers can tackle these challenges with service productivity, IT-enabled change and service improvement. This research explores how the library met its funding challenges, improved productivity and enhances the service concept.

043-1258 Quality-Aware Process Components

Vikram Jamwal, Sr. Scientist, TCS, India

Process components are the means to create modular process designs. Here we argue that process components should derive the motive force from the Quality requirements in a Service. We lay the foundation of Quality-Aware process components (QA-PC). Besides creating modular process structure, QA-PCs become a means of capturing best practices.

5

Friday, 08:00 AM - 09:30 AM, Salon G — *Track:* Supply Chain Management

Session: Strategic consumers and competition in retail channel

Chair(s): Haoying Sun

043-0348 Are Strategic Customers Bad for a Supply Chain?

Yen-Ting Lin, Assistant Professor, University of San Diego, United States
Ali Parlakturk, Assistant Professor, University of North Carolina Chapel Hill, United States
Jayashankar Swaminathan, Professor, University of North Carolina Chapel Hill, United States

We examine the impact of having strategic customers on the performance of a two-tier supply chain. We find that having strategic customers can increase firm profitability as well as the total supply chain profit.

043-1172 Service Competition and Service Failures with Loss-Averse Consumers

Kefeng Xu, Associate Professor, University of Texas San Antonio, United States
Yan Dong, Assistant Professor, University of Maryland, United States

The combined effects of service levels and service failures significantly impact a firm's strategies and financial performances. We adopt a reference-dependent framework for loss-averse consumers to study firms' strategic decisions and performances in a vertically differentiated market. Our results offer interesting insights to firm competitive strategies.

043-1355 Leveraging Future Cost Reductions: A Dynamic Two-Sided Pricing Model

Xiajun Pan, Assistant Professor, University of Florida, United States
Mei Lin, Assistant Professor, Singapore Management University, Singapore

We consider a monopoly two-sided platform offering quality-improving products sequentially. We study how the monopolist can leverage future cost reductions to position its product line toward the high-end in both the traditional and two-sided pricing models. Results show that optimally pricing products in both periods mitigates intertemporal cannibalization.

043-1385 Effect of government subsidies on the adoption of resource efficient products

Steve Gilbert, Professor, University of Texas Austin, United States
Haoying Sun, Assistant Professor, Texas A&M University College Station, United States

We use the durable goods framework to study how various forms of government subsidy programs shift consumer's adoption patterns of resource efficient products and how this in turn affects consumption of scarce natural resources.

6

Friday, 08:00 AM - 09:30 AM, Salon H — *Track:* Supply Chain Management

Session: Supply Chain Management and Marketing Interface

Chair(s): Tolga Aydinliyim

043-1061 Quality and Pricing Decisions when Consumers Perceive Recycled Content Differently

Monire Jalili, Student, University of Oregon, United States
Tolga Aydinliyim, Assistant Professor, University of Oregon, United States
Nagesh Murthy, Associate Professor, University of Oregon, United States

We consider a monopolist selling ordinary and green product variants to consumers whose differential (dis)utility vary by consumer type, and is a function of the firm's quality decision (i.e., the amount of recycled content.) We discuss how the optimal quality and pricing decisions drive demand and profit.

043-1374 Take Back Costs and Product Durability

Euthemia Stavrulaki, Associate Professor, Bentley University, United States
Michael Pangburn, Associate Professor, University of Oregon, United States

EPR legislation requires firms to take back some fraction of products. Extending a classic two-period durable goods framework, we analyze the impact of take back costs on product durability decisions. We show that optimal durability may decrease if take backs increase, and leasing implies higher durability (and profit) than selling.

043-1393 Modularity, sustainability and new product introduction

John Khawam, Assistant Professor, Naval Postgraduate School, United States
Stefan Spinler, Professor, Whu - Otto Beisheim School of Management, Germany

We analyze a game-theoretic model where the manufacturer has the choice to make a modular or integral product, catering to two market segments. We discuss the impact of tax on the amount of products produced which is considered as a proxy for sustainability.

7

Friday, 08:00 AM - 09:30 AM, Salon I — *Track:* Humanitarian Operations and Crisis Management

Session: Challenges in Humanitarian Supply Chains

Chair(s): Maria Besiou

043-0327 Predicting the Unpredictable - Demand Forecasting in Internatonal Humanitarian Response

Marianne Jahre, Professor, BI Norwegian Business School, Norway
ian Heigh, Director, Everywhere Humanitarian espone and Logistics Services, United Kingdom
Kaustubh Navangul, Student, BI Norwegian Business School, Norway

Prevailing literature claim that humanitarian logistics unlike its commercial counterpart, is characterized by unpredictable demand making it difficult to estimate goods and services needed for disaster relief operations. This paper's purpose is to challenge such claims by suggesting ways to forecast demand and improve the state of humanitarian logistics.

043-0684 Funding Strategies with Donation uncertainty in Humanitarian Operations

Arian Aflaki, Student, Duke University Durham, United States
Alfonso Pedraza-Martinez, Assistant Professor, Indiana University, United States

We model funding strategies for relief and development programs in a multi-donor market with donation uncertainty. Donors decide how much to donate; a humanitarian organization decides between 4 different funding strategies. We provide insights for IHOs to maximize their operational performance.

043-0219 Media Impact on Humanitarian Donations

Jennifer McCormick, MSc Logistics, Recent Graduate, Kuehne Logistics University, United States
Maria Besiou, Assistant Professor, Kuehne Logistics University, Germany

Media play an important role during emergencies, but may also be at fault for causing in-kind donations to arrive at emergency sites. These donations clog the stream of lifesaving materials that need to reach victims. This research explores the use of media volume as a potential indicator for donation volume.

043-0841 Job Satisfaction Drivers in Humanitarian Organizations: an Empirical Investigation

Andrea Masini, Associate Professor, Hec Paris, France
Luk Van Wassenhove, Professor, INSEAD, France
Ann Allen, Student, INSEAD, France

This paper examines gender issues and job satisfaction drivers in humanitarian organizations. The analysis of a sample of more than 200 professionals working in humanitarian supply chains indicates differences in access to resources between male and female employees and that gender indirectly affects satisfaction through its effect on resource access.

9

Friday, 08:00 AM - 09:30 AM, Suites I — *Track:* Service Operations

Session: Service Analytics 1

Chair(s): Andrea Vinelli

043-0393 Managerial implications of service recovery strategies

Enrico Contiero, Student, Universita Di Padova, Italy
Andrea Vinelli, Professor, Universita Di Padova, Italy

The research analyzes managerial and theoretical implications of service recovery in financial institutions. Based on case study evidence the paper points out insights and findings on how service recovery strategies are operationally implemented in two leader banks in Europe, drawing managerial indications for organizational and performance management decisions.

043-0008 Scheduling two Consecutive Days off with Priorities

Ceyhun Ozgur, Professor, INFORMS, United States

Scheduling two consecutive days off has become important in the family lives of employees.This topic is well researched. However in this research project, we not only schedule two consecutive days off for each employee but based on seniority also provide the employees with preferred days off for two consecutive days

043-0912 Hub Location in the Brazilian Air Transportation Network

Ricardo Camargo, Professor, Federal University of Minas Gerais, Brazil
Samuel Conceicao, Professor, Federal University of Minas Gerais, Brazil
Gilberto Miranda Junior, Professor, Federal University of Minas Gerais, Brazil
Luiz PINTO, Professor, Federal University of Minas Gerais, Brazil
Fatima Machado, Student, Federal University of Minas Gerais, Brazil

The Brazilian air transportation network has gone through several operational breakdowns. In order to provide the necessary operational efficiency to this system, a mixed integer non-linear programming formulation is proposed to redesign the current network and optimizing the use of the installed capacity and balancing the flows through the network.

10

Friday, 08:00 AM - 09:30 AM, Suites II — *Track:* Supply Chain Contracting

Session: Advances in Supply Chain Contracting

Chair(s): Tsan-Ming Choi

043-1134 Coordinating Supply Chains with Multiple Heterogeneous Risk-averse Retailers Using Sales-rebate Contract

Chiu Chun-Hung, Associate Professor, Sun Yat-Sen University, China
Tsan-Ming Choi, Associate Professor, The Hong Kong Polytechnic University, Hong Kong
Xun Li, Assistant Professor, The Hong Kong Polytechnic University, Hong Kong
Gang Hao, Associate Professor, City University of Hong Kong, Hong Kong

We consider the channel coordination with a risk-neutral manufacturer and multiple heterogeneously risk-averse retailers. The target sales rebate (TSR) contract and related hybrid contracts all fail to achieve coordination. We develop a menu of TSR contracts with new contract terms: the risk-level indicator and the separation indicator which achieves coordination.

043-0772 Supply Contracting with Two Risk Averse Retailers: A Behavioral Study

Tsan-Ming Choi, Associate Professor, The Hong Kong Polytechnic University, Hong Kong
Pui-Sze Chow, Student, The Hong Kong Polytechnic University, Hong Kong
Bin Shen, Student, Hong Kong Polytechnic Univ, China

This paper studies the use of a supply contract in a supply chain with one supplier and two heterogeneous retailers. By running laboratory experiments, we examine the subjects' behaviors in their contract offering decisions. We find some interesting behavioursand derive some results which help enhance the supplychain's efficiency.

043-1261 Two-stage Apparel Supply Chain Joint Contract with Buy Back and Flexible Pricing

Qi Xu, Professor, Donghua University, China
WenJie Wang, Associate Professor, Donghua University, China

Considering the changing price characteristics of apparel supply chain, a joint contract which combines buy back and flexible pricing contracts is modeled in order to perfectly coordinate supply chain in this paper. The formulation results showed that the joint contract can perfectly coordinate a two-stage apparel supply chain.

043-1649 Volume Incentive Through Performance-Based Allocation of Business

Liping Liang, Assistant Professor, Lingnan Univ, China
Derek Atkins, Professor, University of British Columbia, Canada

A common practice for inducing high-level supplier performance is tosource from multiple suppliers and strategically allocate business basedon their past performance. To investigate the design of suchperformance-based incentive schemes, we consider a buyer's dual sourcingproblem in a dynamic principal-agent setting and draw a number ofinsights.

11

Friday, 08:00 AM - 09:30 AM, Suites III — *Track:* Empirical Research in Operations Management

Session: Empirical Studies in Emerging Economies

Chair(s): Danielle Pozzo

043-0025 Factors of competitiveness in service export: an empirical study of small and middle-sized companies

Danielle Pozzo, Professor, FADERGS - Faculdade de Desenvolvimento do Rio Grande do Sul, Brazil
Gabriela Paschoal, Student, FADERGS - Faculdade de Desenvolvimento do Rio Grande do Sul, Brazil
Matheus Neumann, Student, FADERGS - Faculdade de Desenvolvimento do Rio Grande do Sul, Brazil
Monica Paaz, Student, FADERGS - Faculdade de Desenvolvimento do Rio Grande do Sul, Brazil
Renan Ropke, Student, FADERGS - Faculdade de Desenvolvimento do Rio Grande do Sul, Brazil

The study aims to support Brazilian companies establishing competitive advantages in service exports by integrating academic research with local companies' demands. The project primarily intends to map factors of competitiveness and place Brazil in comparison with the top countries in service trade and subsequently combine theoretical propositions with empirical cases.

043-1517 Core competences in import-export companies: a multi-case study in Brazil

Danielle Pozzo, Professor, Cesuca - Complexo de Ensino Superior de Cachoeirinha, Brazil

This study intends to identify core competences in international business for Brazilian-based companies. The first stage considers companies from South Brazil. Later, a survey will be applied to individuals all over the country. It's expected to provide inputs for companies and universities to develop more focused and prepared work teams.

043-0999 How to save the occidental manufacturing sector

Claude Machline, Emeritus Professor, Fundacao Getulio Vargas, Brazil
Orlando Cattini Junior, Associate Professor, Fundacao Getulio Vargas, Brazil

Many indicators point at serious crises weakening the manufacturing segment in most occidental countries. Focusing the Brazilian industry, this paper analyses the various decline indicators, debates the origin, causes and development of the crisis and presents the numerous solutions given in past crises to increase the manufacture productivity and competitiveness.

043-0876 Teaching of production management: a theoretical-empirical contribution

Sergio Adelar Brun, Student, UFGD/UFSC, Brazil
Rolf Erdmann, Professor, Universidade Federal De Santa Catarina, Brazil
Mayara Teodoro de Oliveira, Student, Universidade Federal De Santa Catarina, Brazil
Airton Batistela, Associate Professor, UNIOESTE, Brazil
Antonio Vaz lopes, Student, UFGD/UNINOVE, Brazil

The teaching and learning can have specific approaches in the classroom. This study, research-action, considered learning to develop a proposal that makes teaching production management more effective. The class must consider the student, resources and content. The student should realize himself involved and be the center of action.

12

Friday, 08:00 AM - 09:30 AM, Suites IV — *Track:* Healthcare Operations Management

Session: Operating Room Management

Chair(s): Brian Rothman

043-0534 Flexible Labor Management Strategies in Perioperative Services

David Wyatt, Administrative Director Perioperative Services, Vanderbilt University Medical Center, United States

Perioperative services is a dynamic patient care environment that requires extensive planning for staffing resources, especially in the face of varying demand. This presentation reviews flexible labor management strategies which were a result of a project on staffing effectiveness and implemented to respond to the changing healthcare economic climate.

043-0674 Strategic Block Scheduling Optimization in Large Academic Medical Centers

Retsef Levi, Associate Professor, Massachusetts Institute of Technology, United States
Ana Cecilia Zenteno, Student, Massachusetts Institute of Technology, United States
Timothy Carnes, Student, Link Analytics, United States
Peter Dunn, Executive Medical Director, Massachusetts General Hospital, United States
Bethany Daily, Administrative Director, Massachusetts General Hospital, United States
Devon Price, Student, Massachusetts Institute of Technology, United States

We describe a large-scale implementation of new surgery scheduling strategies at the Massachusetts General Hospital. The strategies were driven by a range of simulation optimization models based on integer techniques. The goals were to smooth the surgical census on the surgical floors and to increase timely access to non-elective patients.

043-1363 Influence of Volume and Service-Mix Variability on Operating Rooms Supply Costs

Brian Dakin, Administrative Director, Vanderbilt University Medical Center, United States
Vikram Tiwari, Assistant Professor, Vanderbilt University Medical Center, United States

Sterile instrument processing and case cart preparation are expensive components of operating rooms supply costs, yet their full impact is not well understood. Using data analytics and simulation this research evaluates how variability in daily case volume and service-mix decreases supply chain efficiency, thus reducing the perceived operating margin.

043-0665 Key Marker Identification for Real-Time Updating of Surgical Case End Time

Vikram Tiwari, Assistant Professor, Vanderbilt University Medical Center, United States
Brian Rothman, Assistant Professor, Vanderbilt University Medical Center, United States

Using historical case duration, probabilistic time-estimates of key markers indicative of surgery's progress are developed to identify cases expected to extend beyond their scheduled duration. Practical and implementable rules for adjusting the day's schedule in real-time to avoid case delays and overtime, and increase staff and patient satisfaction are analyzed.

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Friday, 08:00 AM - 09:30 AM, Suites V — *Track:* Manufacturing Operations

Session: Maintenance Models in Manufacturing

Chair(s): Shuva Ghosh

043-1165 A semi-Markov Heuristic for Total Productive Maintenance

Shuva Ghosh, Student, Missouri University of Science And Technology, United States
Abhijit Gosavi, Assistant Professor, Missouri University of Science And Technology, United States
Susan Murray, Professor, Missouri University of Science And Technology, United States

Total productive maintenance (TPM) plays an important role in minimizing costs in production systems. Maintenance scheduling is a critical step in successfully implementing TPM. We use the classical semi-Markov decision process model for developing the schedule, and propose a heuristic for solution purposes that can be implemented in spreadsheet software.

043-0148 Maintenance Outsourcing Contracts for a System with Backup Machines

Hakan Tarakci, Assistant Professor, University of North Texas, United States
Subramaniam Ponnaiyan, Student, University of North Texas, United States
Shailesh Kulkarni, Associate Professor, University of North Texas, United States

Consider a system with multiple components. A contractor performs maintenance-related activities: Minimal repair whenever a component breaks down and preventive maintenance for the whole system at pre-determined times. Revenue is earned during up-times. A backup machine allows production to continue during minimal repairs. Coordinated and uncoordinated system profits are compared.

16 Friday, 08:00 AM - 09:30 AM, Matchless *Track:* Inventory Management
Session: Teaching Inventory Management: Exercises and Cases to Enliven Inventory Management Education
Chair(s): David Robb

043-0351 The Ordering Challenge
Brad Meyer, Associate Professor, Drake University, United States
Debra Bishop, Associate Professor, Drake University, United States

Demonstration of a free online Flash game that introduces holding cost, ordering cost, backlog cost, saw tooth curve, ABC categorization, lead-time, optimal order quantity and reorder point. The class assignment and discussion briefing are available from the authors. Assign this as homework and experience lively discussion the next class period.

043-1365 Using Cases to Enhance Student Interest in Inventory Management Issues
Graeme Rankine, Associate Professor, Thunderbird School of Global Management, United States

This paper reports on the use of cases on benchmarking a company's inventory management against competitors. The challenge in comparing day's inventory is that companies use different accounting methods (AC, FIFO, LIFO). The instructor can also discuss potential conflict between lean management and LIFO tax-induced inventory acquisition.

043-1119 Inventory Optimization in the presence of financial constraints
Brinda Modi Palli, Student, Indian Institute of Technology Madras, India
Rahul Marathe, Associate Professor, Indian Institute of Technology Madras, India

Trade credit is a popular practice to finance inventory. We find optimal order quantity for the retailer to meet a given service level when the credit payment has deadline under stochastic demand scenario. Resultant convex optimization problem is solved analytically. Demand volatility seems to have highest impact on order quantity.

043-1652 Using an online beergame to teach inventory control
Sam Wood, President, Responsive Learning Technologies, United States

A new online implementation of MIT's well known beergame is shown that includes tracking unfilled orders and historic demand. Those new features facilitate an order-up-to policy that each student player uses to dramatically reduce the bullwhip effect, relative to a benchmark game that does not use inventory control.

17 Friday, 08:00 AM - 09:30 AM, Gold Coin *Track:* Supply Chain Risk Management
Session: Supply Chain Risk 1
Chair(s): Xin Xu

043-0156 Multi-player project planning and scheduling under risk sharing
Xin Xu, Student, Rutgers University, United States
Yao Zhao, Associate Professor, Rutgers University, United States

We consider a product development project where the design work of subsystems is outsourced to suppliers. We build a mathematical model to predict each firm's behavior under risk sharing partnership. We show each firm tends to delay its task relative to what is the best for the entire project.

043-0256 Managing Disruptions in Decentralized Supply Chains with Endogenous Supply Process Reliability
Sammi Tang, Assistant Professor, University of Miami, United States
Haresh Gurnani, Professor, University of Miami, United States
Diwakar Gupta, Professor, University of Minnesota, United States

We consider decentralized supply chains where supplier's reliability is affected by incentives provided by buyer. The incentives can be direct (investment subsidy) or indirect (inflated order quantity). We analyze buyer's and supplier's optimal decisions and compare the subsidy approach to the dual sourcing approach in managing disruptions.

043-0688 Dynamic Risk Management in Intermodal Freight Transportation
Ting Luo, Student, University of Texas Dallas, United States
Long Gao, Assistant Professor, University of California Riverside, United States

We study a dynamic container leasing and load acceptance problem where both demand and capacity supply are random. We characterize the structure of the optimal policy and investigate the impact of system parameters. We further compare the performances of several widely used policies with that of the optimal policy.

043-1277 Trade credit and reverse factoring
K. Van der Vliet, Student, Eindhoven University of Technology, Netherlands
Matthew Reindorp, Assistant Professor, Eindhoven University of Technology, Netherlands
Jan Fransoo, Professor, Eindhoven University of Technology, Netherlands

We use simulation to investigate the implications of trade credit when inventory is financed by traditional short-term borrowing. Building on this base case, we consider a cooperative supply chain financing concept, reverse factoring, and show how it can stabilize the financial demands of the inventory operations.

19 Friday, 08:00 AM - 09:30 AM, Molly Brown *Track:* Marketing and Operations Management Interface
Session: Marketing Strategies and Fulfillment Operations
Chair(s): Xuying Zhao

043-0267 Advance Selling without Showing the Price?
Tingliang Huang, Assistant Professor, Univ of College London, United Kingdom
Ying-Ju Chen, Assistant Professor, UC Berkeley, United States

We investigate the optimal advance selling strategy when consumers use experience-based anecdotal reasoning to anticipate the firm's decisions. We show that the firm may strategically randomize the advance selling price even in the absence of demand and valuation uncertainties, but such a rationale is alleviated when the firm is endowed

043-0275 The Online Retailer Fulfillment Service: Why Help Your In-store Competitor?

Wenjing Shen, Assistant Professor, Drexel University, United States
Gangshu Cai, Associate Professor, Santa Clara University, United States

Online fulfillment program is a service offered to small retailers by large retailers such as Amazon, where large retailers handle shipping and service for the small retailer. We analyze a game between two retailers and find out the conditions under which fulfillment program is beneficial for the large retailer.

043-1530 Modeling Rank Dependent Search

Chris Anderson, Associate Professor, Cornell University, United States
Ming Cheng, Student, Cornell University, United States

Using disaggregated data from a Chinese search engine we jointly model ad rank and performance for hospitality related keyword searches. As a result of our modeling framework we can better determine the optimal keyword bidding strategy for an advertiser given the search engine's control over ad rank.

043-1101 Optimal Pricing of Two Successive-Generation Products with Trade-in Options under Uncertainty

Rui Yin, Assistant Professor, Arizona State University Tempe, United States
Hongmin Li, Assistant Professor, Arizona State University Tempe, United States
Christopher Tang, Professor, University of California Los Angeles, United States

We consider a firm who sells two successive generations of a product to forward-looking customers. A trade-in program is offered which allows customers to trade-in the old product and buy the new product at a discounted price. We determine the optimal prices and examine the effectiveness of the trade-in program.

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Friday, 08:00 AM - 09:30 AM, Spruce — *Track:* Purchasing and Supply Management
Session: Empirical Studies in Supply Management
Chair(s): Markham Frohlich

043-1254 Buyer-Supplier-Relationships between Established Firms and New Ventures

Boris Zaremba, Student, Swiss Federal Institute of Technology Zurich, Switzerland
Christoph Bode, Assistant Professor, Swiss Federal Institute of Technology Zurich, Switzerland
Stephan Wagner, Professor, Swiss Federal Institute of Technology Zurich, Switzerland

Drawing on literature about competitive priorities in purchasing and supplier integration we analyze relationships between established firms as buyers and new ventures as suppliers. The analysis is based on large-scale cross-sectional survey data. The findings contribute to an emerging stream of literature at the intersection of operations management and entrepreneurship.

043-1002 Purchase-to-Pay (P2P) Sourcing and Finance Strategies in the Supply Chain

Markham Frohlich, Associate Professor, Indiana University Indianapolis, United States

This study investigated the purchasing-to-payment (P2P) cycle in supply chains. Data (n = 390) were collected from manufacturing and service organizations in Europe and the United States. Organizations with the highest degrees of P2P automation had the best performance in both services and manufacturing.

043-1360 Cooperative Strategies: A Critical Review of the Empirical Research

Amydee Fawcett, Student, University of Arkansas - Fayetteville, United States
Stanley Fawcett, Professor, Weber State University, United States

The purpose of the paper is to review the theoretical foundations, measurement and conceptualization of the research covered in the supply chain integration and collaboration literature between 2000 and 2012 and to develop an orienting conceptual framework from the literature. Forty three articles were reviewed from fifteen scholastic journals.

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Friday, 08:00 AM - 09:30 AM, Nat Hill — *Track:* Retail Operations Management
Session: Emerging Topics in Retail Operations Theory and Practice
Chair(s): Felipe Caro

043-0671 Multi-Product Markdown Optimization

Kiran Panchamgam, Senior Scientist, Oracle, United States
Andrew Vakhutinsky, Principal Scientist, Revionics, United States
Anahita Hassanzadeh, , ,

Retailers with perishable goods are faced with markdown optimization problem, wherein the retailer has to decide on the timing and pricing of markdowns for multiple products with substitution. We propose a Mixed Integer Program that is computationally efficient and can handle a nonlinear demand function with complex set of constraints.

043-0280 Who should keep inventory when customers are lead-time conscious?a supplier, retailers, or both?

Hisashi Kurata, Associate Professor, University of Tsukuba, Japan

If item availability at a store influences a lead-time conscious customer, an inventory pooling strategy may lose a certain portion of sales. This paper aims at developing an analytical model to examine the best stocking decision for the supply chain of a supplier and multiple retailers.

043-1266 Inventory replenishment in an online retail environment

Jason Acimovic, Assistant Professor, Penn State University State College, United States
Stephen Graves, Professor, Massachusetts Institute of Technology, United States

In an online retailing network, if a customer's primary warehouse facility stocks out, another facility may serve that customer at an increased cost. Myopic replenishment policies may lead to dynamics resulting in high outbound shipping costs. We find evidence of this in industry data and propose a forward-looking policy.

043-0061 The Assortment Packing Problem: Multiperiod Assortment Planning for Short-Lived Products

Felipe Caro, Assistant Professor, University of California Los Angeles, United States
Victor Martínez-de-Albéniz, Associate Professor, I E S E, Spain
Paat Rusmevichientong, Associate Professor, University of Southern California, United States

Retailers introduce new items to refresh product lines and maintain their market share. We study how a firm must decide, in advance, the release date of each product in a given collection over a selling season. Our formulation models the trade-offs among profit margins, preference weights, and limited life-cycle.

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Friday, 08:00 AM - 09:30 AM, Pomeroy *Track:* Operations Management and Economic Models
Session: Social Issues
Chair(s): Rachel Chen

043-1128 Valuing the Corporate Social Responsibility on Consumer Response

Wei Chen, Student, University of Pittsburg, United States
Jennifer Shang, Associate Professor, University of Pittsburg, United States

We study the impact of Corporate Social Responsibility (CSR) programs on customer responses. CSR should be engaged as a corporate's strategy that creates competitive edge and values for businesses. In this research, we explore whether CSR can create business values when engaged with consumers, and how to measure such values.

043-1471 Reflections on Sustainability, Globalization, Culture and Work

Joao Santos, Student, Universidade Adventista De Sao Paulo, Brazil
Getulio Akabane, Student, Universidade Anhanguera, Brazil
Eduardo Santos, Student, Universidade Nove De Julho, Brazil

This paper discusses the development process and the influence of globalization on culture and behavior of society seen on reflexes in the consumer market and how they participate or interfere in sustainability. A globalization is a process of interaction between people in general originated in trade, work and political relations.

043-0411 Making quality decisions in tough economic times

Rachel Chen, Associate Professor, University of California Davis, United States
Leon Chu, Assistant Professor, University of Southern California, United States
Lian Qi, Assistant Professor, Rutgers University, United States

Negative economic shock often leads consumers to cut their spending and opt for lower quality items. This paper examines firms' quality decisions in tough economic times.

043-0118 Beyond Price Mechanisms: How much can service help manage the competition from gray markets?

Foad Iravani, Assistant Professor, University of Washington, United States
Sriram Dasu, Associate Professor, University of Southern California, United States
Reza Ahmadi, Professor, University of California Los Angeles, United States

Companies in various industries face the resale of their products in unauthorized gray markets. We study the value of providing service in coping with the competition from gray markets. We examine the service policy for gray market customers and analyze the impact of delegating the service decision to a retailer.

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Friday, 08:00 AM - 09:30 AM, Salon E *Track:* Healthcare Operations Management
Session: Outpatient Healthcare Operations
Chair(s): Craig Froehle

043-0320 Impact of Waiting Time on Patient Flow: An Econometric Analysis of Outpatient Clinics

Diwas Kc, Assistant Professor, Emory University, United States
Nikolay Osadchiy, Assistant Professor, Emory University, United States

We examine patient throughput at an outpatient clinic. We develop a non-parametric model of patient choice and find that capacity affects throughput in two ways - by reducing the likelihood that the patient books an appointment, and by reducing the likelihood that a scheduled patient shows up for an appointment.

043-0350 A Unifying Framework of Performance Metrics for Outpatient Healthcare Operations

Elham Torabi, Student, University of Cincinnati, United States
Tugba Cayirli, Assistant Professor, Ozyegin University, Turkey
Craig Froehle, Associate Professor, University of Cincinnati, United States
Ken Klassen, Professor, Brock University, Canada
Michael Magazine, Professor, University of Cincinnati, United States
Denise White, Consultant (Capacity Management) - Quality & Transformation Analytics, Cincinnati Children'S Hospital Medical Center, United States

Appropriately defined performance metrics are crucial for managing and improving the operations of an outpatient clinic. By reviewing the OM and healthcare literature, we developed a comprehensive framework of performance metrics for outpatient operations. We demonstrate how the framework comprises existing metrics and offer prescriptions for HOM researchers and practitioners.

043-0365 Using Flexibility to Balance Responsiveness and Efficiency in the Emergency Department

Lauren Laker, Student, University of Cincinnati, United States
Craig Froehle, Associate Professor, University of Cincinnati, United States
Christopher Lindsell, Professor, University of Cincinnati, United States
Michael Ward, Assistant Professor, University of Cincinnati, United States

We model the flexible partitioning of capacity in the Emergency Department between high- and low-acuity service areas, which we call a Flex-Track policy. Our findings show that implementing Flex-Track could provide substantial operational benefits for overall ED performance including lower wait times and more balanced bed utilization.

043-0617 How electronic health record data errors affect operational performance in an emergency department

Michael Ward, Assistant Professor, University of Cincinnati, United States
Craig Froehle, Associate Professor, University of Cincinnati, United States

The implementation of electronic health records in clinical settings can introduce multiple electronic errors into operational data systems. We use discrete event simulation to explore how the types and magnitudes of errors affect key performance indicators using data from a suburban emergency department.

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Friday, 08:00 AM - 09:30 AM, Salon F *Track:* Sustainable Operations
Session: Operational Challenges in Electric Vehicles - Electric Grid Integration
Chair(s): Ni Fang

043-0001 Optimal Strategies for Grid Stabilisation through Electric Vehicles with V2G Technology

Ni Fang, Student, Hec Paris, France
Andrea Masini, Associate Professor, Hec Paris, France

One appealing option to accelerate market diffusion of Electric Vehicles (EVs) is the use of EVs with Vehicle-to-Grid (V2G) technology. However, the economic viability of such scheme depends on the strategic interactions among the agents involved. In this paper we use a game theoretical approach to model these interactions.

043-0206 Analyzing EV Adoption in a Fleet Environment

Saravanan Kuppusamy, Student, University of Cincinnati, United States
Michael Magazine, Professor, University of Cincinnati, United States
Uday Rao, Associate Professor, University of Cincinnati, United States

For an environment consisting of a Taxi Cab company (TC) and an Infrastructure Service Provider (SP) we study factors that influence EV adoption such as the average miles driven by vehicles, the associated uncertainty in miles driven, the diversity in miles driven by different vehicles, and varied cost parameters.

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Friday, 10:00 AM - 11:30 AM, Salon A — *Track:* Behavioral Issues in Operations Management

Session: Newsvendor, EOQ and Supply Chain Performance

Chair(s): Dash Wu

043-1353 Consumer Behavior with Social Interaction and Its Implication to Newsvendor Problem

Dash Wu, Senior Lecturer, University of Toronto, Canada

We investigate the newsvendor problem in presence of consumer behavior with social interactions extending the traditional newsvendor model.

043-1334 Inventory Decisions in Single Echelons: Isolating Backordering Effects on Ordering Behavior

Jaime Castaneda, Student, University of Lugano, Switzerland
Paulo Goncalves, Associate Professor, University of Lugano, Switzerland

Behavioral work studying ordering decisions in single echelons has focused mainly on Newsvendor settings in which excess demand is lost. Backorders have been largely ignored. We propose an experimental study to isolate backordering effects on ordering behaviors, aiming at advancing our understanding of the causes of biased ordering behaviors.

043-0722 On the Supply Chain Performance Anomaly: Does Equity Matter?

Fei Qin, Student, University of Cincinnati, United States
Michael Fry, Associate Professor, University of Cincinnati, United States
Feng Mai, Student, University of Cincinnati, United States
Amitabh Raturi, Professor, University of Cincinnati, United States

We explore the issue of why experimental results differ from the analytic findings in the decentralized supply chain study. Specifically, we examine two possible explanations: biases related to individual bounded rationality and concerns related to equity. We further investigate how such an anomaly will shift under cost information asymmetry.

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Friday, 10:00 AM - 11:30 AM, Salon B — *Track:* Healthcare Operations Management

Session: Managing Dynamic Healthcare Environments

Chair(s): Bjorn Berg

043-0107 Admission Policies in a Neurological Hospital Ward

Vedat Verter, Professor, Mcgill University, Canada
Saied Samiedaluie, Student, Mcgill University, Canada
Dan Zhang, Assistant Professor, University of Colorado Boulder, United States
Beste Kucukyazici, Assistant Professor, Mcgill University, Canada

We study patient admission policies in a neurological hospital ward, where there are multiple patient types. The patients need to wait until a hospital bed is assigned to them. The problem is formulated as an average cost dynamic program. An approximation scheme to solve the dynamic programming will be presented.

043-0418 Improving and Sustaining On-Time Case Starts at Operating Rooms

Vikram Tiwari, Assistant Professor, Vanderbilt University Medical Center, United States
Jesse Ehrenfeld, Associate Professor, Vanderbilt University Medical Center, United States
Warren Sandberg, Professor, Vanderbilt University Medical Center, United States

Starting first cases of the day on time assesses operating room management effectiveness by testing synchrony between the different teams responsible for patient-flow processes. Using empirical methods this study examines how a cross-functional team achieved and sustained improvements in the control (on time, tighter distribution) of first case starts.

043-0427 Patients without Patience: A Priority Queuing Simulation Model of the Intensive Care Unit

Elisa Long, Assistant Professor, Yale University, United States
Kusum Mathews, Student, Yale University, United States

ICU patients often endure excessive waits for bed assignment and prolonged transfer times following care. Using an econometric model, we estimate the association between patient census levels and service/transfer times. We develop a four-class priority queuing model with multiple-server types and state-dependent service times, which we simulate using empirical data.

043-1150 Dynamic Prioritization for Emergency Physicians

Yann Ferrand, Assistant Professor, Clemson University, United States
Michael Magazine, Professor, University of Cincinnati, United States
Uday Rao, Associate Professor, University of Cincinnati, United States
Todd Glass, Division Chief, Emergency Medicine, Nemours Children's Hospital, United States

To improve patient flow in an emergency department, we augment current patient prioritization practices with a consideration of actual time spent in the system. We use discrete event simulation to measure the performance of this approach in terms of patient wait time and length of stay.

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Friday, 10:00 AM - 11:30 AM, Salon C — *Track:* Sustainable Operations

Session: Strategies to improve environmental performance

Chair(s): Vishal Agrawal

043-0085 Improving Supplier Environmental Performance

Ozgen Karaer, Assistant Professor, Middle East Technical University, Turkey
John Khawam, Assistant Professor, Naval Postgraduate School, United States
Tim Kraft, Assistant Professor, University of Virginia, United States

We examine how a firm can induce higher environmental quality from a supplier under varying cost and market sensitivity conditions. We consider three methods: auditing, supplier competition, and collaboration. Our research is based on an NGO's efforts to develop a tool for industries to safely share chemical information.

043-0279 Are Reuse Targets Good for the Environment?

Gokce Esenduran, Assistant Professor, Ohio State University, United States
Eda Kemahlioglu-Ziya, Assistant Professor, University of North Carolina Chapel Hill, United States
Jayashankar Swaminathan, Professor, University of North Carolina Chapel Hill, United States

We consider a manufacturer that sells new and remanufactured products under product take-back legislation. We compare the environmental impact of collection targets and additional reuse targets. We find that collection targets alone generally reduce environmental impact. However, this is not the case for reuse targets unless they are sufficiently high.

043-0549 Extracting Maximum Value from Consumer Returns

Cerag Pince, Assistant Professor, Kuehne Logistics University, Germany
Mark Ferguson, Professor, University of South Carolina, United States
Beril Toktay, Professor, Georgia Institute of Technology, United States

We consider a consumer electronics OEM selling a new product, receiving consumer returns (requiring mild refurbishing) and facing future warranty demand. After refurbishing, the returns can be used to meet warranty demand or sold as refurbished product. We analyze the OEM's pricing and allocation problem under warranty demand uncertainty.

043-0585 To Sell and to Provide? The Implications of the Auto Manufacturer's Involvement in the Car Sharing Business

Ioannis Bellos, Assistant Professor, George Mason University, United States
Mark Ferguson, Professor, University of South Carolina, United States
Beril Toktay, Professor, Georgia Institute of Technology, United States

We study the auto manufacturer's choice regarding whether to provide mobility service (e.g., car sharing) in conjunction with the traditional sales channel. Weexplicitly model the consumer's choice of transportation mode as well as vehicle usage decisions and we characterize the environmental and economic implications of the auto manufacturer's strategy.

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Friday, 10:00 AM - 11:30 AM, Salon D *Track:* Service Operations
Session: International Panel on Global Perspectives in the Role of Services
Chair(s): Veronica Martinez Andy Neely

043-1668 International Panel on Global Perspectives in the Role of Services

Morgan Swink, Professor, Michigan State University, United States
Chris Voss, Emeritus Professor, University of Warwick, United Kingdom
Marcia Silva, Professor, Universidade São Paulo, Brazil
Shuo-Yan Chou, Professor, National Taiwan University, Taiwan, Republic of China
Andy Neely, Professor, Cambridge University, United Kingdom
Veronica Martinez, Professor, Cranfield University, United Kingdom

This panel explores and debates on the perception and roles of services from four macro-economic regions around the globe, two emergent and two mature economies. Aiming to bring academic experts in 'Service Operations' from four geographical regions, the panel opens the debate with some meta-management questions for the panelist.

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Friday, 10:00 AM - 11:30 AM, Salon G *Track:* Supply Chain Management
Session: Case Study and Report
Chair(s): Washington Luiz Soares

043-0997 Sustainability Reporting by Firms in Global Supply Chains

Henry Aigbedo, Associate Professor, Oakland University, United States

Sustainability continues to receive attention from executives of major companies and supply chains around the world. In this presentation, we will be discussing the reporting of sustainability efforts. Furthermore, we will highlight gaps that exist and examine ways to address some of them.

043-1240 The CPFR strategy of a cooperative transportation system - The case study of intermodality for Ecoefficiency

Jessica Elise Soares, Student, UNISANTOS, Brazil
Washington Luiz Soares, Student, UNISANTA - SANTA CECÍLIA UNIVERSITY, Brazil
Jonathan Soares, Student, FAESO - Faculdade Estácio de Sá de Ourinhos, Brazil

The control system suppliers named CPFR (Collaborative Planning, Forecasting and Replenishment) gathers intelligence from several companies, planning and fulfillment of customer demand. The aim of the paper is to show the main organizational functions of supply, production and demand, at three different levels: design, planning and operations.

043-0203 Supply Chain Complexity - A view from different perspectives

Markus Gerschberger, Assistant Professor, LOGISTIKUM Steyr - the logistics competence of the FH Upper Austria, Austria

Purpose of this paper is to analyse the development of supply chain complexity from different perspectives (market, process, product, organisation) and to highlight possible attempts to reduce/manage it. Analysis is based on a longitudinal case study in the machine building Austrian industry from 2008 (=start economic crisis) up to now.

043-0070 Green Supply Chain Management practices in the purchasing of food products' packaging

Rosangela Vanalle, Professor, Universidade Nove De Julho, Brazil
Marcos Fascina, Student, Universidade Nove De Julho, Brazil

The article aims to identify environmental practices used in the supply chain management of food packaging in Brazil. Through questionnaires in three companies we were able to identify that the reuse of packaging is the main environmental management practice required from suppliers of the product packaging.

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Friday, 10:00 AM - 11:30 AM, Salon I — *Track:* Humanitarian Operations and Crisis Management

Session: Performance Measurement in Humanitarian Logistics II

Chair(s): Hella Abidi

043-0089 A performance measurement system for the evaluation of humanitarian supply chain

Giulia Santarelli, Student, University of Bologna, Italy
Hella Abidi, Student, FOM ild at FOM University of Applied Sciences, Germany
Alberto Regattieri, Professor, University of Bologna, Italy
Matthias Klumpp, Professor, FOM ild at FOM University of Applied Sciences, Germany

The authors develop and implement (e.g. with UN WFP, MSF, COOPI) a holistic and applicable performance measurement system to measure the performance of humanitarian supply chains during both disaster situations and development. The system could help no-profit organizations to make better decisions, improve their performance and provide accountability.

043-0865 Performance Supply Chain Measurement for Better Collective Results

Kirstin Scholten, Assistant Professor, University of Groningen, Netherlands
Pamela Sharkey Scott, Senior Lecturer, Dublin Institute of Technology, Ireland
Sander De Leeuw, Associate Professor, Vrije Universiteit Amsterdam, Netherlands

Coordination is vital in disaster management. In 2005 the clusters approach was introduced to improve the efficiency and effectiveness of aid delivery. The application of supply chain performance measurement to such collaborative mechanisms offers great potential to contribute to better collective results to help people in need.

043-0117 Measuring success in humanitarian supply chains

Hella Abidi, Senior Lecturer, FOM University, Germany
Matthias Klumpp, Professor, FOM University, Germany
Sander De Leeuw, Associate Professor, Vrije Universiteit Amsterdam, Netherlands

What succes entails in a humanitarian supply chain has not yet been clarified satisfactorily. Depending on the specific actor or stakeholder, definitions of success may be different. This research defines success factors and translates them into concrete indocators and measures supported by a case study in a Dutch humanitarian organisation.

043-0101 A Customer Perspective on Performance Measurement in Humanitarian Supply Chains

Sarah Schiffling, Student, Heriot-Watt University, United Kingdom

The increasing importance of services in SCM leads to a stronger focus on the customer perspective. Donors and beneficiaries are two distinct customer groups of humanitarian supply chains. This paper will analyze how this impacts performance measurement, for example in the commonly used balanced scorecard which includes a customer perspective.

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Friday, 10:00 AM - 11:30 AM, Salon J — *Track:* Humanitarian Operations and Crisis Management

Session: Practitioner and Commercial Panel on Issues in HCOM

Chair(s): Nezih Altay

043-1665 Practitioner and Commercial Panel on Issues in HCOM

Jock Menzies, Unreported, TermCorp, United States

Research in HOCM has gained popularity over the past five years. However, are we asking the right questions? This panel is an opportunity for HOCM researchers to hear about the real problems practitioners and their commercial partners have on the ground and during long-term planning.

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Friday, 10:00 AM - 11:30 AM, Suites I — *Track:* Healthcare Operations Management

Session: Kidney Diagnosis and Organ Donation

Chair(s): Mazhar Arikan

043-0559 Utility of an Algorithm to Screen for Surgical Process Complications

Paul St. Jacques, Associate Professor, Vanderbilt University, United States
Jesse Ehrenfeld, Associate Professor, Vanderbilt University, United States
Aneesh Goel, Student, Vanderbilt University, United States

Perioperative kidney injury is often difficult to detect. We created a computerized algorithm to screen for postoperative renal failure. Positive screens may then subsequently be examined for potential process defects in order to improve outcomes for future patients. This model has applications beyond the surgical suite.

043-0968 Efficiency Analysis of Dialysis Facilities: Identification of Best Practices

David Dreyfus, Student, Michigan State University, United States
Srinivas Talluri, Professor, Michigan State University, United States
Anand Nair, Professor, Michigan State University, United States

We analyze the efficiency of dialysis departments throughout the US. Non-parametric testing of the data demonstrated that younger, non-profit departments that belong to chain organizations and have higher overall quality standards with limited offerings are the most efficient. Theoretical and practical implications will be discussed.

043-0870 Lean thinking and the organ donation process

Aline Pestana, Student, Universidade Federal De Santa Catarina, Brazil
Rolf Erdmann, Professor, Universidade Federal De Santa Catarina, Brazil

Alacoque Erdmann, Associate Professor, Universidade Federal De Santa Catarina, Brazil
Elza Silva, Associate Professor, Universidade Federal do Maranhão, Brazil

The Lean thinking is one of the most recent achievements of the management for the health sector whose goal is to reduce of costs and improvement on productivity. In this way, we intend to understand how the principles of Lean thinking can enable improvements in the process of organ donation.

043-0317 What drives the geographical differences in deceased donor organ procurement in the United States?

Mazhar Arikan, Assistant Professor, University of Kansas, United States
Baris Ata, Associate Professor, Northwestern University, United States
John Friedewald, Associate Professor, Northwestern University, United States
Rodney Parker, Associate Professor, University of Chicago, United States

The deceased-donor kidney allocation system suffers from a severe shortage of available organs. Motivated by a proposed policy change to the kidney allocation system, we conducted a counterfactual analysis which shows that broader sharing of lower quality kidneys leads to an increase in the procurement rates, thus increasing the supply.

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Friday, 10:00 AM - 11:30 AM, Suites III — *Track:* Empirical Research in Operations Management
Session: Empirical Studies in Operations Strategy II
Chair(s): Fabrizio Salvador

043-0521 The effects of customer orientation on customer integration, process flexibility and financial performance

Suntichai Kotcharin, Assistant Professor, Thammasat Business School, Thammasat University, Thailand

The purpose of this research is to determine how a customer orientation affects customer integration and the resulting impact on process flexibility and financial performance. An empirical study was carried out using a sample drawn from the automotive industry in Thailand and structural equation modeling was employed.

043-0455 Lean Thinking to provide smart infrastructure

Alessandro Da Giau, Student, Padova University, Italy
Ennio Cascetta, Professor, University of Napoli Federico II, Italy
Andrea Furlan, Professor, Padova University, Italy
Laura Macchion, Student, Universita Degli Studi Di Padova, Italy
Andrea Vinelli, Professor, Padova University, Italy

Shortage of economic resources requests to review the way in which infrastructures are designed and realized. This empirical research explores applicability of the lean thinking's principles within civil engineering. Results suggest that lean principles and techniques are suitable and lead to eliminate waste to realize cheaper infrastructures of higher quality.

043-0768 From Flexible Resources to Mass Customization: Product Specification Automaticity and Customer Input Receptivity

Fabrizio Salvador, Professor, IE Business School - IE University, Spain
Johnny Rungtusanatham, Professor, Ohio State University, United States

Building on arguments from the rigid flexibility model, we argue that manufacturing personnel attitudes and information processing technologies that are considered to benefit a firm's mass customization capability actually have negative complementary effects on such capability. Empirical results from an international sample of manufacturers provide support for our contentions.

043-1399 Different contexts for competitiveness: performance, technology, production strategy and contingencies

Cesar Ortega, Associate Professor, UNIVERSIDAD NACIONAL AUTONOMA DE HONDURAS (UNAH), Honduras
Jose Machuca, Professor, Universidad De Sevilla, Spain
Maria A. Lopez , , Univ. Nacional Autonoma de Honduras, United States
Pedro Garrido-Vega, Associate Professor, Universidad De Sevilla, Spain

This paper examines relationships among production strategy, technology, performance and contingencies, through bi-variate and holistic fit models, by an empirical data (12 questionnaires from 330 plants worldwide). Findings show support for existence of differences in paths followed by plants, depending on the context for attaining competitiveness (i.e. suboptimal equifinality).

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Friday, 10:00 AM - 11:30 AM, Suites IV — *Track:* Healthcare Operations Management
Session: Lean Practices in Hospitals
Chair(s): Ashley Metcalf

043-1211 Investigating Lean Implementation on Hospital Operational Performance

Prattana Punnakitikashem, Assistant Professor, Mahidol University, Thailand

The objective of this paper is to explore the impact of lean practices on operational performance in healthcare service organization in Thailand. Statistical analysis is conducted to analyze the relationship between the lean implementation and operational performance. Preliminary results on lean practices that significantly contribute to operational performance are presented.

043-0012 Perceptions Fact or Fiction

Steve Bradt, Master Black Belt, Manchester Business School, United States

The initial research data survey on "Perceptions of Lean's application in healthcare" will establish a baseline regarding reported perceptions in the literature. The presentation/paper will share and establish the strength and credibility of these established perceptions and how they may influence the deployment of a Lean initiative.

043-0328 Lean interventions and hospital performance

Oskar Roemeling, Student, Rijksuniversiteit Groningen, Netherlands
Martin Land, Associate Professor, University of Groningen, Netherlands

Lean is a popular method for hospitals to achieve higher performance. Lean interventions in hospitals often focus on reduction of direct waste. However, successful Lean implementations should also target buffer reduction. This study investigates the impact of Lean interventions on buffers using a combination of longitudinal quantitative and qualitative data.

043-0188 Lean philosphy in healthcare: A multilevel look at the impact of structural empowerment

Ashley Metcalf, Student, University of South Carolina, United States
Marco Habermann, Assistant Professor, University of South Carolina, United States
Tim Fry, Professor, University of South Carolina, United States

U.S. hospitals are facing rapid change regarding reimbursements, technologies, and national policies. The focus is shifting from volume-based models of care to value-creation systems. We contrast the traditional physician-driven versus protocol-driven empowerment systems for patient treatment decisions. Using multiple-perspectives and multilevel analysis, the impact of structural empowerment is discussed.

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Friday, 10:00 AM - 11:30 AM, Suites V — *Track:* Manufacturing Operations
Session: Manufacturer Supplier Relationship
Chair(s): Yi-Su Chen

043-0519 An examination of governance practices in mitigating supplier opportunism

Ravi Srinivasan, Assistant Professor, Loyola University Maryland, United States
Ram Narasimhan, Professor, Michigan State University, United States

Drawing from agency theory and justice theory, we examine the effectiveness of governance practices in mitigating supplier opportunistic behavior under different contingent factors such as environmental uncertainty and requirements uncertainty. Results indicate that firms should rely more on justice practices.

043-0621 Strategic Relationship Dissolution: When Historically-Superior Supplier Performance Becomes Detrimental?

Yi-Su Chen, Assistant Professor, University of Michigan Dearborn, United States
Johnny Rungtusanatham, Professor, Ohio State University, United States
Susan Goldstein, Associate Professor, University of Minnesota, United States

Conventional wisdom suggests that supplier performance and the likelihood of manufacturer dissolving a strategic relationship are inversely related. Our paper empirically tests this conventional wisdom and detects a superior supplier performance penalty effect that is robust under conditions of prior supplier involvement in product development and availability of attractive suppliers.

043-1598 Overdependence, Interdependence and Governance Mechanism in Buyer Supplier Relationship: A Critical Evaluation

Santosh Mahapatra, Associate Professor, Clarkson University, United States
Rajesh Sethi, Professor, Clarkson University, United States
Constantin Blome, Assistant Professor, Universitã© Catholique De Louvain, Belgium
Ram Narasimhan, Professor, Michigan State University, United States

Resource Dependence Theory is often used to understand buyer-supplier relationships. Yet, the logic of RDT remains ambiguous due to the narrow conceptualization of the issues relating to dependence/interdependence and inadequate empirical validation of the theory. This study aims to examine and address some of these inadequacies.

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Friday, 10:00 AM - 11:30 AM, Suites VI — *Track:* Product Innovation and Technology Management
Session: Sustainability and Reliability in Product Development
Chair(s): Erica Mazzola

043-0403 Proposing a Proceeding for Evaluating the Reliability of Innovator Product

João Chang Junior, Associate Professor, Campus São Bernardo do Campo, Brazil
Marcelo Teruel, Student, ~Campus São Bernardo do Campo, Brazil

The paper´s objective is to propose a methodology that evaluates and improves the innovative product reliability in its development phase, using accelerated life testing data in prototypes, ratifying product warranty period and assessing company costs in warranty period. The methodology was applied to an electronic product launched in Brazilian market.

043-1479 Indicators for Measuring Eco-Innovation and Application in Brazil

Ana Carolina Braga, Student, Universidad Presbiteriana Mackenzie, Brazil
Leonardo Basso, Senior Lecturer, Universidad Presbiteriana Mackenzie, Brazil
Herbert Kimura, Associate Professor, Universidad Presbiteriana Mackenzie, Brazil
Juliana Saliba, Student, Universidad Presbiteriana Mackenzie, Brazil

The objective of this article is to contribute by means of a debate about of a set of ecological indicators that need to be incorporated in research in Brazil, and to provide subsidies for the discussion of the preparation of the Brazil Eco-Innovation Index.

043-1188 Does firm's network position enhance open innovation performance? Evidences from the biopharmaceutical industry

Giovanni Perrone, Professor, Universita Degli Studi Di Palermo, Italy
Erica Mazzola, Assistant Professor, Universita Degli Studi Di Palermo, Italy

This paper explores the relationship between open innovation (OI) and firm's network position on enhancing firm's innovation performance, such as new product development (NPD). We build a theoretical framework and test it on the biopharmaceutical context. Our result shows how firm's network position influences NPD performance obtained through OI practices.

043-1547 Organizational Complements to Innovation: A Contingency Perspective on the Value of External Relationships

Paulo Gomes, Lecturer, Babson College, United States
Graça Silva, Assistant Professor, ISEG, Portugal

This study investigates the extent to which information obtained from external relationships is associated with innovation performance. Three sources of information are analyzed: relationship with customers during development, during production, and with suppliers. We find that the impact on innovation performance is contingent on cross-functional integration and two external factors.

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Friday, 10:00 AM - 11:30 AM, Silverton — *Track:* Learning and Knowledge Management in OM

Session: Learning in Start-ups

Chair(s): Qiong Chen

043-0450 Strategies for business model reconfiguration: A multiple case study

Cinzia Battistella, Lecturer, University of Udine, Italy
Pietro Romano, Associate Professor, University Of Udine, Italy
Alberto De Toni, Professor, University of Udine, Italy
Giovanni De Zan, Lecturer, University of Udine, Italy

Focusing on change management and strategic agility literatures, the present paper proposes a framework for recognizing common strategies and paths of business model renewal. The methodology is both deductive, by means of literature review, and inductive, by means of five case studies analysis from different industries.

043-1125 How Does Buyer's Knowledge Impact Outsourcing Strategies? A Game Theoretical Model

Qiong Chen, Student, Clemson University, United States
Aleda Roth, Professor, Clemson University, United States
Gulru Ozkan, Assistant Professor, Clemson University, United States
Shouqiang Wang, Assistant Professor, Clemson University, United States

We introduce a signaling game to examine the sourcing strategies of a buying firm that faces two options in determining a supplier to manufacture its new product: search directly or indirectly (through an intermediary). We demonstrate that buyer's knowledge about supply market influences its strategy and the intermediary's effort level.

043-0683 Developing Project Management Competences using Role-Playing Games: A Case Study

Darli Cunha, Associate Professor, Faculdades Metropolitanas Unidas, Brazil

This paper presents a Project Management Training Framework that simulates the project life-cycle concept based on PMBoK guide, its approach and dynamic, used in real-life case studies, both in business and educational environments, driven by a Role-Playing Game designed to support the development of competency in project management.

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Friday, 10:00 AM - 11:30 AM, Matchless — *Track:* Inventory Management

Session: Inventory Management Practice

Chair(s): Zhengliang Xue

043-0578 Managing Freshness Inventory

Zhengliang Xue, Research Staff Member, IBM, United States
David Yao, Professor, Columbia University, United States
Markus Ettl, Manager, IBM, United States

Freshness inventory refers to a stocking system of products with a short shelflife, such that managing some measure of freshness is a central concern. Motivated byindustry practice – direct store delivery model widely used in consumerproducts industry, we formulate the inventory system as a stochastic dynamic program.

043-0673 Retail Space Optimization

Andrew Vakhutinsky, Principal Scientist, Revionics, United States

Placing retail items on the store shelves is the last stage of the inventory management. In this talk we discuss how various replenishment strategies affect optimal planogram design and describe an approach to selecting the best-performing assortment as well as the optimal number of product facings to maximize the revenue.

043-1408 Dynamic Sourcing in Inventory Management: A Stochastic Optimal Control Approach

Xuefeng Gao, Student, Georgia Institute of Technology, United States
Yingdong Lu, Research staff member, IBM, United States
Mayank Sharma, Research Staff Member, IBM, United States
Mark Squillante, Research Staff Member, IBM, United States
Joost Bosman, Student, Centrum Wiskunde & Informatica, Netherlands

We consider dynamic sourcing problems that arise in inventory management applications involving multiple resources and uncertain demand. We derive the explicit optimal control policy that determines resource allocations over time to fulfill demand while maximizing profit and provides managerial insights. Numerical experiments investigate issues of both theoretical and practical interest.

043-1490 Cost Reduction Through Operations Reversal

Ki Ling Cheung, Associate Professor, Hong Kong University of Science & Tech, Hong Kong
Jeannette Song, Professor, Duke University Durham, United States
Yue Zhang, Student, Duke University Durham, United States

In this paper we examine the problem of operations reversal under the objective ofoptimizing the long-run average cost. By using the techniqueof stochastic order, we provide sufficient conditions fordetermining when operations reversal would reduce costs.

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Friday, 10:00 AM - 11:30 AM, Gold Coin — *Track:* Supply Chain Risk Management

Session: Supply Chain Risk 2

Chair(s): Fabian Sting

043-0222 An analysis of the effect of response speed on the bullwhip effect using control theory

Maximiliano Udenio, Student, Technische Universiteit Eindhoven, Netherlands
Jan Fransoo, Professor, Eindhoven University of Technology, Netherlands
Eleni Vatamidou, Student, Eindhoven University of Technology, Netherlands

Nico Dellaert, Associate Professor, Eindhoven University of Technology, Netherlands

We use control theory to analyze the performance and stability of a firm that generates orders as a function of the difference between actual and target values of finished product and supply-line inventories. We illustrate the practical importance of this research by including links to empirical and experimental data.

043-0861 Multiple sourcing in manufacturing networks – a portfolio approach

Stefan Minner, Professor, Technische Universitat Munchen, Germany

We investigate a multi-product network with multiple suppliers and investigate the allocation and sourcing fractions of volumes to suppliers from a risk management perspective using a portfolio approach. Stochastic programming is used to solve the resulting two-stage optimization problem and numerical results investigate several generic supply chain designs.

043-1236 Dealing with financial distressed suppliers: Buying firms' response options and their effectiveness

Stephan Wagner, Professor, Swiss Federal Institute of Technology Zurich, Switzerland
Christoph Bode, Assistant Professor, Swiss Federal Institute of Technology Zurich, Switzerland
Moritz Peter, Student, Swiss Federal Institute of Technology Zurich, Switzerland

This study empirically investigates response options of buying firms to financially distressed suppliers. We identify factors that influence the choice of the response and test their effectiveness by tracking the financial performance of distressed suppliers using a rich longitudinal data set from the automotive industry.

043-1358 Indicators for supply risk monitoring

Stefan Spinler, Professor, Whu - Otto Beisheim School of Management, Germany

Based on cross-impact analysis, we derive a set of indicators for supply risk monitoring. An empirically derived data set shows that a parsimonious set of risk indicators can be derived, with notions of stability, integration and criticality of the impact factors playing an important role.

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Friday, 10:00 AM - 11:30 AM, Molly Brown — *Track:* Marketing and Operations Management Interface
Session: Supply Chains
Chair(s): Moritz Fleischmann

043-1326 Service Differentiation in Make-to-Stock Demand Fulfillment

Moritz Fleischmann, Professor, University of Mannheim, Germany
Herbert Meyr, Professor, University of Hohenheim, Germany
Rainer Quante, Student, Vienna Univ of Econ & Business Admin, Austria
Yao Yang, Student, University of Mannheim, Germany

We consider a make-to-stock production system with known exogenous replenishments and multiple customer classes. The objective is to maximize profit over the planning horizon by deciding whether to accept, backorder, or reject a given order. We present analytical insights into this problem and illustrate it numerically.

043-0574 Strategic Analysis of Dual Channel in Digital Goods

Yinliang (Ricky) Tan, Student, University of Florida, United States
Janice Carrillo, Associate Professor, University of Florida, United States

The advent of digital goods has made a significant impact on the current traditional goods markets for items such as videos and books. We study the decision strategies facing the publishers and retailers for both traditional goods and digital goods by formulating a dual channel model.

043-0007 Information Sharing in Supply Chain of Durable Goods

Neda Khanjari, Assistant Professor, University of Illinois Urbana-Champaign, United States
Seyed Iravani, Professor, Northwestern University, United States
Hyoduk Shin, Assistant Professor, University of California San Diego, United States

We study a supply chain of a durable good product consisted of a retailer with advance demand information and a manufacturer. We study how the policy of the retailer to share his information with the manufacturer depends on durability of the product and other parameters of the model.

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Friday, 10:00 AM - 11:30 AM, Spruce — *Track:* Purchasing and Supply Management
Session: Improving Procurement Performance
Chair(s): Jose Carvalho Jasna Prester

043-1608 Directed Sourcing in Buyer-Supplier-Supplier Triads: Mutually beneficial or mutually destructive?

Jinsuk Yang, Student, Yonsei University, Korea, Republic of (South Korea)
Daesik Hur, Associate Professor, Yonsei University, Korea, Republic of (South Korea)

This is an exploratory case study to develop a deeper understanding of direct sourcing practices often observed in buyer-supplier-supplier triads. Directed sourcing has been often popular among Asian buying firms to improve supply chain performance across multiple tiers. This study explores both positive and negative effects of directed sourcing.

043-0170 Purchasing practices of companies with high material costs

Jasna Prester, Assistant Professor, University of Zagreb, Croatia

Increasing competitive pressures force companies to cut costs. Today, one of the major components of cost is the purchasing spend, which can go up to 70% of a firm's sales volume. Because of this high percentage of costs in total profits purchasing function has gained a significant attention in companies.

043-0445 Key internal and external strategic procurement factors and their impact on order fulfilment in Tanzania

Kabossa Msimangira, Senior Lecturer, Northern Melbourne Institute of TAFE, Australia
Clemence Tesha, Executive Director, Procurement and Supplies Professionals and Technicians Board, Tanzania

This study investigates the key internal and external strategic procurement factors and their impact on order fulfilment in developing countries with reference to Tanzania. We used a survey approach to collect data from procurement personnel, and tested hypotheses using regression analysis. We discuss the findings and implications of the results.

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Friday, 10:00 AM - 11:30 AM, Nat Hill

Track: Retail Operations Management

Session: Topics in Retail Operations

Chair(s): Ramnath Vaidyanathan

043-1369 Bayesian Inventory Management with Potential Change-points in Demand

Zhe Wang, Student, University of North Carolina Chapel Hill, United States
Adam Mersereau, Assistant Professor, University of North Carolina Chapel Hill, United States

We consider an adaptive inventory control problem in which at some known potential change-points, the demand process may change abruptly with some probability. The underlying demand process is never revealed to the decision maker. Using a Bayesian framework, we analyze the optimal policy as demands are observed.

043-1443 Assortment Planning: A Sensitivity Analysis

Ramnath Vaidyanathan, Assistant Professor, Mcgill University, Canada

In this paper, we investigate two important issues in assortment modeling: the impact of ignoring stock-out substitution and using an incorrectly specified choice model, on the optimalassortment and profits. We quantify their effects using the maximum percentage gap from theoptimal solution and investigate key drivers.

043-0016 Assortment Allocation to Distribution Centers to Minimize Split Customer Orders

Andres Catalan, Student, University of Pennsylvania, United States
Marshall Fisher, Professor, University of Pennsylvania, United States

A split order in (online) retail occurs whenever an order is fulfilled in more than one shipment, increasing the retailer's costs. We study the problem of assigning SKUs to DCs to minimize split orders and compare the performance of different heuristics against actual transaction data from a Chinese online retailer.

043-1169 Can there be too much variety? Limits of mass customization

Eren Cil, Assistant Professor, University of Oregon, United States
Mike Pangburn, Associate Professor, University of Oregon, United States

Firms employ mass customization to closely match customers' taste with the delivered product. We additionally consider the brand-level issue of mismatch between customers' tastes and the firm's full range of products. We show that the resulting limit of mass customization, even when costless, is bounded and includes niche "outlier" products.

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Friday, 10:00 AM - 11:30 AM, Pomeroy

Track: Operations Management and Economic Models

Session: Operations Management and Economics Interface

Chair(s): Aydin Alptekinoglu

043-0381 Team Size in Collaborative Projects: The Effect of Leadership Structure

Morvarid Rahmani, Student, University of California Los Angeles, United States
Guillaume Roels, Assistant Professor, University of California Los Angeles, United States
Uday Karmarkar, Professor, University of California Los Angeles, United States

We consider a stochastic staffing game on a project. We show that there is always under-staffing in leaderless teams. In contrast in teams with an internal leader, there is over-staffing if and only if the number of workers is large or the project is far from the deadline.

043-0382 The Exponomial Choice Model

Aydin Alptekinoglu, Assistant Professor, Southern Methodist University, United States
John Semple, Professor, Southern Methodist University, United States

We propose a new discrete choice model and show how its pricing and assortment planning implications are different from those of multinomial logit. In particular, our model does not require a constant markup in optimal prices and, for exogenous prices, the optimal assortment allows leapfrogging in prices.

043-1224 Operations Management for Entrepreneurial Firms

Charles Corbett, Professor, University of California Los Angeles, United States
Guillaume Roels, Assistant Professor, University of California Los Angeles, United States
Onesun Yoo, Assistant Professor, University College London, United Kingdom

We consider the setting of growth-oriented entrepreneurial firms where entrepreneur's time is the chief bottleneck. We present insights into two classical problems in OM: process improvement and hiring. We examine the first via the current time-future time trade-off and the second via the time-money trade-off. Practical management insights are discussed.

043-0553 Information Acquisition Strategies in Competitive R&D Markets: Market Research Vs. Competitive Intelligence

Manu Goyal, Assistant Professor, University of Utah, United States
He Chen, Student, University of Maryland, United States
Yi Xu, Assistant Professor, University of Maryland, United States

Before key R&D decisions, firms often acquire information about important market characteristics. Two most common approaches are market research that collects information through customers, and competitive intelligence that focuses on competitors. We prove that competitive intelligence emerges endogenously, even when information through market research is free and generates higher value.

53 Friday, 01:30 PM - 03:00 PM, Salon A — *Track:* Behavioral Issues in Operations Management
Session: Innovation and Product Development
Chair(s): Moritz Petersen

043-0036 Assessing the Innovation Competence of a Third-Party Logistics Service Provider (3PL)
Shong-Iee Su, Professor, Soochow University, Taiwan, Republic of China
Jian-yu Ke, Assistant Professor, University of Wisconsin, United States

This paper has designed a 23-question survey instrument to assess the innovation competence of a 3PL firm. The survey results of three 3PL firms based in U.S. are analyzed and discussed. The findings have provided insightful information on the nature and study of the innovation competence of a 3PL firm.

043-1269 Sustainability-related Considerations in Product Development – An Experimental Approach
Wolfgang Kersten, Professor, Technische Universitat Hamburg-Harburg, Germany
Moritz Petersen, Student, Technische Universitat Hamburg-Harburg, Germany

Sustainability of products is becoming a major source of competitive advantage. However, trade-offs between different dimensions of sustainability pose challenges for product developers. We propose behavioral biases often distort the choice between design alternatives. An experimental approach is employed to provide further insights.

043-0886 Production line design and motivation: an experimental study on dependencies in production lines
Nick Ziengs, Student, University of Groningen, Netherlands
Jan Riezebos, Associate Professor, University of Groningen, Netherlands
Dirk Pieter Van Donk, Professor, University of Groningen, Netherlands

Research on production lines neglects how dependencies within lines affect worker behaviour. In our study, we consider how dependencies between workers should be designed. Who should depend on whom? To what degree should they be dependent on each other? To answer these, questions, a large scale experimental study was conducted.

043-1453 Linking Firm Commitment, Strength of Ties and NPD Performance Outcomes in Horizontal Networks
Moronke Idiagbon-Oke, Associate Professor, Grand Canyon University, United States
Adegoke Oke, Associate Professor, Arizona State University Tempe, United States

We investigate the relative impact of affective, continuance and normative commitment of firms on the strength of ties between firms engaged in a NPD project in a horizontal network context and the effect of the tie strength on design performance and development time of the NPD project. We investigated our model in a sample of networks of firms engaged in innovative technological projects.

54 Friday, 01:30 PM - 03:00 PM, Salon B — *Track:* Service Operations
Session: Service Analytics 2 and Servitization
Chair(s): Jun Wu

043-0270 Creating Value Through Services
Andy Neely, Professor, Cambridge University, United Kingdom

There is widespread interest in the servitization of manufacturing, but where does the value in services lie? This paper will present a framework for exploring alternative approaches to servitization - highlighting the implications for operations strategies.

043-1414 VMI Adoption in Retail Industry: A Dual Agency Perspective
Min Choi, Student, Arizona State University Tempe, United States
Elliot Rabinovich, Associate Professor, Arizona State University Tempe, United States

Although studies showed that VMI benefits both a buyer and a supplier, many suppliers are unwilling to adopt VMI in practice. We conceptualize VMI from servitization perspective and examine VMI adoption through the lens of agency theory. Constructs affecting VMI adoption are discussed and relevant propositions are derived.

043-1628 Research on a mobile Internet service chain with price competition
Jun Wu, Associate Professor, Beijing University of Posts and Telecommunications, China

In this paper, we study a telecom service chain based on the background of China Mobile Limited (CML), which is the leading mobile services provider in China and boasts the world's largest mobile network and the world's largest mobile customer base.

55 Friday, 01:30 PM - 03:00 PM, Salon C — *Track:* Sustainable Operations
Session: Integrating Environmental Considerations into Operational Decisions
Chair(s): Gokce Esenduran

043-0056 Dynamic Capacity Investment with Two Competing Technologies
Wenbin Wang, Assistant Professor, Shanghai University, China
Mark Ferguson, Professor, University of South Carolina, United States
Shanshan Hu, Assistant Professor, Indiana University Bloomington, United States
Gilvan Souza, Associate Professor, Indiana University, United States

We consider a firm's dynamic capacity decisions given a portfolio of technology options (e.g., HEV and diesel trucks) when demand and fuel costs are stochastic, and there is usage-based capacity deterioration. We provide the analytical structure of the optimal policy, and provide managerial insights based on actual data.

043-0349 Compliance with Environmental Regulation in Project-Based Industries
Gokce Esenduran, Assistant Professor, Ohio State University, United States
Nicholas Hall, Professor, Ohio State University, United States

Zhixin Liu, Assistant Professor, University of Michigan Dearborn, United States

We investigate the implications of environmental regulations on project scheduling. We model a regulator who specifies pollution remediation requirements, and the project companies that respond either by remediation or by investment in greenness. We describe a subsidy for investment in greenness that coordinates the decisions of regulator and project companies.

043-0651 Green Recycling Networks

Fang Tian, Student, Marshall School of Business, United States
Greys Sosic, Associate Professor, Marshall School of Business, United States
Laurens Debo, Associate Professor, Booth School of Business, United States

Motivated by current product takeback systems, based on different recycling responsibility share between governmental legislators and manufacturers, we propose and analyze three types of models, discuss taxing/subsidizing policies under two prevalent models, and provide suggestions to the government that would induce manufacturers' performance that leads to the optimal social welfare.

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Friday, 01:30 PM - 03:00 PM, Salon D — *Track:* Service Operations
Session: Service Operations & Marketing Interface
Chair(s): Rohit Verma

043-1166 Desired and Perceived Corporate Culture in the Hotel Industry: Implications for Performance

Spring Han, Assistant Professor, National Research University, Russian Federation

This study attempts to find the influence of corporate culture on financial performance by identifying the variables that may affect the corporate culture in South Korean hotel industry. We will analyze the differences between "perceived" corporate culture and "preferred" corporate culture and demonstrate implications for performance.

043-0883 Eco-innovation determinants at the hospitality industry

María-del-Val Segarra-Oña, Associate Professor, Universitat Politècnica de València&CHR Research Associate_Cornell University, Spain
Angel Peiro-Signes, Assistant Professor, Universitat Politècnica de València & CHR Research Associate-Cornell University, Spain
Rohit Verma, Professor, Cornell University, United States

The paper presents an EQS model explaining the determinants of the eco-innovative orientation at the Spanish hospitality industry. A sample of 41 firms retrieved from the PITEC (Innovation Panel) database are analyzed concluding that internal characteristics as product and/or process orientation and information sources typology influence the sustainable-orientation when innovating.

043-1161 Understanding Exhibitors and Attendees Preferences for Tradeshows

Rohit Verma, Professor, Cornell University, United States
Spring Han, Assistant Professor, National Research University, Russian Federation

A successful execution of a tradeshow requires careful planning and coordination between different stakeholders (e.g. attendees, exhibitors, meeting planners, destination executives). This project critically assesses the impact of various trends affecting tradeshows, such as social media and mobile technology, sustainability and corporate-social responsibility, budgetary constraints, and emerging buyer-supplier engagement models.

043-0879 Customer Preferences and Opaque Intermediaries

Xiaoqing (kristine) Xie, Assistant Professor, shanghai university of finance and economics, China
Chris Anderson, Associate Professor, Cornell University, United States
Rohit Verma, Professor, Cornell University, United States

We develop an online choice experiment to understand consumer preferences among multiple online distribution channels including regular full information channels and opaque channels where some attributes of the product or service are disguised until after purchase. A Multinomial Logit model is employed to analyze the experimental data.

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Friday, 01:30 PM - 03:00 PM, Salon G — *Track:* Supply Chain Management
Session: Inventory and Pricing Strategies in Supply Chains
Chair(s): Xiuli He

043-0094 Pass-through in an uncertain world

Dash Wu, Senior Lecturer, University of Toronto, Canada

We consider the operation of a stylized supply chain with one manufacture and one retailer facing news vendor problem. We analyze pass-through/pricing decisions in the supply chain.

043-0079 Managing Inventory in the Mexico's Banknote Supply Chain

Yunxia Zhu, Assistant Professor, Texas A&M University College Station, United States
Subodha Kumar, Associate Professor, Texas A&M University College Station, United States
Sara Rodríguez Sánchez, Assistant Professor, Universidad Autonoma De Nuevo Leon, Mexico
Chelliah Sriskandarajah, Professor, Texas A&M University College Station, United States

This paper studies transportation and holding of physical cash of multiple denominations in Mexico's cash supply chain. By using the actual data obtained from the Central Bank of Mexico, we verify the performance of our near-optimal heuristic algorithm, and study the influence of several parameters on the solution.

043-0146 Analysis of expediting in a stochastic inventory routing probblem

Necati Ertekin, Student, Texas A&M University College Station, United States
Michael Ketzenberg, Associate Professor, Texas A&M University College Station, United States
Richard Metters, Professor, Texas A&M University College Station, United States

We consider a stochastic inventory routing problem where a supplier serves multiple customers using a single vehicle. We formulate a Markov decision process model and propose a heuristic where the key assumptions are that expediting is allowed and the state variables are the number of periods since the last visit.

043-0164 New Product Pricing Strategy in the Social Media Era

Qinglong Gou, Associate Professor, University of Science & Technology of China, China
Juzhi Zhang, Student, University of Science & Technology of China, China

We propose a two-period pricing model for new product introduction in the social media era where consumers are susceptible to online word of mouth (OWOM) and reference price. Our model illustrates how firms should make the trade-off between OWOM and reference price when they determine their new product pricing strategies.

58 Friday, 01:30 PM - 03:00 PM, Salon H — *Track:* Supply Chain Management
Session: Knowledge Management and Learning
Chair(s): Xiaowen Huang

043-1499 Supply chain absorptive capacity: inter-organizational antecedents and performance impact

Murat Kristal, Associate Professor, York University, Canada
Xiaowen Huang, Associate Professor, Miami University, United States
Tracy Johnson-Hall, Student, College of William & Mary, United States
Aleda Roth, Professor, Clemson University, United States
Thomas Choi, Professor, Arizona State University Tempe, United States

This study investigates inter-organizational antecedents and performance impact of firms' supply chain potential absorptive capacity (SC/PACAP) and realized absorptive capacity (SC/RACAP). Applying the lens of Complex Adaptive Systems, we identify several inter-organizational antecedents and argue that these antecedents influence SC/PACAP and SC/RACAP differently and subsequently lead to different performance outcomes.

043-1241 Dynamic capabilities for connection to a GPN: the Brazilian studios in the animation industry

Silas Ferreira Junior, Student, Universidade De Sao Paulo, Brazil
Willian Gatti, Student, Universidade De Sao Paulo, Brazil
Afonso Fleury, Professor, Universidade De Sao Paulo, Brazil

Study on which dynamic capabilities Brazilian studios developed for successful connection to animation industry's GPN. Multicase research showed the most important capability was network-based product development, due to decentralized cartoon production. Future research includes cross-industry comparisons. Moreover, it seems necessary to extend theory with new frameworks, suited for virtual goods.

043-0210 Measuring Supply Chain Quality: A Learning/Process Perspective Instrument

Marc Schniederjans, Professor, University of Nebraska Lincoln, United States
Mahour Parast, Assistant Professor, University of North Carolina, United States
Dara Schniederjans, Assistant Professor, University of Rhode Island, United States

We develop a theoretical model and survey instrument for supply chain quality from the knowledge-based view of the firm. Grounded in a review of quality management, supply chain management and strategic management literature, we develop a research framework to define and conceptualize measures and metrics for supply chain quality.

043-0103 CSR as a key element for integrating knowledge production into supply chain management

Marina Mattera, Assistant Professor, Universidad Europea de Madrid, Spain

Sustainable supply chain management calls for an in-depth analysis of the interactions between stakeholders and the firm. Through the assessment of a firm's knowledge lifecycle, it is possible to achieve a higher understanding of the company's value chain, delivering products with higher value added and achieving greater customer satisfaction.

59 Friday, 01:30 PM - 03:00 PM, Salon I — *Track:* Humanitarian Operations and Crisis Management
Session: Humanitarian Logistics and Services I
Chair(s): Graham Heaslip

043-1555 A service theoretic view of humanitarian logistics and services

Osman Aydas, Student, University of Wisconsin Milwaukee, United States
Manpreet Kaur, Student, University of Wisconsin Milwaukee, United States
Nezih Altay, Associate Professor, Depaul University, United States

We analyze humanitarian logistics and services using several service theories, including the Unified Services Theory. We discuss the strengths and weaknesses of these theories in explaining expected behavior of HL&S models.

043-0714 A Typology of Services in Disaster Relief: Evidence from Two Disaster Relief Chains

Richard Oloruntoba, Lecturer, Newcastle Business School, The University of Newcastle Australia, Australia

Delivery of services in disaster relief chains (DRCs) is inadequately addressed in literature.Disaster relief delivery and associated DRCs are often discussed in terms of the delivery oftangible goods such as medicine, food and water. Research on services within relief isrelatively scant. Based on two empirical case studies of DRCs in Australia, this article:analyses the types of services delivered in each of the two DRCs; proposes a typology andclassification of services within disaster relief; and advocates a reconceptualization ofdisaster relief through an enlargement of the scope of conventional perspectives anddiscourses on disaster relief to include services and its delivery. The research is useful foranalysing, classifying and planning of services and its delivery in disaster relief. It also opensup new research directions for disaster logistics and operations management scholars in thearea of services and service delivery in disaster relief.

043-1255 Managing a supply chain of service

Kate Hughes, Lecturer, Heriot-Watt University, United Kingdom

Emergency response to water-based events in Australia is led by the State Emergency Service (SES). This 'supply chain of service' is staffed by professionally trained volunteers who donate their time to the community. This paper examines the talent management practices used by the SES to support and develop their members.

60 Friday, 01:30 PM - 03:00 PM, Salon J — *Track:* Humanitarian Operations and Crisis Management
Session: Disaster Management in Nigeria and Performance Measurement in Human Logistics
Chair(s): Pedro Reyes

043-1310 Humanitarian Aids and Logistics Supply Operations for Victims of Perennial Floods Disasters in Lagos, Nigeria:

Alabi Soneye, Associate Professor, University of Lagos, Nigeria

Lagos floods perennially due to its low-lying coastal location. The paper analyzes the 3-year data collection on the causes, periodicity and severity of floods versus the humanitarian services, providers and distribution chain comparatively for six highly populated neighborhoods. The results portend a gloomy scenario for sustainable crisis management.

043-1431 Adaptation to Water Stress and Climate Change in Nigeria

Amidu Ayeni, Lecturer, University of Lagos, Nigeria
Alabi Soneye, Associate Professor, University of Lagos, Nigeria
Fatai Badru, Associate Professor, University of Lagos, Nigeria

Water stresses from climate change include but not limited to droughts, water shortage and quality degradation. The paper examines the influence of demeaning socio-cultural and tradition nexus on adaptation and responses in Nigeria. It underscores climate change and water stress management and humanitarian operations in the country.

043-1290 Determining Pre-positioned Humanitarian Aid Warehouse Location

Stephen Pettit, Reader, Cardiff University, United Kingdom
Saeyeon Roh, Student, Cardiff University, United Kingdom
Anthony Beresford, Professor, Cardiff University, United Kingdom

Locating pre-purchased stock located in pre-positioned warehouses is a commonly adopted approach for disaster preparedness. This paper identifies, using multi-criteria analysis, the key factors for warehouse location in Dubai, UAE. AHP structures the location selection problem and determines criteria weights. TOPSIS is used to obtain the final location ranking structure.

043-0299 Performace Measurement in Humanitarian Logistics: a process-oriented perspective

Dorit Bölsche, Professor, Hochschule Fulda, University of Applied Sciences, Germany

Does performance measurement improve the performance in humanitarian aid? Approaches from the private sector are analyzed with their application to the humanitarian sector. One central finding is that performance measurement is more than the collection of data - approaches that are able to combine the process-oriented perspective with performance measurement are needed (e.g. the SCOR-model).

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Friday, 01:30 PM - 03:00 PM, Suites I — *Track:* General Track
Session: Applications in POM I
Chair(s): Harry Barton

043-1217 Intelligent system of prediction and management of maritime risk crises using neural-fuzzy networks

Mahdi Abbasi, Reader, Toyserkan Branch, Islamic Azad University, Toyserkan,, Iran (Islamic Republic of)
Sarah Eghbali, Reader, Mazandaran University Of Science And Technology, Iran (Islamic Republic of)

Current study is modeling system taking advantage of neural network to predict and manage crisis. Among the privileges of this method is getting updated with new data and using the data for the purpose of predicting and managing the crises to come and consequently improving the efficiency of the system.

043-0616 Operationalizing a police performance management system

Harry Barton, Professor, Nottingham Trent University, United Kingdom

Performance improvement strategies across the police service are required to embed a performance management culture, to meet the demands for greater efficiency and effectiveness of service delivery demanded by governments. In this paper a High Performance Police System (HPPS) is proposed to enhance the prospects of successful implementation.

043-1130 A Joint Surveillance and Patrol Problem for Law Enforcement

Belleh Fontem, Student, University of Alabama Tuscaloosa, United States
Sharif Melouk, Assistant Professor, University of Alabama Tuscaloosa, United States
Burcu Keskin, Assistant Professor, University of Alabama Tuscaloosa, United States

We investigate the problem of using surveillance systems to guide law enforcement agents to deal with dangerous incidents in order to maximize the cumulative harm averted from society. We introduce a tight formulation of the resulting team orienteering problem and develop a robust optimization framework to deal with parameter uncertainty.

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Friday, 01:30 PM - 03:00 PM, Suites III — *Track:* Empirical Research in Operations Management
Session: Empirical Studies in Regulated Markets
Chair(s): Enno Siemsen

043-0144 FDA Quality Inspections and Medical Device Recalls: Understanding the Effectiveness of the Auditing Process

George Ball, Student, University of Minnesota, United States
Enno Siemsen, Assistant Professor, University of Minnesota, United States
Rachna Shah, Associate Professor, University of Minnesota, United States

The FDA conducts audits of manufacturers' quality systems at least once every 2 years. These inspections are holistic reviews which aim to regulate and identify improvements for a firm's quality system. We seek to understand the effectiveness of this process by determining their impact on subsequent medical device product recalls.

043-0218 Conformance Quality and the Interdependence of R&D and Manufacturing in the Pharmaceutical Industry

John Gray, Assistant Professor, Ohio State University, United States
Enno Siemsen, Assistant Professor, University of Minnesota, United States
Gurneeta Vasudeva, Assistant Professor, University of Minnesota, United States

Does the collocation of manufacturing and research and development (R&D) activities improve or hurt manufacturing performance? We empirically show that the conformance-quality-related benefits from improved coordination between manufacturing and R&D in the pharmaceutical industry generally dominate the drawbacks, and thus, collocated sites have superior manufacturing quality performance.

043-0461 Influence of top management on operational performance

Gopesh Anand, Assistant Professor, University of Illinois Urbana-Champaign, United States
John Gray, Assistant Professor, Ohio State University, United States
Enno Siemsen, Associate Professor, University of Minnesota, United States

We examine the relationship between top management composition and operational performance of pharmaceutical companies. We focus on observable attributes of top managers such as their functional background. Data on process compliance from manufacturing plants are used to assess operational performance.

043-0545 Time to Recall: A Duration Analysis of Recall Strategies and Effectiveness in the FDA-Regulated Food Sector

Tracy Johnson-Hall, Student, College of William & Mary, United States
Aleda Roth, Professor, Clemson University, United States
Manpreet Hora, Assistant Professor, Georgia Institute of Technology, United States

We study the role of supply chain characteristics and recall strategies during product recalls and their association with time to recall for perishable food products. We apply duration analysis to FDA recall data from 2004-2010 to examine this association. We discuss our results and implications for firms, consumers and policy-makers.

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Friday, 01:30 PM - 03:00 PM, Suites IV — *Track:* Healthcare Operations Management
Session: Publishing Your Healthcare Operations Research - Panel
Chair(s): Craig Froehle

043-1625 Publishing Your Healthcare Operations Research - Panel

Craig Froehle, Associate Professor, University of Cincinnati, United States
Murray Cote, Associate Professor, Texas A&M University College Station, United States
John Fowler, Professor, Arizona State University Tempe, United States
Bruce Golden, Professor, University of Maryland, United States

An interactive panel with leading editors and researchers in healthcare operations on how (and why) to get your research published in both OM and healthcare industry journals.

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Friday, 01:30 PM - 03:00 PM, Suites V — *Track:* Manufacturing Operations
Session: Capacity Planning
Chair(s): Dennis Yu

043-1036 Capacity Sharing Among Firms Facing Price and Time Sensitive Demand

Tanja Mlinar, Student, Universitã© Catholique De Louvain, Belgium
Philippe Chevalier, Professor, Voie du Roman Pays 34, 1348 Louvain-la-Neuve, Belgium, Belgium

We consider the problem of price setting when two firms share a production capacity in order to serve their heterogeneous customers which demands are price and time sensitive. In order to ensure that each firm achieves benefits from sharing we employ different priority based queueing disciplines.

043-0190 Closed-Loop Supply Chain Models for a High-Tech Product under Alternative Reverse Channel and Collection Cost

Chia-Hung Chuang, Assistant Professor, University of North Dakota, United States
Charles Wang, Associate Professor, University at Buffalo, United States
Yabing Zhao, Student, University at Buffalo, United States

This paper studies closed-loop supply chain models for a high-tech product with a short life-cycle and volatile demand. We characterize and compare the manufacturer's optimal production quantities and profits. We also investigate the impact of economies/diseconomies of scale in collection cost on the manufacturer's choice of reverse channel structures.

043-1069 Capacity and Pricing Strategies in a Competitive Environment with Vertical Differentiation

Dennis Yu, Assistant Professor, Clarkson University, United States
Betul Lus, Assistant Professor, SUNY Empire State College, United States

We study firm's optimal capacity and price decisions in a competitive market with a vertical differentiated product line and possible demand uncertainties. Equilibrium results are derived for both simultaneous and sequential games with and without demand uncertainties. We show that leader of the sequential game always produces high end product.

043-1159 When is Ours Better than Mine: A Study of Collaborative Consumption of Durable Goods

Hendrarto Supangkat, Student, Illinois Institute of Technology, United States
Jiong Sun, Assistant Professor, Illinois Institute of Technology, United States

The increasingly connected customer makes sharing of durable goods a recent trend, e.g., RelayRides and NeighborGoods. Sharing durable goods is subject to capacity scarcity, and reshapes demand. We study when sharing is more profitable and/or more environmental friendly than sole ownership.

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Friday, 01:30 PM - 03:00 PM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: Global Issues in Learning
Chair(s): Vitor Brock

043-1003 The Impact of Knowledge Exchange in Quality Performance: A Cross-Country Analysis

Vitor Brock, Student, UNISINOS, Brazil
Iuri Gavronski, Assistant Professor, UNISINOS, Brazil

Organizational learning is critical in manufacturing especially in pursue of quality. In this study we provide a preliminary data analysis of a survey collected in Brazil and Canada. Our findings is that External Knowledge Exchange plays a pivotal role in Canada while Internal Knowledge Exchange is more relevant in Brazil.

043-0827 Single Subsidiaries as Competence Centers in Global Production Networks

Johannes Ixmeier, Student, Friedrich-Alexander Universitat Erlangen-Nurnberg, Germany
Lothar Czaja, Student, Friedrich-Alexander Universitat Erlangen-Nurnberg, Germany
Kai-Ingo Voigt, Professor, Friedrich-Alexander Universitat Erlangen-Nurnberg, Germany

With the localization of production worldwide, the need for decentralized competence development must be considered in global production networks. Hence, decentralized centers of excellence (CoE) are an important instrument to develop and share critical competences in MNCs. This research identifies the necessary elements of different CoE approaches for global production.

043-0097 Competence Evaluation and Management in Logistics

Matthias Klumpp, Professor, FOM University, Germany
Hella Abidi, Senior Lecturer, FOM University, Germany

This paper describes survey results regarding explicit and tacit knowledge in logistics processes as well as the German competence evaluation tool "Berufswertigkeit". These results can increase productivity in logistics qualification and logistics processes and will support the development of an Industry Qualifications Framework Logistics (IQF-L), derived from the EQF concept.

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Friday, 01:30 PM - 03:00 PM, Matchless *Track:* Inventory Management
Session: Interface of Operations and Finance
Chair(s): Wei Luo

043-0839 Managing Inventory Systems with Trade Credit and Payment Defaults

Wei Luo, Student, Duke University Durham, United States
Kevin Shang, Associate Professor, Duke University Durham, United States

We consider a credit-constrained firm that orders inventory to satisfy stochastic demand in a finite horizon. The firm provides trade credit to customers and receive it from the supplier. The work sheds light on the management of cash conversion cycle and demonstrate how liquidity provision can mitigate the bullwhip effect.

043-1337 Commodity Processing and Financial Hedging : Under Correlated Price and Demand in the Presence of Yield Uncertainty

Ankur Goel, Assistant Professor, Case Western Reserve University, United States
Fehmi Tanrisever, Assistant Professor, Eindhoven University of Technology, Netherlands

We explore the value of hedging for a firm that procures an input commodity to produce an output commodity to sell to the end customer. Our analysis illustrates that partial hedging dominates the policies of full hedging and no hedging. We also consider yield uncertainty.

043-1501 The effects of strategic consumers on bankruptcy and liquidation sales

John Birge, Professor, University of Chicago, United States
Song Yang, Assistant Professor, London Business School, United Kingdom
Rodney Parker, Associate Professor, University of Chicago, United States
Xiao Wu, , University of Chicago, United States

When firms face financial distress, they may anticipate a future liquidation sale of inventory to obtain funds for ongoing operations or compensating creditors. Strategic consumers also may anticipate this outcome and withhold purchases to provoke liquidation. This paper provides a model and analysis of this situation.

043-0531 Optimal Compensation for Newsvendor Managers

Hande Cetinay, Student, Eindhoven University of Technology, Netherlands

The aim of this paper is to analyze different managerial compensation contracts, and their effect on financial and operational decisions of a newsvendor manager. We address the agency cost of debt and identify the optimal compensation contract terms, which determines the total corporate pie and its distribution.

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Friday, 01:30 PM - 03:00 PM, Gold Coin *Track:* Supply Chain Risk Management
Session: Supply Chain Risk 3
Chair(s): Saibal Ray Haresh Gurnani

043-0468 Ordering Behaviour under Supply Risk: An Experimental Investigation

Haresh Gurnani, Professor, University of Miami, United States
Karthik Ramachandran, Assistant Professor, Georgia Institute of Technology, United States
Saibal Ray, Associate Professor, Mcgill University, Canada
Yusen Xia, Associate Professor, Georgia State University, United States

Subjects place orders from two suppliers who differ in costs and reliabilities to satisfy fixed end-demand. Analytically, it is optimal to sole-source. However, subjects in experiment show a systematic tendency to diversify orders even if this increases risks and lowers profits. We explore role of bounded rationality in explaining decisions.

043-0639 Single versus Multiple Sourcing: Drivers of Supplier Diversification

Fernando Bernstein, Professor, Duke University Durham, United States
Changrong Deng, Student, Fuqua School of Business, United States
Sasa Pekec, Associate Professor, Fuqua School of Business, United States

A manufacturer's optimal decision to diversify orders across multiple suppliers might not only be due to supply risk management, but it could also result from the shape of the manufacturer's revenue function or the suppliers' production functions. Specifically, some forms of supply risk (random yield) cannot be mitigated by diversification.

043-0664 Strategic Supplier Alliances under Default Risk

Xiao Huang, Assistant Professor, Concordia University, Canada
Tamer Boyaci, Associate Professor, Mcgill University, Canada
Mehmet Gumus, Assistant Professor, Mcgill University, Canada
Saibal Ray, Associate Professor, Mcgill University, Canada
Dan Zhang, Assistant Professor, University of Colorado Boulder, United States

We study how suppliers form alliances in both assembly systems and competitive markets with default risks. Suppliers balance between joining larger alliances that have better chance to survive or smaller ones that result in higher profit allocations. Downstream assembler/buyer may invest in upstream risk structures and influence the coalition formation.

043-1190 Financial Hedging Decision on Procurement Risk for Newsvendor Model with Value-at-risk Consideration

Yuan Wen, Student, Tsinghua University, China
Qing Ding, Assistant Professor, Singapore Management University, Singapore
Jian Chen, Professor, Tsinghua University, China

We consider a newsvendor problem under a value-at-risk constraint. A firm faces a stochastic demand and a stochastic procurement price from a commodity spot market. We design financial hedging portfolios contingent on the procurement price with completed term and strike structure, and find the joint optimal ordering and hedging policy.

71 Friday, 01:30 PM - 03:00 PM, Molly Brown — *Track:* Marketing and Operations Management Interface
Session: Topics in Marketing and Operations
Chair(s): Aydin Alptekinoglu

043-0447 Optimal Dynamic Sales and Production Plans for New Product Under Scarcity Effects

Rahul Patil, Assistant Professor, Indian Institute of Technology Bombay, India

We develop integrated production and sales planning model for new product under supply constraint. We consider product scarcity situations and its consequences namely hype and retarding effects. We identify situations where strategic sales delay and myopic sales policies can be optimal. Under retarding effect, we show that the length of build-up period depends upon magnitude of retarding effect.

043-0354 An empirical analysis of revenue drivers in the mobile app market

Paolo Roma, Assistant Professor, Universita Degli Studi Di Palermo, Italy
Giovanni Perrone, Professor, Universita Degli Studi Di Palermo, Italy
Filippo Valenti, Student, Universita Degli Studi Di Palermo, Italy

Mobile app market is booming and will exceed $46 billion by 2016. In this paper, we take the perspective of developers. Based on data from two major app stores (Apple Store and Google Play), we construct an econometric model to investigate the factors influencing apps' success in terms of revenue.

043-1578 Static Pricing versus Variable Pricing under Cost Uncertainty

Dash Wu, Senior Lecturer, University of Toronto, Canada

We examine the optimal pricing decisions under cost uncertainty in a distribution channel. Wefind that variability is shrunk along the channel, which is consistent with empirical observations.

72 Friday, 01:30 PM - 03:00 PM, Spruce — *Track:* Purchasing and Supply Management
Session: Leveraging Supply Networks for Competitive Advantage
Chair(s): Zhaohui Wu Janet Hartley

043-0048 A Theory of Coopetition of Supply Networks

Surya Pathak, Assistant Professor, University of Washington Bothell, United States
Zhaohui Wu, Associate Professor, Oregon State University, United States
David Johnston, Professor, York University, Canada

Co-opetition or simultaneous competition and cooperation, is ever-present in supply networks. Co-opetition in supply networks can be understood by analyzing the structural characteristics of the network. We specify theoretical supply network archetypes and employ concepts from social network theory to propose a framework for describing co-opetitive dynamics in supply networks.

043-0109 A theory of nexus supplier

Tingting Yan, Assistant Professor, Wayne State University, United States
Thomas Choi, Professor, Arizona State University Tempe, United States
Yusoon Kim, Assistant Professor, Oregon State University, United States

In this study, we build a theory of nexus suppliers. Such suppliers straddle multiple organizational networks, which allow them to provide informational and operational benefits to OEMs. Drawing on the extant literature and real-world observations, we develop propositions on how OEMs could identify, manage and develop nexus suppliers.

043-0121 A Process view of supply network collaboration

Janet Hartley, Professor, Bowling Green State University, United States
Kenneth Petersen, Professor, University of Tennessee Knoxville, United States
Ernie Nichols, Associate Professor, University of Memphis, United States

Collaboration within the supply chain is becoming more important for competitive success. Based on data gathered through in-depth interviews with companies in different industries, we examine the processes used for interorganizational collaboration in supply networks. A conceptual framework describing collaboration processes is developed.

043-0614 Power, trust and their effect on supplier resource allocation

Niels Pulles, Assistant Professor, University of Twente, Netherlands
Jasper Veldman, Assistant Professor, University of Twente, Netherlands
Holger Schiele, Professor, University of Twente, Netherlands

Many firms compete for the resources of suppliers that are shared with competitors. We provide a clearer picture of the mechanisms firms might use to influence supplier resource allocation. Two mechanisms are examined in this paper: (1) exerting various forms of power and (2) creating inter-organizational trust.

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Friday, 01:30 PM - 03:00 PM, Nat Hill — *Track:* Retail Operations Management

Session: Strategic Supply and Strategic Customers

Chair(s): Ali Parlakturk

043-0039 Implications of Product Lifecycle and Channel Structure Upon Optimal Investment in Durability

Sreekumar Bhaskaran, Assistant Professor, Southern Methodist University, United States
Steve Gilbert, Professor, University of Texas Austin, United States

We explore the interactions between channel structure and mode of operations (selling versus leasing) and their implication for a manufacturer's willingness to increase product durability. We find that a manufacturer who sells her product through a decentralized channel may produce a more durable product than one who leases.

043-1500 Pricing Reservations

Kate Ashley, Student, University of California Berkeley, United States
Pnina Feldman, Assistant Professor, University of California Berkeley, United States

Many firms offer reservations for service in future periods. Recently, some firms have started to charge for reservations by implementing different pricing strategies. This paper proposes two different reservation pricing schemes, characterizes optimal prices and revenues under each scheme, and discusses managerial implications.

043-0441 The Value of Commitments When Selling to Strategic Consumers

Mustafa Kabul, Student, Sas Institute, United States
Ali Parlakturk, Assistant Professor, University of North Carolina Chapel Hill, United States

We study the value of commitments in a decentralized supply chain when customers are forward looking and can strategically wait for price mark downs.

043-1350 Pricing Restaurant Reservations: Dealing with No-Shows

Jaelynn Oh, Student, Wharton School, United States
Xuanming Su, Associate Professor, University of Pennsylvania, United States

We consider two remedies for restaurant reservation no-shows: to punish no-shows by charging fees and to encourage show-ups by giving discounts. We study the restaurant's pricing problem when serving both reservation holders and walk-in customers. We characterize equilibrium prices and discuss model implications

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Friday, 01:30 PM - 03:00 PM, Pomeroy — *Track:* Operations Management and Economic Models

Session: Economic Models in Supply Chain Quality Management

Chair(s): Yimin Wang Rui Yin

043-1056 Impact of Payer-Provider Integration on Quality, Access, Cost, and Social Welfare

Aaron Ratcliffe, Student, University of North Carolina Chapel Hill, United States
Wendell Gilland, Associate Professor, University of North Carolina Chapel Hill, United States
Ann Marucheck, Professor, University of North Carolina Chapel Hill, United States

We develop a queuing game to analyze interaction of a profit-maximizing health provider which chooses quality and capacity and cost-minimizing insurer which sets its coinsurance rate. We compare quality, access, cost and social welfare between a competitive managed care model and integrated model where the provider insures its patient population.

043-1078 The Strategic Role of Quality Monitoring in the Outsourcing of Service-based Business Processes

Shouqiang Wang, Assistant Professor, Clemson University, United States
Aleda Roth, Professor, Clemson University, United States

We investigate the impact of buyer's commitment to monitoring its service provider's quality in outsourcing. Focusing on the informational role of in-house versus third-party quality monitoring program, we observe trade-offs. Counter to conventional wisdom, the timing of contracting with the third-party also plays a subtle, yet critical role in performance.

043-1099 Complementarity of Joint Efforts in Quality Improvement

Yimin Wang, Assistant Professor, Arizona State University Tempe, United States
Rui Yin, Assistant Professor, Arizona State University Tempe, United States

Transfer price between the buyer and the supplier is a key determinant of supply quality. We study how firm power influences the supplier and buyer's joint quality improvement effort. We characterize the optimal quality improvement effort when their effort are substitutes or complements, and offer insights on transfer price determination.

043-1170 Do Other Firms Benefit When You Invest in Vendor Quality Improvement? - An Empirical Investigation

Anupam Agrawal, Assistant Professor, University of Illinois Urbana-Champaign, United States
Suresh Muthulingam, Assistant Professor, Cornell University, United States

Many firms undertake quality improvement efforts at shared vendors. We empirically investigate the extent to which quality improvements spillover to benefit other firms, the conditions under which spillover manifests and whether the gains from spillover are sustained over time, using quality date from a unique setting.

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Friday, 01:30 PM - 03:00 PM, Salon E — *Track:* Behavioral Issues in Operations Management

Session: Management and Team Performance

Chair(s): Constantin Alba

043-1195 Effects of Manager's Depth and Breadth of Experience on Planning and Execution Performance

Constantin Alba, Student, IE Business School, Spain
Fabrizio Salvador, Professor, IE Business School, Spain
Elliot Bendoly, Associate Professor, Emory University, United States
Antti Tenhiala, Assistant Professor, IE Business School, Spain

We investigate whether managers' depth and breadth of experience in project-based settings affect the efficiencies of both managers and these whom they supervise. While confirming that past results can be extended to the managerial level, we demonstrate that the effects of the breadth are different when tested across organizational levels.

043-1514 Measuring Top Management Team Performance through Business Simulation

Jesus Orozco, Assistant Professor, Ipade Business School, Mexico
Miguel Estrada, Professor, Ipade Business School, Mexico

In this paper, we investigate critical behavioral factors in the decision making process as well as implications of teamwork and managerial experience in the performance of a team. Our research was conducted using a business simulation platform comprising operations, finance and marketing decisions in a group of MBA students.

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Friday, 01:30 PM - 03:00 PM, Salon F *Track:* Scheduling and Logistics
Session: Capacity Planning, Product Layout, and Production Scheduling under Uncertainty
Chair(s): Zhili Tian

043-0352 Understanding Product Line Complexity through Stochastic Lot Sizing Analysis in Continuous Chemical Processes

Zhili Tian, Assistant Professor, Towson University, United States
Panos Kouvelis, Professor, Washington University St Louis, United States

We formulate the problem of determining the production run lengths and sequencing the runs in continuous chemical processes with sequence-dependent changeover times and uncertain demands. We develop a sequential method to solve this planning program. Through global sensitivity analysis, we generate data for estimating the product line complexity cost models.

043-0378 Stochastic two-sided line balancing problems

Wen-Chyuan Chiang, Professor, The University of Tulsa, United States
Timothy Urban, Professor, The University of Tulsa, United States
Chunyong Luo, Student, The University of Tulsa, United States

In this paper, we consider two-sided line balancing problems with stochastic task times. We discuss the joint probability that both sides of the station finish within the cycle time. We also extend this joint probability to all stations that both sides of all stations finish within the cycle time.

043-0666 Questioning the dependency of multiple level lot sizing (MLLS) decisions on accurate cost data

Natalie Simpson, Associate Professor, Suny At Buffalo, United States

One enduring criticism of the MLLS model is its reliance on the availability of accurate cost data corresponding to each of a group of interconnected inventory stages. However, analysis of 36,000 MLLS simulation experiments reveals a counter-intuitive robustness of performance of many solution techniques, despite increasingly inaccurate cost data.

043-1141 Bounds for the problem of minimizing the weighted flow time of a set of jobs on identical processors

Peruvemba Ravi, Associate Professor, Wilfrid Laurier University, Canada
Paul Iyogun, Associate Professor, Wilfrid Laurier University, Canada

We examine the problem of scheduling a set of jobs on a set of identical processors to minimize total weighted completion time. We propose a new formulation of this NP-hard problem, one that explicitly treats each job as being made up of a collection of subjobs. We use Lagrangean relaxation to propose four lower bounds for this problem.

79 Friday, 03:30 PM - 05:00 PM, Salon A — *Track:* Behavioral Issues in Operations Management
Session: Buyer Supplier Relationships
Chair(s): Dina Ribbink

043-0619 Backordering in the Newsvendor model

Chirag Surti, Assistant Professor, University of Ontario Institute of Technology, Canada
Dina Ribbink, Assistant Professor, University of Western Ontario, Canada

Retailers operate in a highly competitive and price sensitive sector of the economy, with unusually low margins. Therefore, efficient management of inventory is vital. Using an experimental design, we investigate the impact of stock-outs in the Newsvendor model from a retailers perspective.

043-0620 Incentive systems in behavioral research

Stephanie Eckerd, Assistant Professor, Robert H. Smith School of Business, United States
Dina Ribbink, Assistant Professor, University of Western Ontario, Canada

Experimental methods are increasing used in operations management research as they provide a great opportunity to model buyer supplier relationships. The goal of this research is to investigate the effectiveness of bonus versus penalty incentive structures on task performance within a supply chain problem across cultures.

043-0296 Push, Pull, or Both? A Behavioral Study of Inventory Risk on Channel Efficiency

Andrew Davis, Assistant Professor, Cornell University, United States
Elena Katok, Professor, University of Texas Dallas, United States

We experimentally investigate how the allocation of inventory risk affects supply chain performance. We first evaluate two wholesale price contracts that differ in which party holds the inventory and develop a behavioral model. We then apply this model to a thirdcontract and find that it qualitatively matches behavior.

043-0788 Trust and reciprocity in buyer-supplier relations: do social preferences matter?

Alessandro Ancarani, Associate Professor, University of Catania, Italy
Carmela Di Mauro, Associate Professor, University of Catania, Italy
Florian Schupp, CPO, Schaeffler Group, Germany

We investigate whether dimensions of social preferences of buyers and suppliers, namely trust propensity and inequality aversion, are related to inter-firm social bonds built on trust and reciprocity. We find that inter-firm trust increase with individual trust propensity, while inequality aversion is positively related to the strength of inter-firm reciprocity.

80 Friday, 03:30 PM - 05:00 PM, Salon B — *Track:* Healthcare Operations Management
Session: Patient Flow Management
Chair(s): Murray Cote

043-0932 On the Access-Throughput Spiral Effects in Large Academic Centers

Retsef Levi, Associate Professor, Massachusetts Institute of Technology, United States
Timothy Carnes, Student, Link Analytics, United States
Benjamin Christensen, Student, Massachusetts Institute of Technology, United States
Bethany Daily, Administrative Director, Massachusetts General Hospital, United States
Peter Dunn, Executive Medical Director, Massachusetts General Hospital, United States
Ulrich Schmidt, MD, Massachusetts General Hospital, United States
Ana Cecilia Zenteno, Student, Massachusetts Institute of Technology, United States

We demonstrate empirically and statistically the surprisingly adverse impact of patient flow disruptions from ICU to regular bed floors in large academic hospitals. We call this the Access-Throughput Spiral Effect.

043-0312 A new approach to diagnosing patient waiting times

Martin Land, Associate Professor, University of Groningen, Netherlands
Manda Broekhuis, Associate Professor, University of Groningen, Netherlands
Taco Van der Vaart, Associate Professor, University of Groningen, Netherlands

Reducing patient waiting times is an important aim of hospitals. Past research has shown that it is difficult to determine the causes of patient delays, due to the heterogeneity of patient flows. This paper presents the results of a new approach based on input-output modelling, tested in several hospital settings.

043-0129 Halt: Assessing Patient Risk From A Distance

David Anderson, Student, Robert H. Smith School of Business, United States
Bruce Golden, Professor, Robert H. Smith School of Business, United States
Mangla Gulati, Professor, School of Medicine, United States
Ryan Scilla, Resident Physician, University of Maryland, United States
Edward Wasil, Professor, Kogod School of Business, United States

Inter-Hospital Transfer Patients tend to be the most severe and resource intensive patients in large hospitals' internal medicine units. We develop a highly accurate tool based on simple characteristics to predict whether or not a patient will require an ICU bed within 48 hours of arrival.

043-0274 Improving Environmental Services Response Times

Murray Cote, Associate Professor, Texas A&M Health Science Center, United States
Zach Robison, Process Improvement Consultant, University of Colorado Hospital, United States
John Pham, Regional Manager, Crothall Healthcare, United States
Robert Leeret, Director of Emergency Department/Trauma/Capacity Management, University of Colorado Hospital, United States

Improving environmental services response times to clean dirty inpatient beds can have a significant impact on inpatient operations and the overall patient experience. The University of Colorado applied a straight-forward and easily reproducible staffing model by looking at peak inpatient dismissal volumes and the hourly productivity of environmental services staff.

81 Friday, 03:30 PM - 05:00 PM, Salon C — *Track:* Sustainable Operations
Session: Topics on Product Recovery Operations
Chair(s): Atalay Atasu

043-0029 Design Incentives versus Cost Efficiency - A Network Perspective on Extended Producer Responsibility

Luyi Gui, Student, Georgia Institute of Technology, United States
Atalay Atasu, Assistant Professor, Georgia Institute of Technology, United States
Ozlem Ergun, Associate Professor, Georgia Institute of Technology, United States
Beril Toktay, Professor, Georgia Institute of Technology, United States

Extended Producer Responsibility (EPR) is a policy tool that stipulates the financial responsibility of producers for post-use handling of their products. In this research, we provide an analytical assessment of the potential of the widely-adopted collective EPR implementations to provide design incentives to producers via cost allocation design.

043-0040 Sales Force Compensation for Remanufactured Products

Jeremy Kovach, Student, Georgia Institute of Technology, United States
Atalay Atasu, Assistant Professor, Georgia Institute of Technology, United States
Sumitro Banerjee, Assistant Professor, ESMT, Germany

We investigate sales force management practices for firms that engage in the sales of new and remanufactured products. We analyze the optimal compensation plans and product positioning strategies under joint and separate sales channels additionally considering the effectiveness of the sales agent's efforts.

043-0414 Design for recovery or obsolescence: The effect of take-back legislation.

Ximin Huang, Student, Georgia Institute of Technology, United States
Atalay Atasu, Assistant Professor, Georgia Institute of Technology, United States
Beril Toktay, Professor, Georgia Institute of Technology, United States

We consider a monopolist who has two product design options to manage the end-of-life costs/revenues associated with its products: making products more durable or recyclable. We explore how the recyclability and durability choices are affected by the requirements of take-back legislation.

043-1171 Recycling As A Secondary Market Strategy

Isil Alev, Student, Georgia Institute of Technology, United States
Vishal Agrawal, Assistant Professor, Georgetown University, United States
Atalay Atasu, Assistant Professor, Georgia Institute of Technology, United States

We address economic and environmental implications of recycling policy requirements on firm's interference with used product markets and design choices by characterizing the effect of policy parameters on the mix of used and end-of-life products, durability choices and the stakeholder welfare, and show some potential adverse effects.

82 Friday, 03:30 PM - 05:00 PM, Salon D — *Track:* Service Operations
Session: Performance Management
Chair(s): Muge Yayla-Kullu

043-0656 A Critical Evaluation of Airline Service Quality Efficiency: Lower Costs vs. Satisfied Customers

Praowpan Tansitpong, Assistant Professor, Suny New Paltz, United States
Muge Yayla-Kullu, Assistant Professor, Rensselaer Polytechnic Institute, United States

We examine how well an airline's operating costs translate into its service quality. We focus on the success of the firm in delivering good quality tangibles, behavior of employees, and supply chain activities. We also compare the efficiency of low-cost and full-service airlines.

043-1534 Customer Service and Performance in Service Triads

Chris Anderson, Associate Professor, Cornell University, United States
Jie Zhang, Assistant Professor, University of Vermont, United States
Benjamin Lawrence, Assistant Professor, Cornell University, United States

We investigate firm performance for lodging firms where service providers contract another organization to interact with their customers. We apply agency theory to examine how organizational forms may moderate the effects of social media reputation on pricing power (ADR) and performance (RevPAR).

043-1250 Lean in Knowledge Intensive Firms: A Case Study of Lean at Nottingham Business School

Harry Barton, Professor, Nottingham Trent University, United Kingdom
Baback Yazdani, Professor, Nottingham Trent University, United Kingdom

Application of Lean to non-manufacturing operations, particularly in Knowledge Intensive Firms has had mixed results. This paper reports successes of application of Lean as the Management Operating System at Nottingham Business School (NBS).

83 Friday, 03:30 PM - 05:00 PM, Salon G — *Track:* Supply Chain Management
Session: Supply Chain Management and Sustainability
Chair(s): Ruben Lobel

043-0465 The Potential of Servicizing as Green Business Model

Vishal Agrawal, Assistant Professor, Georgetown University, United States
Ioannis Bellos, Assistant Professor, George Mason University, United States

In recent years, manufacturers in various industries have begun to orient their practices towards selling the use of the product as opposed to selling the product itself. We investigate the economic and environmental implications of the manufacturer's design and pricing decisions under different forms of servicizing business models.

043-1020 Near-optimal Execution Policies for Demand Response Contracts

Vineet Goyal, Assistant Professor, Columbia University, United States
Garud Iyengar, Professor, Columbia University, United States
Rhea Qiu, Student, Columbia University, United States

Demand-response (DR) contracts are an important instrument in managing supply-demand imbalances in the current electricity market. We present a data driven algorithm that computes a near-optimal execution policy for DR contracts. Our algorithm is based on the sample average approximation method and we also provide sample complexity bounds.

043-1484 Designing Subsidies with Industry Response Dynamics: Commitment vs. Flexibility

Ruben Lobel, Assistant Professor, University of Pennsylvania, United States
Maxime Cohen, Student, Massachusetts Institute of Technology, United States
Georgia Perakis, Professor, Massachusetts Institute of Technology, United States

Governments use consumer incentives to promote new technologies and stimulate investments from the private sector (eg. solar panels). We model the interaction between a government and an industry player in a multi-period setting under uncertain demand. We show how the timing of decisions will affect production and subsidy levels.

043-1491 The Effects of Climate Policy on Facility Location, Production, and Shipping

Ozge Islegen, Assistant Professor, Northwestern University, United States
Erica Plambeck, Professor, Stanford University, United States
Terry Taylor, Associate Professor, University of California Berkeley, United States

One region imposes either an emissions tax or a cap-and-trade system. We show how variability in the permit costs due to the cap-and-trade system affects the "leakage" of emissions, trade quantities, and social welfare in the region with climate policy under border adjustment and technology investment options.

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Friday, 03:30 PM - 05:00 PM, Salon I — *Track:* Humanitarian Operations and Crisis Management

Session: Humanitarian Logistics and Services II

Chair(s): Gyongyi Kovacs Graham Heaslip

043-1304 Improving Disaster Management Logistics Responses

Anthony Beresford, Professor, Cardiff University, United Kingdom
Stephen Pettit, Reader, Cardiff University, United Kingdom

Natural disasters are increasing in frequency, event duration and intensity. Their impact includes loss of loss of life, material destruction, financial cost and people displacement. Improvements to disaster management response are suggested by combining numerical modeling of extreme events which are infrequent, discrete and random, and a case study approach.

043-0145 Improving Civil Military Coordination in Humanitarian Supply Chains: The Challenge

Graham Heaslip, Lecturer, National University of Ireland Maynooth, Ireland
Elizabeth Barber, Lecturer, University of New South Wales, Australia

This paper investigates the humanitarian logistics needs across all phases of humanitarian aid. It investigates where and how civil-military involvement can be most effective and efficient, furthermore, it investigates the impacts of military logistical assistance to humanitarian aid.

043-1362 The potential of identification technologies in humanitarian supply chains

Sander De Leeuw, Associate Professor, Vrije Universiteit Amsterdam, Netherlands
Vahid Mirzabeiki, Student, Chalmers University of Technology, Sweden
Hella Abidi, Senior Lecturer, FOM University of Applied Sciences, Germany

Identification technology such as RFID are increasingly considered in commercial supply chains to improve efficiency and effectiveness. To date no large-scale applications are known in humanitarian environments. This paper identifies the challenges and opportunities of using identification technologies in humanitarian supply chains based on literature and an empirical study.

043-1397 Stochastic Debris Clearance Problem

Melih Celik, Student, Georgia Institute of Technology, United States
Ozlem Ergun, Associate Professor, Georgia Institute of Technology, United States
Pinar Keskinocak, Professor, Georgia Institute of Technology, United States

Stochastic debris clearance problem aims to find a clearance sequence of debris-covered roads under limited clearance capacity to satisfy relief demand efficiently. Limited information exists on debris amounts, which is updated as clearance proceeds. We derive structural results, as well as develop and test heuristic methods for this problem.

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Friday, 03:30 PM - 05:00 PM, Suites I — *Track:* Supply Chain Contracting

Session: Innovations in Teaching

Chair(s): Gal Raz Sebastian Fixson

043-1495 Innovations in Teaching

Gal Raz, Associate Professor, University of Virginia, United States
Sebastian Fixson, Associate Professor, Babson College, United States
Glen Schmidt, Associate Professor, University of Utah, United States

This session is comprised of three speakers who will each provide perspective on the topic of adapting the classroom to better fit the changing student demographics and including advances in the available technologies and tools. The aim will be to solicit and encourage discussion from the session attendees as well.

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Friday, 03:30 PM - 05:00 PM, Suites II — *Track:* Service Operations

Session: Management of Customer-Induced Uncertainty

Chair(s): Enrico Secchi

043-0272 Collaborative Decision-Making At Us Navy Military Airfields

Mike Dixon, Assistant Professor, Naval Postgraduate School, United States
Uday Apte, Professor, Naval Postgraduate School, United States
Jeremy Clark, Lieutenant commander, US Navy, United States
Chad Gerber, Lieutenant commander, US Navy, United States

The purpose of this study is to fill gaps in military aviation energy conservation research. This study suggests applying commercial frameworks to all of Naval Aviation to increase efficiency and operational effectiveness. Specific analysis includes the impact of ground resource capacity management, airfield demand analysis on F/A 18 Hornet squadrons.

043-0897 Membership-Based Loyalty Programs in Services: Operational and Marketing Implications

Rohit Verma, Professor, Cornell University, United States
Matthew Walsman, Student, Cornell University, United States
Sherri Kimes, Professor, Cornell University, United States
Mike Dixon, Assistant Professor, Naval Postgraduate School, United States

A membership-based loyalty program is an alternative to a points-based program in which a customer pays a specific annual fee to receive enhanced level of benefits and/or lower costs from the service provider. This study explores the positive and negative operational and marketing implications of membership-based loyalty programs.

043-1118 Managing Customer-Induced Variability in Service Operations: the Role of Requisite Variety

Enrico Secchi, Assistant Professor, University of Victoria, Canada
Aleda Roth, Professor, Clemson University, United States
Rohit Verma, Professor, Cornell University, United States

Building on the work of Menor, Roth, and Mason (2001), we apply Ashby's theory of requisite variety to services (Ashby 1956, 1958). We test a conceptual framework that explores customer-induced variability and the different ways to face it, using a sample of managers from the hospitality industry.

043-1145 Customer Training and Education in Service Design: Customer Contact and Training Evaluation Model Perspectives

Uzay Damali, Assistant Professor, University of Victoria, Canada
Lawrence Fredendall, Professor, Clemson University, United States
Janis Miller, Professor, Clemson University, United States

This study uses customer contact model to evaluate the impact of customer training and education (CTE) on service performance. CTE is frequently used in professional service to reduce customer failures. Our research in healthcare showed that CTE with higher levels of customer contact (media richness and trust) improved service performance.

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Friday, 03:30 PM - 05:00 PM, Suites III *Track:* Empirical Research in Operations Management
Session: Global Operations:Implications for Practices and Performance
Chair(s): Eve Rosenzweig

043-0151 Production and Operations Management Practices in Three Differentially Industrialized Regions of the World

Tobias Schoenherr, Assistant Professor, Michigan State University, United States

This paper comparatively analyzes investments in production and operations management practices in three differentially industrialized regions of the world, and hypothesizes about their differential influence on performance. Our arguments are based on the resource-based view and the theory of performance frontiers and are tested with global plant data.

043-0187 Women's Work: Gender Roles and Operations Management

Richard Metters, Professor, Texas A&M University College Station, United States

By social norm and legal code, different types of work are allowed to be done by women in different parts of the world. These mores are often neglected by Western executives - to their detriment. We examine gender roles and the effect on TQM, shift work, et al.

043-0308 National Culture and the Service-Profit Chain: A Longitudinal Study in the Hotel Industry

Eve Rosenzweig, Associate Professor, Emory University, United States
Carrie Queenan, Assistant Professor, University of South Carolina, United States
Ken Kelley, Associate Professor, University of Notre Dame, United States

We examine the role of national culture in delivering excellent service quality worldwide. Using multi-year, multi-country data from a major hotel chain, we analyze the ways in which cultural differences influence several links in the service-profit chain. Our results highlight aspects of culture to be considered in global service operations.

043-1618 Global Operations in Travel, Tourism and Hospitality Services: Trends and Research Opportunities

Rohit Verma, Professor, Cornell University, United States

Hospitality industry is increasingly becoming very complex due to globalization of organizations (both from developed and growing economies) and growth in travel by customers from around the world. Based on interviews from Sr. Executives from the hospitality industry, we will present a summary of trends and discuss emerging research opportunities.

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Friday, 03:30 PM - 05:00 PM, Suites IV *Track:* Healthcare Operations Management
Session: Practitioner Panel: Healthcare Operations and Lean Practice: What are we waiting for?
Chair(s): Linda LaGanga

043-1626 Healthcare Operations and Lean Practice Panel: What are we waiting for?

Linda LaGanga, Director of Quality Systems & Operational Excellence, Mental Health Center of Denver, United States
Craig Iverson, Lean Six Sigma Process Improvement Manager , Mental Health Center of Denver, United States
Surya Pathak, Assistant Professor, University of Washington Bothell, United States
Mario Harding, Administrative Director, Denver Health, Department of Medicine, United States

Elizabeth Lowdermilk, Physician (MD), Denver Health, United States

Our panel integrates the perspectives of healthcare providers, administrators, and researchers. We present predictive models and results of actual rapid improvement events, focusing on wait time and delays in healthcare organizations. We consider quantifiable and qualitative benefits of reducing waste and waiting time, and the value in healthcare organizations.

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Friday, 03:30 PM - 05:00 PM, Suites V — *Track:* Manufacturing Operations

Session: Contracts and Models in Manufacturing Supply Chains

Chair(s): Arnab Bisi

043-0138 System Component Bundling: Integrated and Non-integrated Models

Kunpeng Li, Assistant Professor, Sam Houston State University, United States
Dilip Chhajed, Professor, University of Illinois Urbana-Champaign, United States
Suman Mallik, Associate Professor, University of Kansas, United States

Consider a product with two components, the hardware and the software. A firm can either produce both components (integrated model) or produce only the hardware and license the software from third party (non-integrated model). We study the tradeoff between quality and variety using a duopoly model under this scenario.

043-1233 Concurrent Dual Sourcing Procurement by a Risk Sensitive Firm

Santosh Mahapatra, Associate Professor, Clarkson University, United States
Arnab Bisi, Associate Professor, Indian Institute of Management Calcutta, India
Ram Narasimhan, Professor, Michigan State University, United States
Shlomo Levental, Professor, Michigan State University, United States

We study simultaneous procurement from “contractual” and “open market” arrangements for a risk-averse firm that adopts dual sourcing strategy to purchase a standardized product. The arrangements involve deterministic and stochastic price processes, respectively. Models and insights are developed for the optimal procurement policy for both exogenous and endogenous contract prices.

043-1659 Cooperative and non-cooperative trade-offs among design, quality and cost-reducing R&D in supply chains

Victoire Denoyel, Student, Essec Business School, France
Fouad El Ouardighi, Professor, Essec Business School, France
Juan Garcia, Student, Essec Business School, France

How to allocate a firm’s resources between improving an existing product and reducing its production cost? We develop a dynamic model of manufacturer-supplier collaboration and derive the open-loop, closed-loop, and Markov perfect Nash equilibria benchmarked with the cooperative solution. Results suggest a detrimental strategic effect.

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Friday, 03:30 PM - 05:00 PM, Silverton — *Track:* Learning and Knowledge Management in OM

Session: Teaching Knowledge Management and Learning - I

Chair(s): Sergio Adelar Brun

043-0115 Teaching technical and behavioral competences in project management

Matteo Kalchschmidt, Associate Professor, Universita Degli Studi Di Bergamo, Italy
Tommaso Buganza, Associate Professor, Politecnico Di Milano, Italy
Emilio Bartezzaghi, Professor, Politecnico Di Milano, Italy

This papers evaluates the impact of teaching simultaneously and coherently technical and behavioral competences in project management. Analyses are based on an extensive training program in a multinational manufacturing and IT italian group that has involved more than 1.000 project managers in a teaching program.

043-0790 The teaching of the production management: a proposal from the theories of learning

Sergio Adelar Brun, Student, UFGD/UFSC, Brazil
Rolf Erdmann, Professor, Universidade Federal De Santa Catarina, Brazil
Mayara Teodoro de Oliveira, Student, Universidade Federal De Santa Catarina, Brazil
Antonio Vaz lopes, Student, UFGD/UNINOVE, Brazil
Airton Batistela, Associate Professor, UNIOESTE, Brazil

The teaching and learning can have specific approaches in the classroom. This study, research-action, considered learning to develop a proposal that makes teaching production management more effective. We defined the class, and so conduction elements that should that should be centered on the student, resources and content.

043-0087 Teaching OM at an Action-based Learning Program for Top Executives

Zoran Perunovic, Assistant Professor, Technical University of Denmark, Denmark
Lasse Staffensen, Program director, Technical University of Denmark, Denmark

The paper discusses design and execution of OM module in an intensive program for top executives. The participants are working as consultants in five different host companies on developing growth strategies. The OM module is designed to enable the participants to develop operations strategy that supports corporate growth strategy.

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Friday, 03:30 PM - 05:00 PM, Matchless — *Track:* Inventory Management

Session: Inventory and Pricing

Chair(s): Yang Li

043-0436 Measuring Price Expectations from Availability of Seats

Necati Tereyagoglu, Assistant Professor, Georgia Institute of Technology, United States
Senthil Veeraraghavan, Associate Professor, University of Pennsylvania, United States

Analysis of individual-level-ticket sales from a well-known orchestra reveals that the seat area choice model in which customers are assumed to respond to prices by comparing them with the corresponding expected prices based on availability of seats from prior purchases fit better than a traditional seat area choice model.

043-1158 Strategic Inventory with Stochastic Learning

Xiuli He, Assistant Professor, University of North Carolina Charlotte, United States
Tao Li, Student, Santa Clara University, United States
Suresh Sethi, Professor, University of Texas Dallas, United States

We consider a two-period supply chain in which the manufacturer has opportunity to reduce the production cost with some uncertainty due to the learning curve. The retailer may carry strategic inventory to mitigate the manufacturer's monopoly power in Period 2. We find the learning mitigates the value of strategic inventory.

043-1370 An Econometric Analysis of Black Friday Sales in Retail

Nikolay Osadchiy, Assistant Professor, Emory University, United States
Vishal Gaur, Associate Professor, Cornell University, United States

Black Friday is one of the most anticipated sales events for the US retailers. Using the state of the art non-parametric method we estimate the mix of consumers during the Black Friday, whether they postpone purchases or buy in advance, as well as their distribution of preferences over products.

95 Friday, 03:30 PM - 05:00 PM, Gold Coin — *Track:* Supply Chain Risk Management
Session: Supply Chain Risk 4
Chair(s): Riccardo Mogre

043-0335 An Inventory Routing Problem with Outsourced Transportation

Luca Bertazzi, Associate Professor, University of Brescia, Italy
Adamo Bosco, Lecturer, University of Calabria, Italy
Demetrio Laganà, Lecturer, University of Calabria, Italy

We propose exact DP, matheuristic and robust policies for an Inventory Routing Problem in which the supplier has a limited production capacity, demands of the retailers are stochastic and deliveries are performed by using outsourced transportation. The aim is to minimize the total expected cost over a time horizon.

043-1264 Setting inventory levels in an online retailing environment

Jason Acimovic, Assistant Professor, Penn State University State College, United States

In an online retailing network, if a customer's primary warehouse facility stocks out, another facility may serve that customer at an increased cost. In such an environment, we investigate how to set inventory levels that take into account this substitution/spillover effect, and the impact of replenishment/fulfillment decisions on these levels.

043-1616 Managing supply chain risks in the offshore wind industry

Federico DAmico, Lecturer, University of Hull, United Kingdom

The burgeoning offshore wind industry is globally on the rise. However, it is characterized by an uncertain supply chain environment due to its novelty, complexity and fast pace of technological development. We propose a new supply chain risk management decision support system for the offshore wind supply chain.

043-0323 Sourcing decisions under interdependent demand and supply uncertainties

Anssi Kaki, Student, Aalto University, Finland
Ahti Salo, Professor, Aalto University, Finland
Srinivas Talluri, Professor, Michigan State University, United States

We study how interdependency between demand and supply uncertainties impacts optimal sourcing decisions. Although these uncertainties have received much attention, their joint impact is much less studied. We discuss why interdependency can occur and how it is incorporated into decision models using continuous distributions or scenarios based on copula functions.

97 Friday, 03:30 PM - 05:00 PM, Molly Brown — *Track:* Marketing and Operations Management Interface
Session: Balancing trade-offs
Chair(s): Jeremy Hutchison-Krupat

043-0781 Incentives for Market Research and Product Line Design

Nektarios Oraiopoulos, Assistant Professor, Cambridge University, United Kingdom
Jochen Schlapp, Student, Mannheim Business School, Germany
Vincent Mak, Assistant Professor, Cambridge University, United Kingdom

Market research is often used to resolve uncertainty. Yet, its effectiveness is often inhibited by poor communication, particularly so, when multiple products compete for resources. In this paper, we discuss the design of appropriate incentives that improve the efficiency of market research, and the design of the firm's product line.

043-1406 Communicating strategy in a cross-functional project

Jeremy Hutchison-Krupat, Assistant Professor, University of Virginia, United States

Senior managers faces a key challenge when communicating the objectives for a cross-functional project. How can they credibly communicate the trade-offs the firm faces when the project team executing the project is aware that their objectives are misaligned? We explore this question as it pertains to the specificity of information.

043-0537 Key drivers of trial uncertainty and return probability: An empirical investigation

Guangzhi Shang, Student, University of South Carolina, United States

With the increasing amount of return and retailers' lenient return policies in recent years, it becomes imperative to understand the key drivers of consumer return rates. We address this question with a comprehensive durable goods data set. Our study contributes both to product return and close-loop supply chain literature.

043-0356 Opaque Distribution Channels for Competing Service Providers: Posted Price vs. Name-Your-Own-Price Mechanisms

Rachel Chen, Associate Professor, University of California Davis, United States
Esther Gal-Or, Professor, University of Pittsburgh, United States
Paolo Roma, Assistant Professor, Universita Degli Studi Di Palermo, Italy

Opaque selling has been widely adopted by service providers in the travel industry to sell off leftover capacity under stochastic demand. We consider a two stage model to study the impact of different selling mechanisms, Posted Price (PP) vs. Name-Your-Own-Price (NYOP), of an opaque reseller on competing service providers.

043-0564 Models for the Retail Shelf Space Optimization Problem: New Solution Approaches

Anurag Agarwal, Associate Professor, University of South Florida, United States
James Curran, Associate Professor, University of South Florida, United States

The Retail Shelf Space Optimization problem is a complex problem. We present a mathematical model of this problem and suggest new solution approaches - both heuristic and metaheuristic approaches for not only finding good solutions but to also perform sound sensitivity analyses to help the retail manager.

98

Friday, 03:30 PM - 05:00 PM, Spruce *Track:* Purchasing and Supply Management
Session: Supplier innovation and supplier involvement in R&D
Chair(s): Xenophon Koufteros

043-0426 Linking Supply Chain Partner Innovativeness to Innovation Strategy and Operational Performance

Adegoke Oke, Associate Professor, Arizona State University Tempe, United States
Daniel Prajogo, Associate Professor, Monash University, Australia
Jayanth Jayaram, Professor, University of South Carolina, United States

Our study investigates and reports the relationships between supply chain partner innovativeness, product innovation strategy and operational performance and the moderating roles of internal and external innovation climates in the relationships in a sample of manufacturing firms.

043-1048 Creating Performance Benefits by Involving Supply Chain Management Personnel in Product Innovation

Virpi Turkulainen, Assistant Professor, Aalto University, Finland
Morgan Swink, Professor, Michigan State University, United States

This study assesses performance impacts and contingencies associated with involving internal SCM personnel in innovation activities. Analysis of survey data (N=203) indicates that such involvement creates operational advantages and increases revenue growth. These advantages, however, are contingent on the organization's level of supplier integration and technology context.

043-1483 Supplier Driven Innovation

Ram Narasimhan, Professor, Michigan State University, United States

This presentation will focus on supplier driven innovation. Based on a case study of a major MNC, ideas are presented for promoting and sustaining innovation. Exploitation phase and exploration phase of innovation cycle and the role played by absorptive capacity of a firm are integrated into a research model.

043-0527 Relational resources: do they create value for both buyer and suppliers?

Priscila Miguel, Professor, Eaesp - Fgv, Brazil
Luiz Brito, Professor, Fundacao Getulio Vargas, Brazil
Manoel Reis, Professor, Eaesp - Fgv, Brazil

The study tested the relationship between relational resources and value creation and appropriation. A survey with suppliers and buyers provided evidence that interorganizational fit and knowledge sharing have impact on the relational benefit and the share captured by each organization, but also indicated that each echelon has a different perception.

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Friday, 03:30 PM - 05:00 PM, Nat Hill *Track:* Retail Operations Management
Session: Assortment Planning and Advance Selling
Chair(s): Dorothee Honhon Xiajun Pan

043-0555 Impulse Purchase Maximization via Layout-Based Retail Shelf Space Allocation

Ahmed Ghoniem, Assistant Professor, University of Massachusetts Amherst, United States
Tulay Varol, Student, University of Massachusetts Amherst, United States
Bacel Maddah, Associate Professor, American University of Beirut, Lebanon

We discuss allocating product categories to shelves based on store layouts to maximize the impulse purchase revenue. The problem is formulated as an MIP that affords exact solutions to large instances. We discuss computational results and managerial insights via a case study based on a grocery store in the Northeast.

043-1354 An optimization model for two product lines with cross-selling

Ahmed Ghoniem, Assistant Professor, University of Massachusetts Amherst, United States
Bacel Maddah, Associate Professor, American University, Lebanon
Ameera Ibrahim, Student, University of Massachusetts Amherst, United States

We develop a mixed-integer nonlinear formulation for jointly optimizing assortment, pricing, and inventory decisions for two retail product lines under asymmetric cross-selling effects. An exact solution approach is presented along with computational results and managerial insights.

043-0644 Does Advance Selling Benefit Retailers, Manufacturers, or Both?

Xuying Zhao, Assistant Professor, University of Notre Dame, United States
Pang Zhan, Assistant Professor, Lancaster University, United Kingdom

Kathryn Stecke, Professor, University of Texas Dallas, United States

We consider a supply chain with a retailer who has advance selling capability. We show having the capability of advance selling can hurt the retailer's profit, the supply chain profit, and social welfare, while always benefits the manufacturer.

043-1313 Asymmetric Assortment Choices among Competing Retailers when Consumers are Uncertain about Product Tastes

Steve Gilbert, Professor, University of Texas Austin, United States
Haoying Sun, Assistant Professor, Texas A&M University College Station, United States

For many products, some (uninformed) consumers need to experience the touch and feel in order to determine their valuations. When consumers also differ in their shopping costs, we show that heterogeneous product assortment breadth among two competing retailers can emerge as an equilibrium.

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Friday, 03:30 PM - 05:00 PM, Pomeroy *Track:* Operations Management and Economic Models
Session: Game Theory and Behavioral Models
Chair(s): Hongmin Li

043-0268 The benefit of sequentiality in social networks

Junjie Zhou, Assistant Professor, Shanghai School of Finance and Economics, China
Ying-Ju Chen, Assistant Professor, UC Berkeley, United States

This paper examines the benefit of sequentiality in the social networks. Our setting features payoff externalities and strategic complementarity amongst players. We analyze the two-stage game in which players in the leader group make contributions prior to others. We then show that any local modification towards sequential-move is beneficial.

043-0373 Dynamic Business Share Allocation in a Supply Chain with Competing Suppliers

Hongmin Li, Assistant Professor, Arizona State University Tempe, United States
Hao Zhang, Assistant Professor, University of British Columbia, Canada
Charles Fine, Professor, Massachusetts Institute of Technology, United States

We present a principal-agent formulation of a repeated game between a manufacturer and two competing suppliers with imperfect monitoring. We measure a supplier's performance with a rating equivalent to its continuation utility and solve an infinite horizon contracting problem which incentivizes supplier effort with larger allocations of future business.

043-0429 Reference points in social comparisons

Guillaume Roels, Assistant Professor, University of California Los Angeles, United States
Xuanming Su, Associate Professor, University of Pennsylvania, United States

In this paper, we study social comparisons in groups. Modeling social comparison as a game between players, we offer prescriptions as to how to set reference points and reference groups to induce a desirable equilibrium outcome.

043-0577 A Choice Model Based on Preferences

Varun Gupta, Student, University of Texas Dallas, United States
Metin Cakanyildirim, Associate Professor, University of Texas Dallas, United States

Willingness to pay (WTP) of customers for a product plays an anchoring role in determining pricing policies of a firm. We propose a WTP-based choice model, which also explicitly models preferences of a customer. Using real-life data, we compare the performance of the proposed model with the multi-choice logit model.

043-0637 Pricing Exclusivity Contracts on a Network

Changrong Deng, Student, Fuqua School of Business, United States
Sasa Pekec, Associate Professor, Fuqua School of Business, United States

We study optimal allocations and pricing of resources on a (retail) network in which information about the value of a resource is private to each network node and there is an additional value for the exclusive allocation. We use a revenue-maximizing mechanism design approach and present ascending auction implementations.

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Friday, 03:30 PM - 05:00 PM, Salon E *Track:* Sustainable Operations
Session: How to increase electric vehicle adoption and usage
Chair(s): Mustafa Dogru

043-0554 Modeling and Optimization for Electric Vehicle Charging Infrastructure

Mustafa Dogru, Member of Technical Staff (Research), Alcatel-Lucent Bell Labs, United States
Matthew Andrews, Department Head, Alcatel-Lucent Bell Labs, United States
John Hobby, Distinguished Member of Technical Staff, Alcatel-Lucent Bell Labs, United States
Yue Jin, Member of Technical Staff (Research), Alcatel-Lucent Bell Labs, Ireland
Gabriel Tucci, Member of Technical Staff (Research), Alcatel-Lucent Bell Labs, United States

We study how the electric vehicles (EVs) of today would perform in meeting the driving needs of vehicle owners, and propose an optimization model to find locations for charging stations needed to support EV usage. Chicago and Seattle metropolitan areas are selected as showcases for implementation.

043-1314 Toward Mass Adoption of Electric Vehicles: Impacts of the Range and Resale Anxieties

Michael Lim, Assistant Professor, University of Illinois Urbana-Champaign, United States
Ho-Yin Mak, Assistant Professor, Hong Kong University of Science & Tech, Hong Kong
Ying Rong, Assistant Professor, Shanghai Jiao Tong University, China

We study the impact of two major psychological barriers to mass adoption of EVs, range and resale anxieties. Using a stylized model and a case study, we compare different business models in practice and implications of consumer anxieties to the parties involved in the EV industry.

043-1430 A Vehicle Routing Problem Formulation to Improve Electric Vehicle Utilization in a Mixed Fleet

Mesut Yavuz, Associate Professor, Shenandoah University, United States

Ismail Capar, Associate Professor, Texas A&M University College Station, United States

We present an emerging vehicle routing problem with six alternative objective functions aimed to improve electric vehicle utilization in a mixed fleet. We identify special cases of the problem in which it reduces to a classical VRP. We also develop three heuristic approaches to solve the problem's general case.

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Friday, 03:30 PM - 05:00 PM, Salon F

Track: Scheduling and Logistics

Session: Transportation Models in Supply Chain Management

Chair(s): Burcu Keskin

043-0201 An Integrated Load Planning Algorithm for An Outbound Supply Chain

Ibrahim Capar, Student, University of Alabama Tuscaloosa, United States
Burcu Keskin, Assistant Professor, University of Alabama Tuscaloosa, United States
Charles Sox, Professor, University of Alabama Tuscaloosa, United States
Nickolas Freeman, Student, University of Alabama Tuscaloosa, United States

This project was aimed at developing an integrated load planning model for simultaneous optimization of the loading and routing decisions associated with an auto-parts manufacturer's outbound supply chain. The transportation modes, dynamically changing demands, limited inventory are some challenging characteristics.

043-0480 Decision Support for Attended Last-Mile Deliveries in Metropolitan Areas

Ann Campbell, Associate Professor, Management Sciences Department, United States
Jan Ehmke, Assistant Professor, Advanced Business Analytics Group, Germany

Efficient and reliable last-mile delivery is challenging for online retailers, especially in metropolitan areas where service providers face congested traffic networks and customers expect deliveries in tight delivery time windows. We develop and compare strategies that maximize profits while assessing the potential impact of a request on service quality.

043-0661 Heuristics for auto-carrier loading problem

Saravanan Venkatachalam, Student, Texas A&M University College Station, United States
Arunachalam Narayanan, Assistant Professor, University of Houston, United States
Bimal Nepal, Assistant Professor, Texas A&M University College Station, United States

Several methods are available for the vehicle routing portion of a transportation problem, but few for the loading aspect. Existing methods concentrate on the cost of loading/unloading and approximate the geometric, weight, and mechanical constraints of the vehicles. We demonstrate the application of a new heuristic which incorporates these constraints.

043-0215 Designing a Complete Lean Logistics Management System

Michael Fry, Associate Professor, University of Cincinnati, United States
Jeffrey Ohlmann, Associate Professor, University of Iowa, United States

This presentation will discuss our work with a third-party logistics provider to create a complete logistics management system that follows lean logistics principles. The logistics management system encompasses vehicle routing, frequency determination, mode choice, crossdocking and scheduling decisions using a combination of heuristic and optimization methods.

105 Friday, 05:15 PM - 06:45 PM, Salon A *Track:* Behavioral Issues in Operations Management
Session: Decision Making
Chair(s): Sebastian Schiffels

043-0147 Overutilization and Underutilization of Operating Rooms - Do Doctors Plan Wrong?

Sebastian Schiffels, Student, Technische Universitat Munchen, Germany
Andreas Fügener, Student, Technische Universitat Munchen, Germany
Rainer Kolisch, Professor, Technische Universitat Munchen, Germany

Planning surgeries is a critical task in operating room management. Operating rooms need to be utilized efficiently while overtime caused by tight schedules should be avoided. We set up an experiment with experienced surgeons and find systematic deviations from optimal decision making. The planning behavior of surgeons is not efficient.

043-1112 Hybridising Behavior Based Safety and Health & Safety Management Systems

Ian Graham, Senior Lecturer, University of Edinburgh, United Kingdom

This paper describes a two-year study of the implementation of a Behavior Based Safety System into a food processing facility. The analysis of the case shows that behavior-based approaches can be hybridised with health and safety systems based on auditable procedures.

043-1331 Allocating Constrained Service Capacity through a Multi-Item Vickery Auction – A Laboratory Experiment

Scott Sampson, Professor, Brigham Young University, United States
Matthew Walsman, Student, Cornell University, United States

We investigate a service capacity problem where human subjects often attempt to “game the system” (i.e. course registration). By adapting auction and matching theory from economics, we developed an allocation system designed to discover true preferences and reduce gaming. We then test this system through a behavioral experiment.

106 Friday, 05:15 PM - 06:45 PM, Salon B *Track:* Healthcare Operations Management
Session: Hospital Patient Flow and Capacity Management
Chair(s): Soroush Saghafian

043-0238 Managing Hospital Bed Capacity through Partitioning Care into Focused Wings

Tom Best, Student, University of Chicago, United States
Burhaneddin Sandikci, Assistant Professor, University of Chicago, United States
Don Eisenstein, Professor, University of Chicago, United States
David Meltzer, Associate Professor, University of Chicago, United States

We provide an optimization framework to support a hospital administrator, who is choosing between pooling inpatient demand and bed capacity, and forming specialized wings to focus on narrow ranges of care types. Using data from an urban teaching hospital and a national database, we report a number of managerial insights.

043-0105 Dynamic Routing of Casualties in the Aftermath of a Mass-Casualty Event

Alex Mills, Assistant Professor, Indiana University, United States
Serhan Ziya, Associate Professor, University of North Carolina, United States
Nilay Argon, Associate Professor, University of North Carolina, United States

We consider the problem of transporting a large number of casualties from areas affected by a disaster to facilities where they receive treatment. Because conditions change during the response effort, responders must make routing decisions dynamically. Using an MDP, we develop several simple heuristics; we demonstrate their effectiveness via simulation.

043-0584 A Two-time-scale Approach to Time-varying Queues for Hospital Inpatient Flow Management

Pengyi Shi, Student, Georgia Institute of Technology, United States
Jim Dai, Professor, Georgia Institute of Technology, United States

We model the patient flow from the emergency department to inpatient wards as a time-varying queue. One novel feature of the model is that each patient’s service time is endogenous and non-iid. We develop a two-time-scale approach to analyze the model and evaluate strategies such as inpatient discharge policy.

043-0498 Complexity-Based Triage System for Hospital Emergency Departments

Soroush Saghafian, Assistant Professor, Arizona State University Tempe, United States
Wallace Hopp, Professor, University of Michigan Ann Arbor, United States
Mark Van Oyen, Associate Professor, University of Michigan Ann Arbor, United States
Jeffrey Desmond, Assistant Professor, University of Michigan Ann Arbor, United States
Steven Kronick, Assistant Professor, University of Michigan Ann Arbor, United States

We propose an enhanced triage system for Emergency Departments which incorporates both patient complexity and urgency. Using a combination of analytic and simulation models calibrated with hospital data, we find that the new system improves both safety and efficiency. To gain further benefits, we next present innovative patient flow designs.

107 Friday, 05:15 PM - 06:45 PM, Salon C *Track:* Sustainable Operations
Session: How to Do Well and Do Good under Environmental Compliance Agreements
Chair(s): Arda Yenipazarli

043-0207 Impact of Emissions Control on EV Adoption and Profitability

Saravanan Kuppusamy, Student, University of Cincinnati, United States
Michael Magazine, Professor, University of Cincinnati, United States
Uday Rao, Associate Professor, University of Cincinnati, United States

We consider EV adoption in a fleet environment like Taxi Cabs and address the following questions: Can taxing emissions improve EV adoption? Can tighter cap on emissions lead to improved EV adoption? Is it possible to reduce emissions without significantly reducing the profits?

043-0416 Communicating Sustainability with Impact: The Rise of Ecolabels

Arda Yenipazarli, Assistant Professor, Georgia Southern University, United States

This research focuses on businesses considering an ecolabel endorsement or self-certification for their green brands and analyzes the market implications of ecolabeling. It addresses the question of what type of ecolabel/certification a firm should choose to provide the most value to its sustainable branding efforts.

043-0496 Cost-of-Debt Effects of Carbon Emissions and Carbon Disclosures

Rachna Prakash, Assistant Professor, Rochester Institute of Technology, United States
Ella Mae Matsumura, Professor, University of Wisconsin Madison, United States
Sandra Vera-Muñoz, Associate Professor, University of Notre Dame, United States

Correcting for self-selection in carbon disclosures, we empirically examine two questions: (1) Does the debt market value firms' voluntary disclosures of their carbon emissions?; and (2) Does the debt market impound carbon emission levels-related risk and potential claims on the firms' cash flows in the firms' cost of debt.

043-1121 External Knowledge Exchange – Environmental Performance Relationship

Iuri Gavronski, Assistant Professor, UNISINOS, Brazil

Our study investigates the relationship of external knowledge exchange to managerial performance. To avoid common method variance, we combined data from a survey in Canadian plants with data reported to the National Pollutant Release Inventory (NPRI), from the Ministry of Environment in Canada, using the multilevel model of change framework.

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Friday, 05:15 PM - 06:45 PM, Salon D — *Track:* Service Operations
Session: Queuing and Routing in Services
Chair(s): Eren Cil

043-0490 Managing Service Systems via Hidden Queues: The Role of Strategic Customer Behavior

Eren Cil, Assistant Professor, University of Oregon, United States

We consider a firm that can hide parts of its waiting lines as in some touristic attractions. We show that the firm hides its queue more aggressively when customers are aware of the queue hiding behavior. In fact, the firm may choose to hide its queue almost completely.

043-1441 A Bank Service Process Diagnostic Using a Simulation Tool

Emanuely Paskally Sousa, Student, Universidade Federal Rural do Semiárido, Brazil
David Sena, Assistant Professor, Universidade Federal Rural do Semiárido, Brazil
Rommel Benjamim, Student, Universidade Federal Rural do Semiárido, Brazil
Breno Carmo, Assistant Professor, Universidade Federal Rural do Semiárido, Brazil
Abraao Saraiva Junior, Assistant Professor, University of Sã£O Paulo, Brazil

The time waste by clients is one of the most frequent complaints at the bank services. This study aims to analyze the service process in a bank agency in Brazil using process mapping and computer simulation. In this way, it pretends to short the customers waiting time.

043-1030 Impatient customers: Blessing or curse?

Raik Stolletz, Professor, Chair of Production Management, Germany

Service systems often cope with impatient customers, which may retry again later on. For systems with time-dependent demand, retrials allow for spreading the peak-workload over the day and could stabilize the system. We present an analytical method to evaluate the tradeoff between such demand leveling and the dissatisfaction of customers.

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Friday, 05:15 PM - 06:45 PM, Salon G — *Track:* Supply Chain Management
Session: Retail Data Analytics in SCM
Chair(s): Margaret Pierson Vishal Gaur

043-1015 The Role of Retail Competition within Distribution Networks

Nicole DeHoratius, Professor, Zaragoza Logistics Center, United States
Xiang Wan, Assistant Professor, University of Tennessee Knoxville, United States

We explore how retail competition – its magnitude and type - impacts key characteristics of a distribution channel such as variety, inventory, and pricing. Using data from a US based distributor of consumer goods, we observe the level of competition within specific geographic markets and identify correlated factors.

043-1656 Stockout-Based Substitution and Inventory Planning in Textbook Retailing

Vishal Gaur, Associate Professor, Cornell University, United States
Joonkyum Lee, Student, Cornell University, United States
Suresh Muthulingam, Assistant Professor, Cornell University, United States
Gary Swisher, Officer, The Cornell Store, United States

We show results from a project for the Cornell University bookstore to develop and implement a utility-based choice model to estimate demand and plan inventory for new and used textbooks when there is stockout-based substitution, demand information is censored, and the exact time of stockout is unobserved.

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Friday, 05:15 PM - 06:45 PM, Salon H — *Track:* Supply Chain Management
Session: Supply Chain Performance and Policy
Chair(s): CIGDEM GURGUR

043-1455 Supply Chain Integration and Firm Performance: Evaluating the Nature of Enabling Capabilities

Marc Day, Professor, University of Reading, United Kingdom

Stanley Fawcett, Professor, Weber State University, United States
Gregory Magnan, Professor, Seattle University, United States

Since the relational view explicated the value of cooperative strategies, researchers have explored the link between collaboration/integration and performance. Inconclusive, mixed findings have emerged. We model SC integration as a dynamic capability and empirically evaluate its antecedents and performance impact. Integration engagement positively influences firm performance indirectly through operating performance.

043-0569 Sustainable Value Generation through Collaborative Symbiotic Networks Planning

João Amato Neto, Professor, University of Sã£O Paulo, Brazil
Cyntia Rosa, Student, University of Sã£O Paulo, Brazil
Juliano Araujo, Manager, Ernst & Young, Brazil
Raphael Pintao, Neo Solar, Neo Solar, Brazil

The paper introduces the use of externalities and sustainable value concepts as tools to amplify the spectrum of opportunities and, consequently, the potential value of Industrial Symbiosis development. Sustainable value brings up intangible value drivers such as institutional, organizational and relationship capital as well as risk management consideration.

043-1230 Analysis of production-inventory system for deteriorating items with supply shock and demand shock

Xiaoling Xu, Student, Southeast University, China
Haiyan Wang, Professor, Southeast University, China

We develop a production-inventory model for deteriorating items with supply shock and demand shock. The problem is divided into different scenarios according to the supply shock's and demand shock's time and magnitude. The purpose of this paper is to derive the optimal production run time and replenishment policy for market.

043-1581 Planning Production and Inventories with Uncertain Demand and Congestion

CIGDEM GURGUR, Associate Professor, Purdue University, United States

We develop insights into the influence of supply and demand uncertainty and ways to mitigate their effects in the context of multi-product and multi-stage systems. We introduce new stochastic integer programming models and new decomposition based approximations for solving these computationally challenging problems which involve logistical transit and para-transit operations.

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Friday, 05:15 PM - 06:45 PM, Salon I *Track:* Humanitarian Operations and Crisis Management
Session: Coordination Issues in Humanitarian Operations: Role of Information
Chair(s): Raktim Pal

043-0086 Information Integrated Supply Chain Modeling for Humanitarian Operations

Subramaniam Ponnaiyan, Student, University of North Texas, United States
Shailesh Kulkarni, Associate Professor, University of North Texas, United States
Hakan Tarakci, Assistant Professor, University of North Texas, United States

The cost of the disaster relief operations is highly uncertain. Exploring cost-effective alternative strategies are imperative to manage the impact of these events. we have formulated models, integrating disaster's information during its evolution. Analytical results and numerical analysis of these models offer insights that would help agencies make informed decisions.

043-0091 The impact of information dissemination on public's risk perception in metro emergencies

Haifeng Zhao, Associate Professor, Tongji University, China
Ping Shen, Student, Tongji University, China
Haijun Lu, Student, Tongji University, China

To study the impact of information dissemination on public's risk perception in metro emergencies, we carried out an empirical study among Shanghai Metro passengers. Though an investigation of passengers' response to the frequency, type and channel of information dissemination, we developed a Logit model measuring public response for future manipulation.

043-0083 Implications of Information Dissemination in Humanitarian Relief Efforts at Refugee Camps

Raktim Pal, Associate Professor, James Madison University, United States
Nezih Altay, Associate Professor, Depaul University, United States

Providing relevant relief information in refugee camps is critical. However, lack of reliable information and limited access hinder many camp-residents' chance of obtaining assistance. We look into these issues and explore how information flow could be improved. We also consider information policy implications for carrying out relief efforts more effectively.

043-0330 SAVEme: The Severity-Adjusted Victim Evacuation Model, Mobile Edition

Matthew Dean, Assistant Professor, University of Southern Maine, United States

A conceptual DSS that aids an incident commander by fusing disparate data sources and providing recommendations for the evacuation and allocation decisions is discussed. First responders use a smart phone application to "tag" victims. This information and updates from ambulances and hospitals is combined and fed into the SAVE model.

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Friday, 05:15 PM - 06:45 PM, Salon J *Track:* Humanitarian Operations and Crisis Management
Session: Programme Sustainability
Chair(s): Matteo Kalchschmidt

043-0114 Managing international development projects: Evidences from an international survey

Matteo Kalchschmidt, Associate Professor, Universita Degli Studi Di Bergamo, Italy
Ruggero Golini, Assistant Professor, Universita Degli Studi Di Bergamo, Italy
Paolo Landoni, Assistant Professor, Politecnico Di Milano, Italy
Matteo Falgari, Student, Universita Degli Studi Di Bergamo, Italy

This work provides the analysis of an international survey administered to almost 500 project managers working in the International Development field. The results indicate that the adoption of project management tools is an important factor to project success, both in the short and in the long term.

043-0226 Implementing proactive healthcare testing units in impoverished regions

Jack Crumbly, Assistant Professor, Tuskegee University, United States

As the Affordable Healthcare Act is in the process of providing healthcare to US citizens, the method of testing impoverished regions becomes a challenge for state and federal administrators. The research will look at the benefits, challenges and solutions for implementing proactive methods for implementing healthcare in the US.

043-1448 Sustainable Program Design for School Feeding Supply Chains: A Case-Based Analysis of Critical Factors

Andreas Kretschmer, Student, Whu - Otto Beisheim School of Management, Germany
Stefan Spinler, Professor, Whu - Otto Beisheim School of Management, Germany
Luk Van Wassenhove, Professor, INSEAD, France

Achieving a lasting impact is a key issue for humanitarian logistics interventions. In this paper we analyze school feeding supply chains to identify and validate critical factors for achieving program sustainability. Based on a theoretical framework and case research we derive hypotheses and practical insights.

043-1634 A supply chain perspective in rebuilding housing stocks after natural disasters

Rafael Diaz, Assistant Professor, Old Dominion University, United States
Joshua Behr, Associate Professor, Old Dominion University, United States

Natural disasters adversely affect housing stocks and regional capacity to produce them. Rebuilding this capacity takes time while displaced populations wait for solutions. This research presents a simulation model that considers this problem from the supply chain perspective. It characterizes production lines in which materials and employment fluctuate over time.

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Friday, 05:15 PM - 06:45 PM, Suites I — *Track:* General Track
Session: Designing an OM Course
Chair(s): Roger Schmenner

043-0027 Designing an OM Course with Swift, Even Flow at its Center

Roger Schmenner, Emeritus Professor, Indiana University Indianapolis, United States

How can you raise the stature of OM in your business curriculum? How to make OM students' favorite course? The secret revealed. Schmenner discusses how using the concept of swift, even flow as the integrating theme of the course can turn students on to the importance of operations.

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Friday, 05:15 PM - 06:45 PM, Suites II — *Track:* Service Operations
Session: Global Services
Chair(s): Spring Han

043-0182 Linkages between Operational Efficiency, Service Quality and Profitability of Foreign Banks in India

Sajeev George, Associate Professor, S P Jain Inst. of Management & Research, India
Nilanjan Chattopadhay, Associate Professor, Ghaziabad, India

This study attempts to benchmark the operational efficiency of foreign banks operating in India and also to analyze the service quality of these banks to gain insights into the gap between customer perceptions and expectations. Further, linkages between operational efficiency, service quality and profitability of these banks have been investigated.

043-0424 Globalisation of services, learning from the entertainment industry

Chris Voss, Emeritus Professor, University of Warwick, United Kingdom

When transferring a service from its home country to another, there are a many choices to be to be addressed. A study of the successful transfer of a Western musical production to China reveals that this successful transfer had to address these choices at the service product, industry and national levels.

043-0976 Determine the desired corporate culture in hotel industry

Spring Han, Assistant Professor, National Research University Higher School of Economics, Russian Federation

This study attempts to find out the influence of corporate culture on financial performance by identifying the variables that may affect the corporate culture in hotel industry in South Korea context. And, it will be analyzed differences between perceived current corporate culture and preferred corporate culture.

043-1423 Economic feasibility analysis of a Brazilian real estate venture

Cristiane Tabosa, Assistant Professor, Federal University of Ceará / Federal University of Semi-Arid, Brazil
Maxweel Rodrigues, Associate Professor, Federal University of Ceará, Brazil
Breno Carmo, Assistant Professor, Federal University of Semi-Arid, Brazil
David Sena, Assistant Professor, Federal University of Semi-Arid, Brazil
Abraao Saraiva Junior, Assistant Professor, University of Sã£O Paulo, Brazil

The paper presents a study of economic feasibility of a real estate venture from the building firm viewpoint. The paper is methodologically addressed from a literature search and a field research in order to analyze data collected about a real estate investment carried out by a Brazilian building company.

115

Friday, 05:15 PM - 06:45 PM, Suites III — *Track:* Empirical Research in Operations Management
Session: Empirical Studies in Performance Management
Chair(s): Benjamin Laker

043-0474 The investment-fit-performance triangle: The relationships between investment, strategic fit and performance

Benjamin Laker, Operations Management Consultant, John Lewin Management, United Kingdom
Alex Hill, Senior Lecturer, Kingston University London, United Kingdom

Research investigated the relationship between investment, strategic fit and performance. Research found five significant relationships within the investment-fit-performance triangle. 'Process' investment positively impacts strategic fit, whereas both 'process' and 'research and development' investment positively impact performance. Equally, strategic fit within both 'organisation structure' and the 'organisation orientation' positively impact performance.

043-1107 What distinguishes High Performance Manufacturing from the others? An Empirical Reassessment

Ely Paiva, Associate Professor, Fundacao Getulio Vargas, Brazil
Fernando Picasso, Student, Fundacao Getulio Vargas, Brazil
Cristiane Villar, Student, Fundacao Getulio Vargas, Brazil

This manuscript discusses the contemporary performance boundaries of High Performance Manufacturing comparing to the literature established on 1980's and 1990's. This global survey-based research explores current drivers of HPM. Counter-intuitively we found a minor influence of cost and location, even though we identified clear different strategies adopted at country level.

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Friday, 05:15 PM - 06:45 PM, Suites IV — *Track:* Healthcare Operations Management
Session: Teaching Healthcare Operations - Panel
Chair(s): Hari Balasubramanian

043-1623 Panel: Teaching Healthcare Operations Management

Hari Balasubramanian, Assistant Professor, University of Massachusetts Amherst, United States
Elisa Long, Assistant Professor, Yale University, United States
Amy Cohn, Associate Professor, University of Michigan Ann Arbor, United States

This interactive panel will discuss strategies to teach healthcare operations management. The panelists will touch upon aspects such as structuring syllabi; adjusting the technical details depending on the student audience (clinicians/administrators/engineers/business school students); and the necessity and difficulty of using real world datasets for pedagogical reasons.

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Friday, 05:15 PM - 06:45 PM, Suites V — *Track:* Manufacturing Operations
Session: Facility Location and Network Configuration
Chair(s): Chen Xiang

043-1297 Global Capacity Investment Strategies For Product Variants with Non-modular Processes

Bahar Biller, Associate Professor, Carnegie Mellon University, United States
Chen Xiang, Assistant Professor, Clarkson University, United States

We study the capacity investment decision of a global firm producing multiple global variants with non-modular process. The firm installs base capacity for producing the common features and customizing capacities for fulfilling market specific requirements. We investigate the structure of the optimal investment strategy and the impacts of different parameters.

043-1558 Capacity planning and warehouse location in supply chain with uncertain perishing rate in raw material supply

Shenghan Xu, Assistant Professor, University of Idaho, United States

We consider multi-period supply chain situations in which the raw material supply has an uncertain perishing rate. We propose a deterministic model for the problem when all relevant parameters are known with certainty, and discuss related computational issues. Then a robust optimization model with uncertain supply rate is introduced.

043-0302 Manufacturing footprint analysis

Petri Helo, Professor, University of Vaasa, Finland

The concept of manufacturing footprint refers to positioning of production and operation activities in terms of value chain and geographical location. Companies need to analyse and design their production network from this point of view. This paper presents a framework and set of tools for international manufacturing companies

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Friday, 05:15 PM - 06:45 PM, Suites VI — *Track:* Supply Chain Contracting
Session: Contracting in Retail Supply Chain Operations
Chair(s): Tsan-Ming Choi

043-1271 How to Make Selling Strategy Facing Strategic Customer in Heterogeneous Market

Juan Li, Associate Professor, Nanjing University, China
Xi He, Student, Nanjing University, China

This paper studies how firms make price and quantity decisions when facing strategic customer behavior in heterogeneous market. We use rational expected equilibrium to characterize strategic customer behavior, in which strategic customer can anticipate the firm's decision correctly, and study the firm's optimal price and quantity decisions.

043-1532 Analysis of return contract in fast fashion supply chains with multiple retailers

Jian Li, Professor, Beijing University of Chemical Technology, China
Tsan-Ming Choi, Associate Professor, The Hong Kong Polytechnic University, Hong Kong
Edwin Cheng, Professor, The Hong Kong Polytechnic University, Hong Kong

Motivated by the observed industrial practice on returns policy of some fast fashion brands, we conduct in this paper an analysis of return contracts for a fast fashion supply chain with dependent multi-retail demand.

043-1142 Shall Suppliers Offer Decision Support Tools to Help Fashion Buyers in Making Inventory Decisions?

Tsan-Ming Choi, Associate Professor, The Hong Kong Polytechnic University, Hong Kong
Pui-Sze Chow, Student, The Hong Kong Polytechnic University, Hong Kong

We explore a single-supplier single-buyer fashion supply chain and examine whether the supplier should offer inventory decision supporting tools to the buyer. We conduct behavioral experiments under different supply contract settings. After that, we employ the empirical data to build analytical models and derive several managerial insights.

043-0492 Supply chain coordination through wholesale price contracts in a semi-open supply chain

Juan Zhang, Student, University of Science and Technology of China, China
Qinglong Gou, Associate Professor, University of Science and Technology of China, China
Jinfeng Yue, Professor, Middle Tennessee State University, United States

We introduce a semi-open system to study the supply chain coordination issues through wholesale price contracts. Two wholesale price constraints are proposed to define the entrance thresholds of potential channel members in the open market, which are found to influence the coordination results in the closed system.

119

Friday, 05:15 PM - 06:45 PM, Silverton *Track:* Learning and Knowledge Management in OM
Session: Teaching Knowledge Management and Learning - II
Chair(s): David Weltman

043-0106 Spreadsheets to teach the (RP,Q) model in an Inventory Management Course

Carlos Castro-Zuluaga, Associate Professor, Universidad Eafit, Colombia

The use of spreadsheets to support learning processes has become a common practice used by teachers in Operations Management courses. This paper shows a predesigned spreadsheet used in an Inventory Management course to explain the model (RP, Q) using the decision rule based in the Units Service Level (USL).

043-0137 An Online Active-Learning Workshop to Introduce Quality Analysis Concepts

David Weltman, Senior Lecturer, TCU, United States

The present research places students in the role of a quality analyst. Students actively work in teams with an online simulator to gather data, analyze it, and make specific recommendations for improvements in quality. Summary statistics are gathered to gauge the effectiveness of the activity.

043-1604 Sustainability of the value chain and supply of education

Cesar Ortega, Associate Professor, Universidad Nacional Autónoma de Honduras, Honduras
Nelson Raudales Garcia, Student, Universidad Nacional Autónoma de Honduras, Honduras

Today, higher education institutions (HEI) play a role in economic and social transformation. However, there must be multidirectional flow relationships in the education system of the country, from the primary sector, and higher education. The main results will monitor the role of resources in the sector to enable efficient sustainability.

043-0850 Business game of the production management: a contribution of learning theories

Mayara Teodoro de Oliveira, Student, Universidade Federal De Santa Catarina, Brazil
Rolf Erdmann, Professor, Universidade Federal De Santa Catarina, Brazil
Sergio Adelar Brun, Student, UFGD/UFSC, Brazil

This study, applied in a class of Production Management, sought to discover how learning theories can help in the class and enhance learning using a Business Game. It was noticed that, approaching content and student reality greater interest begot, the game has become more motivating and increase learning.

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Friday, 05:15 PM - 06:45 PM, Matchless *Track:* Product Innovation and Technology Management
Session: Lean and Six Sigma Manufacturing
Chair(s): Celso Malachias

043-1243 Performance through Lean in Automotive Product Development: A Case Study

Baback Yazdani, Professor, Nottingham Trent University, United Kingdom

Lean Operating Systems are widespread in the manufacturing operations, particularly in the automotive sector. This paper reports on the results of application of Lean to Automotive Product Development and draws lessons on how to apply it in RD&T Development.

043-1345 Lean and Six Sigma approach for Manufacturing SMEs

Raghunath A, Student, Aditi Consultancy Services, India
Jayathirtha RV, Chief Executive Officer, Bulls Eye Consulting Group, India

Lean manufacturing as a production methodology aims at elimination of waste, simplification of procedures and speeding up of operations. Six Sigma, on the other hand, is a business improvement strategy which aims at drastic reduction in the number of defects occurring in manufacturing or service operations Indian small and medium component manufacturing enterprises sector needs cost effective methods and techniques to handle critical to quality and productivity problems. In this paper an attempt has been made to explain the relevance and benefits of Six Sigma and Lean Manufacturing approach to this sector.

043-1213 Are there Signs of a new S-curve at Motorola?

Celso Malachias, Student, Fundacao Getulio Vargas, Brazil
Luiz Di Serio, Professor, Fundacao Getulio Vargas, Brazil
Augusto Vianna, Student, Fundacao Getulio Vargas, Brazil
Luciano Carvalho, Student, Fundacao Getulio Vargas, Brazil
Marcos Augusto Vasconcelos, Associate Professor, Fundacao Getulio Vargas, Brazil

The innovative history of Motorola Company, characterized by its revenue along time in S-format and key factors to foster innovation, radical and incremental, apparently were not enough to avoid its acquisition by Google. However today we see again new S curve showing possible (weak?) sign that Motorola continues to innovate.

043-1245 Design Definition Model in Action the case study of Global Product Development System in Ford

Baback Yazdani, Professor, Nottingham Trent University, United Kingdom

Major improvements in Product Development performance require a system level change. This paper presents the role of Design Definition Models at Ford's implementation of a Global Product Development System and reports on its results.

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Friday, 05:15 PM - 06:45 PM, Gold Coin
Track: Supply Chain Risk Management
Session: Supply Chain Risk 5
Chair(s): Zumbul Atan

043-0140 Assessing the efficiency of risk mitigation strategies in supply chains

Srinivas Talluri, Professor, Michigan State University, United States
Thomas Kull, Assistant Professor, Arizona State University Tempe, United States
Hakan Yildiz, Assistant Professor, Michigan State University, United States
Jiho Yoon, Student, Michigan State University, United States

This paper evaluates alternative risk mitigation strategies by considering a variety of risk categories, risk sources, and supply chain configurations. We utilize a combination of efficiency models and nonparametric statistical methods in identifying effective mitigation strategies under various scenarios.

043-0212 Disruptions in One-Warehouse Multiple-Retailer Systems

Zumbul Atan, Assistant Professor, Eindhoven University of Technology, Netherlands
Larry Snyder, Associate Professor, Lehigh University, United States

We study two-echelon distribution systems subject to supply disruptions. We propose algorithms to find the optimal or near-optimal stocking levels of all the locations in the system. We show how supplydisruptions at different parts of the network affect inventory decisions and we quantify the effects of ignoring them.

043-0245 Inventory management of a high-value component with a chance credit constraint: a simulation optimization appr

Qiushi Chen, Student, Georgia Institute of Technology, United States
Lei Zhao, Associate Professor, Tsinghua University, China
Jan Fransoo, Professor, Eindhoven University of Technology, Netherlands

We study a dual-mode inventory management problem where both customer demand and transportation lead time are random. The manufacturer is subject to a chance credit constraint that bounds the total inventory. To solve the resulting chance constrained stochastic dynamic program, we develop a hybrid simulation optimization algorithm.

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Friday, 05:15 PM - 06:45 PM, Molly Brown
Track: Marketing and Operations Management Interface
Session: Advertising
Chair(s): Anurag Agarwal

043-0303 Advertising in Competing Supply Chains: Who Should Perform It? Who Should Pay?

Bin Liu, Professor, Henan Agricultural University, China
Gangshu Cai, Associate Professor, Santa Clara University, United States
Andy Tsay, Associate Professor, Santa Clara University, United States

We examine the viability of manufacturer advertising and retailer advertising in a model of two competing manufacturer-retailer supply chains who sell partially substitutable products that may differ in market size. We show that the delegation of advertising to the retailers can benefit both the manufacturers and the retailers, and others.

043-0568 Optimization Models for Scheduling Banner Ads for Multiple Web Sites

Anurag Agarwal, Associate Professor, University of South Florida, United States
Jason Deane, Assistant Professor, Virginia Polytechnic Institute And State University, United States

Revenues from online ads has been increasing at an annual rate of about 20%. Prior models focus the ad scheduling problem for a single website. In this paper we model the banner ad scheduling problem for multiple websites and discuss several solution approaches including exact, heuristic and metaheuristic approaches.

043-0460 Brand advertising with heterogeneous consumer response; channel implications

Salma Karray, Associate Professor, University of Ontario Institute of Technology, Canada

We explore the implications of heterogeneous consumer response to advertising for distribution channel firms. We solve a game theoretic model using a consumer-based utility model for a decentralized and a coordinated channel. We show that heterogeneity considerably affects the value of channel coordination.

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Friday, 05:15 PM - 06:45 PM, Spruce
Track: Purchasing and Supply Management
Session: Sustainable Sourcing and Supply Chain Management: Thought Leader Panel
Chair(s): Craig Carter

043-1642 Sustainable Sourcing and Supply Chain Management: Thought Leader Panel

Lisa Ellram, Professor, Miami University, United States
Susan Golicic, Professor, Colorado State University Fort Collins, United States
Robert Klassen, Professor, University of Western Ontario, Canada
Zhaohui Wu, Associate Professor, Oregon State University, United States

Thought leaders will share their perspectives concerning the current state of sustainable supply chain management (SSCM) research and future directions. The discussion will focus on supply management and the broader supply chain, empirical research, and opportunities to marry empirical and analytical techniques as this research stream moves forward.

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Friday, 05:15 PM - 06:45 PM, Nat Hill
Track: Retail Operations Management
Session: Retail Supply Chain Management
Chair(s): Sandra Transchel

043-0395 Competitive Newsvendors in Changing Markets

Saurabh Bansal, Assistant Professor, Penn State University University Park, United States

We study two sources of changes in markets: a) organic changes due to seasonality etc., and b) advertising. We show that the equilibrium inventory levels of competitive newsvendors and their investments in advertising change in a predictable fashion for the two changes in the markets.

043-0927 A robust optimization approach for centralized planning in retail inventory management

Eduardo Bastida Escamilla, Student, Itesm Toluca, Mexico
Adriana Gabor, Associate Professor, Erasmus University Rotterdam, Netherlands
Nishant Mishra, Assistant Professor, Rotterdam School of Management, Netherlands

We propose a novel robust optimization approach for inventory management in retail operations that not only take into account demand uncertainty at each store, but also captures behavioral aspects, such as the willingness of store managers to cooperate with each other with regards to the lateral transshipments of products.

043-1102 Multi-echelon inventory systems with lost sales

Marco Bijvank, Assistant Professor, Rotterdam School of Management, Netherlands
Tim Huh, Associate Professor, University of British Columbia, Canada
Ganesh Janakiraman, Associate Professor, University of Texas Dallas, United States

We study the problem of managing a serial inventory system under periodic review when excess demand at the most downstream stage is lost. Such systems are common in retail supply chains. We consider optimal replenishment policies and echelon order-up-to policies suggested by the algorithm of Clark and Scarf.

043-0847 Order quantity variability of demand management policies in a perishable product supply chain

Stefan Minner, Professor, Technische Universitat Munchen, Germany
Sandra Transchel, Associate Professor, Kuehne Logistics University, Germany

We analyze order variability in perishable-product supply chains wrt. customer reactions to stockouts and inventory depletion policies. The analysis reveals that perishability causes that order variability is less than demand variability (reverse bullwhip effect). We further discuss incentive conflicts between retailers and suppliers wrt. stockout control and inventory depletion policy.

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Friday, 05:15 PM - 06:45 PM, Pomeroy *Track:* Operations Management and Economic Models

Session: Incentive Schemes and Contracts in a Supply Chain

Chair(s): Paolo Letizia

043-0290 Supply Allocation to Maintain Supplier Health in Development-Intensive Supply Chains

Mericcan Usta, Student, Stanford University, United States
Feryal Erhun, Assistant Professor, Stanford University, United States
Warren Hausman, Professor, Stanford University, United States

We analyze the impact of the buyer's financial health concerns of suppliers on his supplier selection. We formulate a mathematical model where multiple suppliers compete for a divisible supply across multiple periods. Inclusion of the buyer's financial health concerns reveals dynamics that have been overlooked in the previous literature.

043-0511 Optimal Policies for Recovering the Value of Consumer Returns

Paolo Letizia, Assistant Professor, Erasmus University Rotterdam, Netherlands
Keith Crocker, Professor, Penn State University University Park, United States

We characterize the class of Pareto optimal returns policies between a manufacturer and retailer in a setting where the manufacturer may take a costly hidden action to reduce the probability of a product return, and the number of returns is hidden information known only to the retailer.

043-1275 Performance-based Contracting in the Presence of Initial Acquisition and After-sales Service

Nishant Mishra, Assistant Professor, Rotterdam School of Management, Netherlands
Dong Li, Student, Rotterdam School of Management, Netherlands

We study performance based contracting between a customer and a supplier, where equipment downtime impacts both players' revenues. The customer and supplier are profit maximizing agents, where the customer loses revenue if the equipment is not working, and where, after-sales maintenance support is an important revenue stream for the supplier.

Notes

Saturday, 08:00 AM - 09:30 AM

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Saturday, 08:00 AM - 09:30 AM, Salon A

Track: Behavioral Issues in Operations Management

Session: Supply Chain Contracting

Chair(s): Andrew Davis

043-0157 Buyback versus Revenue Sharing contracts: Influence of Loss Aversion

Yinghao Zhang, Student, University of Minnesota, United States
Karen Donohue, Associate Professor, University of Minnesota, United States
Tony Cui, Assistant Professor, University of Minnesota, United States

We investigate how suppliers set contract terms for buyback and revenue sharing contracts, and how their decisions influence profit. Using a combination of theory and lab experiments, we find that in low critical ratio, the two contracts yield similar outcome while in high critical ratio, revenue sharing outperforms buyback.

043-0216 The Holdup Problem in Supply Chains

Andrew Davis, Assistant Professor, Cornell University, United States
Stephen Leider, Assistant Professor, University of Michigan Ann Arbor, United States

We study the holdup problem in a two-stage supply chain with random demand and structured bargaining. After evaluating five different contracts structures, we find that an option contract mitigates the holdup problem through higher investment levels.

043-0310 Complexity as a Contract Design Factor: A Human-to-Human Experimental Study

Feryal Erhun, Assistant Professor, Stanford University, United States
Basak Kalkanci, Student, Massachusetts Institute of Technology, United States
Kay-Yut Chen, Principal Scientist, Hp Labs, United States

Our goal is to identify why simpler contracts may be preferred in practice using a human supplier-human buyer (H2H) experimental setting. We find that suppliers have fairness concerns even when they interact with computerized buyers and are more prone to random decision errors when interacting with

043-1573 Understanding the appeal of suboptimal contracts

Anna Devlin, Student, University of Maryland, United States
Wedad Elmaghraby, Associate Professor, University of Maryland, United States

In this research, we design an experiment to test behavioral biases driving supplier preferences for economically inferior contracts. The experiment incorporates a two period selling season during which the computerized retailer may sell items on sale. The results indicate subjects are averse to contracts that expose them retailer effort.

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Saturday, 08:00 AM - 09:30 AM, Salon B

Track: Healthcare Operations Management

Session: Healthcare Operations Management Applications

Chair(s): Thomas Rohleder

043-0547 The Happy Hospital: The Influence of Hospital Design and Nurse Staffing on Patient Satisfaction

Liam ONeill, Associate Professor, University of North Texas, United States
Vikram Tiwari, Assistant Professor, Vanderbilt University, United States
Anita Tucker, Associate Professor, Harvard University, United States

This study examines 153 Texas hospitals to determine the strategic, operational, and design characteristics that influence patient satisfaction. Safety net mission, for-profit ownership, and higher occupancy were negatively associated with patient satisfaction. Private rooms, physician ownership, and more nurses per bed were positively associated with patient satisfaction.

043-0082 An IP-based Handoff-sensitive Shift Design Method for Scheduling Critical Care Trainees

Pooyan Kazemian, Student, Univ of Michigan, United States
Yue Dong, Research Associate, Mayo Clinic, United States
Thomas Rohleder, Professor, Mayo Clinic, United States
Jonathan Helm, Assistant Professor, Indiana University, United States
Mark Van Oyen, Associate Professor, Univ of Michigan, United States

This research leverages integer programming to design an on-call schedule for ICU residents/fellows. The model minimizes the number of patient handoffs while complying with all ACGME duty-hour standards, providing required coverage, and maintaining physician quality of life. Implementation in a hospital setting is discussed.

043-1621 Optimizing Spine Surgery Scheduling

Yariv Marmor, Research Associate - Health Care Policy and Research, Mayo Clinic, United States

We discuss a case study focused on increasing patient access to spine surgeries while promoting better quality of life for surgical staff. This was done by increasing surgery time predictability, optimizing patient mix and scheduling, and building an interactive web-based scheduling application.

043-1594 Redesigning Primary Care: An Application of System Dynamics

Thomas Rohleder, Professor, Mayo Clinic, United States

New models of primary care that emphasize fewer traditional physician office visits and instead utilize care teams and technology are the future. Planning human resources for this changing environment requires new methods. We will discuss the use of a systems dynamic model being used to inform decisions at Mayo Clinic.

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Saturday, 08:00 AM - 09:30 AM, Salon C *Track:* Sustainable Operations

Session: Managing Supply Chain Sustainability across Lifecycle Stages

Chair(s): Gal Raz

043-0276 The Impact of Environmental Taxes on DFE Innovations

Gal Raz, Associate Professor, University of Virginia, United States
Cheryl Druehl, Assistant Professor, George Mason University, United States
Vered Blass, Lecturer, Tel Aviv University, Israel

In this paper, we consider the impact of an environmental tax on the production and use lifecycle stages for a firm deciding on environmental innovations in product and process design that can affect the product's cost and demand, as well as the environmental impact in different stages of its lifecycle.

043-0084 Replacement of a Substance of Concern in a Two-Stage Supply Chain

Tim Kraft, Assistant Professor, University of Virginia, United States
Gal Raz, Associate Professor, University of Virginia, United States

In this paper we analyze how a supplier can influence the adoption of a replacement for a substance of concern. We consider the impact of the existing regulatory threat, market sensitivity, and supplier price. As an extension we consider a scenario where firms can collaborate to replace the substance.

043-0406 Got Local Food? Understanding the Fresh Produce Supply Chain

Baris Ata, Associate Professor, Northwestern University, United States
Deishin Lee, Assistant Professor, Harvard University, United States
Mustafa Tongarlak, Assistant Professor, Bogazici University, Turkey

This paper studies which operational characteristics of the fresh produce supply chain help or hinder the viability of local food. We examine three mechanisms that can improve conditions for the local farm: coordination, backhauling, and a retail order policy for supporting local farms.

043-0694 Extended Producer Responsibility (EPR) for Pharmaceuticals

Isil Alev, Student, Georgia Institute of Technology, United States
Atalay Atasu, Assistant Professor, Georgia Institute of Technology, United States
Ozlem Ergun, Associate Professor, Georgia Institute of Technology, United States
Beril Toktay, Professor, Georgia Institute of Technology, United States

EPR concept is gaining popularity in the context of managing the pharmaceutical overage due to increased environmental and economic concerns. In our work, we investigate the effectiveness of various EPR policies in improving stakeholder welfare by a game-theoretic model focusing on the interactions between manufacturers, insurance companies, physicians and patients.

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Saturday, 08:00 AM - 09:30 AM, Salon D *Track:* Sustainable Operations

Session: Environmental innovation and financial returns

Chair(s): Maria Alvarez Gil

043-0451 Systemic Social Balance Sheet in a Brazilian Biodiesel Producer Company

Luis Rodrigues, Professor, GMAP | UNISINOS, Brazil
Secundino Corcini Neto, Assistant Professor, GMAP | UNISINOS, Brazil
Marília Rodrigues, Student, GMAP | UNISINOS, Brazil
Daniel Lacerda, Professor, GMAP | UNISINOS, Brazil
Maria Isabel Morandi, Assistant Professor, GMAP | UNISINOS, Brazil

The search for renewable energies has focused in the reduction of environmental impacts. The Brazilian Programme of Biofuels (BPB) adds a social variable to the equation. The Systemic Social Balance Sheet demonstrates social and economic returns of this programme through the systemic relations deriving from a company's investments and operations.

043-0992 Value Creation and Sustainable Palm Oil in Brazil

Renata Silva, Student, Fundacao Getulio Vargas, Brazil
Julio Almeida, Student, Fundacao Getulio Vargas, Brazil
Luiz Di Serio, Professor, Fundacao Getulio Vargas, Brazil

The purpose is to analyze sustainable value creation initiatives in companies producing palm oil in Brazil. A qualitative approach was conducted. As a result, programs of family farming, production processes with utilization of waste and clean energy were found. However, initiatives need to be addressed in order to reach sustainability.

043-1295 Assessing Sustainable Environmental Innovations in the Civil Aviation Industry of Emerging Markets

Maria Alvarez Gil, Professor, Universidad Carlos III de Madrid, Spain, Spain
Wei Yan, Assistant Professor, Universidad Carlos III de Madrid, Spain

This paper analyses the case of the airline companies' environmental innovations on airlines' financial results and customers' willingness to pay in the emerging markets scenario. Environmental innovations are classified into technology and market based innovations. It has been found that both types of innovations positively relate to airlines' financial performance

043-1508 FINANCIAL NETWORKS WITH SOCIALLY RESPONSIBLE INVESTING

Qiang Qiang, Assistant Professor, Penn State University Great Valley, United States
Ke Ke, Associate Professor, Central Washington University, United States
Yihong Hu, Assistant Professor, Tongji University, China

A model is developed for analyzing and computing the solutions to multitiered financial network problems. The decision-makers in various tiers seek to maximize their net revenues and to minimize risks. The intermediaries are socially responsible companies, who want to maximize their social responsibility levels. The network equilibrium conditions are shown.

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Saturday, 08:00 AM - 09:30 AM, Salon H — *Track:* Supply Chain Management

Session: Managing Supply Chain Performance I

Chair(s): Shanshan Hu

043-0604 Manufacturer-Distributor Relationships and the Influence over Performance

Emir Redaelli, Lecturer, UNISINOS, Brazil
Ely Paiva, Associate Professor, Fundacao Getulio Vargas, Brazil
Rafael Teixeira, Associate Professor, UNISINOS, Brazil

This study analyzes the influence of integration between manufacturer and distributor over performance. Integration includes quality activities, visits, and T&D. We carried out a survey in the transport equipment industry and obtained 205 responses. Results show that when integration between manufacturing and distributors is higher, operational and business performance increase.

043-1488 Investing in Supplier Capacity: Cost-sharing Mechanisms and Experimental Tests

Shanshan Hu, Assistant Professor, Indiana University Bloomington, United States
Zhixi Wan, Assistant Professor, University of Illinois Urbana-Champaign, United States
Qing Ye, Assistant Professor, Tsinghua University, China
Wei Chi, Associate Professor, Tsinghua University, China

Taking a buyer's perspective, we investigate if simple cost-sharing mechanisms can induce capacity investment from competing suppliers. We show that linear-sharing mechanism can achieve this goal but reduces the buyer's profit, and this short-coming can be overcome by a modified target-sharing mechanism. Experiment studies confirm our theoretical predictions.

043-0782 The adoption of eCommerce in the fashion industry

Antonella Moretto, Student, Politecnico Di Milano, Italy
Laura Macchion, Student, Universita Degli Studi Di Padova, Italy
Federico Caniato, Associate Professor, Politecnico Di Milano, Italy
Maria Caridi, Associate Professor, Politecnico Di Milano, Italy
Pamela Danese, Assistant Professor, Universita Degli Studi Di Padova, Italy
Gianluca Spina, Professor, Politecnico Di Milano, Italy
Andrea Vinelli, Professor, Universita Di Padova, Italy

The adoption of eCommerce could be a great opportunity for fashion companies to develop new market and direct contacts with consumers. This survey-based research provides insights on how fashion companies use the eCommerce tool to improve operational and economical performance and better serve global markets.

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Saturday, 08:00 AM - 09:30 AM, Salon I — *Track:* Humanitarian Operations and Crisis Management

Session: Emerging Issues in Humanitarian and Disaster Relief Supply Chain Management

Chair(s): Kate Hughes

043-1434 Emerging Issues in Humanitarian and Disaster Relief Supply Chain Management (HDRSCM)

Steve Melnyk, Professor, Michigan State University, United States
Edward Davis, Professor, The University of Virginia, United States
W. Whybark, Professor, University of North Carolina Chapel Hill, United States
Jamison Day, Assistant Professor, Louisiana State University, United States

The presenters were authors of a 2012 article ("Humanitarian and Disaster Relief Supply Chains: A Matter of Life and Death"; JSCM) that summarized research needs in this area. This session will cover new additional research issues, including system interoperability, donor demands/expectations, behavioral aspects of scheduling, and quick response strategies.

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Saturday, 08:00 AM - 09:30 AM, Salon J — *Track:* Humanitarian Operations and Crisis Management

Session: Sustainability of Humanitarian Supply Chains

Chair(s): Sarah Schiffling

043-0654 Can Humanitarian Supply Chains Be Sustainable?

Nezih Altay, Associate Professor, Depaul University, United States
Kanwalroop Dhanda, Associate Professor, Depaul University, United States

In this conceptual paper, we analyze the interplay between sustainability theory and humanitarian supply chains. Furthermore, the paper will explore the various frameworks of sustainability strategies and their applicability to humanitarian supply chains. We hope that this paper will provide research avenues for researchers in both these areas.

043-0160 Sustainable humanitarian supply chain management – exploring new theory

Nathan Kunz, Student, Universite De Neuchatel, Switzerland
Stefan Gold, Lecturer, Universite De Neuchatel, Switzerland
Gerald Reiner, Professor, Universite De Neuchatel, Switzerland

We propose a framework of sustainable humanitarian supply chain management (SCM) for the rehabilitation phase of disasters. Our framework connects enablers, features and triple bottom line performance of SCM with specific socio-economic/governmental contingency factors. Findings from multiple case studies in Chad provide initial evidence for illustrating and underpinning the framework.

043-0304 Relief aid, yes, but…

Nathan Kunz, Student, Universite De Neuchatel, Switzerland
Gerald Reiner, Professor, Universite De Neuchatel, Switzerland

Empirical evidence shows that some governments increasingly hinder relief organizations from operating in their territory. Through a case study, we analyze problems encountered by four organizations. We find that state fragility explains the tendency of governments to restrict relief organizations' activities. This study helps organizations in their efforts towards preparedness.

139 Saturday, 08:00 AM - 09:30 AM, Suites I — *Track:* Supply Chain Contracting

Session: Sourcing and supply chain management

Chair(s): Cuihong Li

043-0168 Managing Product Adulteration with Deferred Payment and Inspection: Procurement Quantity and Lead Time

Huaxia Rui, Assistant Professor, University of Rochester, Afghanistan
Qi Feng, Associate Professor, Purdue University, United States
Guoming Lai, Assistant Professor, University of Texas Austin, United States

We explore the effects of the procurement quantity and lead time on the deferred payment and inspection mechanisms for deterring product adulteration. We characterize the optimal design and show that deferred payment is more effective when procurement quantity is small and lead time is short.

043-0209 Contracting with Procurement Service Provider

Zhixi Wan, Assistant Professor, University of Illinois Urbana-Champaign, United States
Sripad Devalkar, Assistant Professor, Indian School of Business, India

Procurement service providers (PSP) are widely used by companies in global sourcing. We study the contracting problem of a buyer who uses a PSP to find qualified suppliers. We show that the optimal contract can take the form of either a fixed commission, a transaction bonus, or a cost-sharing bonus.

043-0264 Competitive Outsourcing: Choosing a Key Component Manufacturer or a Superior Quality Manufacturer?

Yen-Ting Lin, Assistant Professor, Univ of San Diego, United States
Ying-Ju Chen, Assistant Professor, Univ of California at Berkeley, United States

This paper examines two competing vendors' selection of contract manufacturers: one manufacturer is endowed with the key component supplying capability while the other manufacturer provides superior quality. Each vendor may select a different contract manufacturer, and the manufacturer with the key component capability may willingly give away the patent protection.

043-0482 Supply base optimization with supplier competition and improvement effort

Cuihong Li, Associate Professor, University of Connecticut Storrs, United States

We consider a buyer sourcing from a number of suppliers. The suppliers invest in cost reduction before they compete for the contract based their costs. We analyze when supplier competition encourages or discourages the cost-reduction efforts and the optimal design of the supply base for the buyer.

043-0195 The Roles of Bank and Trade Credits: Theoretical Analysis and Empirical Evidence

Gangshu Cai, Associate Professor, Santa Clara University, United States
Xiangfeng Chen, Associate Professor, Fudan University, China
Zhiguo Xiao, Associate Professor, Fudan University, China

This paper investigates the roles of bank and trade credits in a supply chain with a capital constrained retailer facing demand uncertainty. We evaluate the retailer's optimal order quantity and the creditors' optimal credit limits and interest rates in two scenarios and empirically validate the prediction.

140 Saturday, 08:00 AM - 09:30 AM, Suites II — *Track:* Production Planning and Scheduling

Session: Production planning and scheduling in the steel industry

Chair(s): Matthias Wichmann Thomas Spengler

043-0149 Production scheduling at continuous casters using a genetic algorithm

Matthias Wichmann, Assistant Professor, Technische Universitat Braunschweig, Germany
Thomas Spengler, Professor, Technische Universitat Braunschweig, Germany

We propose a genetic algorithm for the problem of scheduling slabs at continuous casters. The most special feature is the handling of the problems' characteristics such as lot-sizes and casting width in all operators. Problems of real-world-size can be solved with less than 20% gap to a tight lower bound.

043-0242 Production and logistics scheduling with batching in steel industry

Lixin Tang, Professor, The Logistics Institute at Northeastern University of China, China

In this talk, we will address the three problems in operations management in the steel industry: the batching decision problems, production scheduling with batching, logistics scheduling with batching we have been working on. Finally, some on- going interesting topics on the production and logistics scheduling are discussed.

043-0599 Scheduling in a steelmaking-continuous casting plant using dynamic programming and fluid relaxation

Hubert Missbauer, Professor, University of Innsbruck, Austria
Christina Stampfer, Student, University of Innsbruck, Austria
Reinhard Krappinger, Lecturer, University of Innsbruck, Austria

The presentation is based on a scheduling system for steelmaking- continuous casting (SM-CC) implemented in an Austrian steel plant. We present an iterative DP - fluid relaxation method that determines the timing of the casting operations and generate SM-CC schedules from the fluid solution. Numerical tests are performed using industrial data.

141 Saturday, 08:00 AM - 09:30 AM, Suites III — *Track:* Empirical Research in Operations Management

Session: Empirical Studies in Inventory Management

Chair(s): CHERRY SINGHAL

043-0136 The Inverse Hockey Stick Effect: An empirical investigation of the fiscal calendar's impact on firm inventor

Kai Hoberg, Associate Professor, Kuehne Logistics University, Germany

We find empirical evidence that inventory dynamics in manufacturing firms are frequently driven by the artificial accounting construct of the fiscal year. We observe significant inventory reductions that are not related to sales timing which are particularly accentuated for firms in financial distress or with incentives to beat financial targets.

043-0357 Inventory Dynamics and Long-Term Stock Returns

Sebastian Steinker, Student, Kuehne Logistics University, Germany
Kai Hoberg, Associate Professor, Kuehne Logistics University, Germany

This paper investigates the relationship between inventory dynamics and long-term stock returns for a large panel of U.S. manufacturing companies over the period 1991-2010. We propose two measures of inventory dynamics which are both associated with stock returns. Results do not seem to be explained by common risk factors.

043-1012 Mediation Analysis in Operations Management Research: Alternative Methods and Paradigms

CHERRY SINGHAL, Student, University of South Carolina, United States
Guangzhi Shang, Student, University of South Carolina, United States
Manoj Malhotra, Professor, University of South Carolina, United States
Robert Ployhart, Professor, University of South Carolina, United States

This paper reviews studies from top five OM journals that tested for mediation in the period 2002-2012. Based on principles of good theory building, mediation model type, and properties of empirical data, we evaluate the existing methodologies and make respective recommendations on how to improve the rigor of mediation testing.

043-1174 Reconfiguration of the production levels through world's economy changes

Mario Acevedo, Student, Universidad Nacional Autónoma de Honduras, Honduras
Cesar Ortega, Associate Professor, Universidad Nacional Autónoma de Honduras, Honduras

For the manufacturers, the production is everything. Actually, the rate of production is calculated from baseline of future sales. However, the market volatility, decrease the sales and increasing the inventory cost. Hence, we propose analysis this issue, through a planning production models that considers the economy changes like a rate.

043-1319 A framework for risk assessment on lean production implementation processes

Giuliano Marodin, Student, Universidade Federal Do Rio Grande Do Sul, Brazil
Tarcísio Saurin, Professor, Universidade Federal Do Rio Grande Do Sul, Brazil

We propose a framework for risk assessment on lean production implementation processes. The framework uses the Sociotechnical systems theory for a broader context analysis and the Interpretative Structural Model for an in-depth investigation of the risks influences and drivers. A case study was used to illustrate and assess the framework.

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Saturday, 08:00 AM - 09:30 AM, Suites IV — *Track:* Healthcare Operations Management
Session: Scheduling for Operating Rooms and Outpatients
Chair(s): Drew Stapleton

043-0729 Provider's Wait-Preempt Dilemma

Subhamoy Ganguly, Student, University of Colorado Boulder, United States
Michele Samorani, Assistant Professor, University of Alberta, Canada

When a patient with a later appointment shows up early and the provider is idle, the provider faces a dilemma: whether to wait for the patient scheduled next, or to preempt. Using an analytic approach that considers clinic-overtime and patient wait-times, we suggest guidelines for resolving the dilemma.

043-0063 Impact of Changing Patient Punctuality in Specialty Outpatient Clinics

Chester Chambers, Assistant Professor, Johns Hopkins University, United States

This work reports results from a natural experiment in which a clinic director enforced a lateness policy for the purpose of changing patient behavior. Data are collected over twelve month period to track changes in distribution of patient un-punctuality. Simulation is used to project impact in similar settings.

043-0680 A Scenario-Based Approach for Operating Theater Scheduling Under Uncertainty

Nickolas Freeman, Student, University of Alabama Tuscaloosa, United States
Sharif Melouk, Assistant Professor, University of Alabama Tuscaloosa, United States
John Mittenthal, Professor, University of Alabama Tuscaloosa, United States

We consider allocation and sequencing elective surgical procedures to operating rooms with duration uncertainty while maintaining flexibility to service urgent procedures. We use a two-step MIP-based solution approach to minimize the weighted sum of deviations of actual surgical start times from their planned start times.

043-1149 Maximizing Operating Room Turnover Efficiency via Process Mapping and Critical Path Modeling

Drew Stapleton, Professor, University of Wisconsin, United States
Nada Ghandour, Surgeon, University of Wisconsin La Grosse, United States

Process Mapping was applied to identify opportunities for reducing OR turnover times at Gundersen-Lutheran Hospital Systems in Wisconsin. Key analytics and metrics were identified through this process analysis. Critical Path Modeling was applied next. Simultaneities were identified and elucidated. Lastly, greater efficiencies were realized by shortening activities along the CP.

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Saturday, 08:00 AM - 09:30 AM, Suites V — *Track:* Manufacturing Operations
Session: Integrated Manufacturing Operations
Chair(s): Andre Calmon

043-1247 Reverse Logistics at a Large Consumer Electronics Retailer

Andre Calmon, Student, Massachusetts Institute of Technology, United States
Stephen Graves, Professor, Massachusetts Institute of Technology, United States

We describe, model and optimize the reverse logistics of our industrial partner, a Fortune 500 company that sells consumer electronics. We introduce a strategy for return distribution estimation, a policy for managing inventory, and an algorithm for warranty matching. The results will be illustrated through examples using real-world data.

043-0224 Optimal Dynamic Order/Production and Assembly Policy in a Periodic Review Stochastic Nested Inventory/Producti

Lei Xie , Assistant Professor, Shanghai Jiao Tong University, China
Youyi Feng, Professor, Zaragoza Logistics Center, Spain

In this paper, we study a nested assemble-to-order system that makes n products out of n components. Each component is replenished through production or ordering with a positive leadtime while the assembly times of the products are negligible. Demand uncertainty is taken into account and unsatisfied demand is backlogged.

043-0380 Investigating Strategic Customer Behavior through an Interactive Supply Chain Game

Pelin Pekgun, Assistant Professor, University of South Carolina, United States
Pinar Keskinocak, Professor, Georgia Institute of Technology, United States
Mani Janakiram, Director, Supply Chain Strategy, Intel Corporation, United States
Tosanwunmi Maku, Senior Operations Research Engineer, Intel Corporation, United States

We investigate the strategic forecasting and ordering behavior of customers through an interactive supply chain game. We discuss the effectiveness of different inventory allocation mechanisms in reducing forecast inflation based on our insights gained from experiments conducted on over 200 human subjects.

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Saturday, 08:00 AM - 09:30 AM, Suites VI — *Track:* Product Innovation and Technology Management
Session: Entrepreneurship and Competition
Chair(s): Refik Gullu

043-0837 Competition in Innovation under Revenue and Technology Uncertainty

Refik Gullu, Professor, Bogazici University, Turkey
Taner Bilgic, Professor, Bogazici University, Turkey

We analyze the investment decision on innovative products or services under revenue and technology uncertainty in a duopoly market. Time of successful innovation is random, depending on investment and firm's efficiency. Revenue rates are subject to market shocks. We show the existence of Nash equilibrium and provide comparative static analysis.

043-0057 Innovate with a Focus on Customer-Perceived Value: A differentiated strategy for facing the competition

Carolina Fernandes, Student, Universidade Federal De Juiz De Fora, Brazil
Luiz Alves, Professor, Universidade Federal De Juiz De Fora, Brazil

The product and services innovation process oriented toward customer-perceived value is presented, as developed in a small company in the Brazilian automotive sector. Marked improvement in its operating and financial performance, as well as in its quality and customer relationships, was seen in the results of this work.

043-1251 Teaching engineering-based new product innovation and entrepreneurship to engineers and business professionals

Paul Swamidass, Professor, Director, Thomas Walter Center for Technology Management, United States

Business and engineering students at Auburn University learn new product development and startup business plan development jointly in an established program. Using the author's new book on the subject of Technology Entrepreneurship, this session gives a total blueprint to teachers interested in teaching technology entrepreneurship to engineering and business students/professionals.

043-0539 A System Dynamics Model for Intellectual Property Management System

Karuna Jain, Professor, Indian Institute of Technology Bombay, India
Mukundan R, Student, Indian Institute of Technology Bombay, India

In this work, we present a systems model of an Intellectual Property Management System (IPMS) for a firm that enables us to capture the dynamic relationships and understand the role of IPMS in leveraging technological innovations.

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Saturday, 08:00 AM - 09:30 AM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: Industry Studies, Public Policy and Organizational Learning
Chair(s): John Gray

043-1661 Panel on Industry Studies, Public Policy, and Organizational Learning

John Gray, Assistant Professor, Ohio State University, United States
Geoffrey Parker, Professor, Tulane University, United States
Nitin Joglekar, Associate Professor, Boston University, United States
Edward Anderson, Associate Professor, University of Texas Austin, United States

This panel discussion will address research and managerial opportunities at the intersection of public policy and operational decision making from an organizational learning perspective. This will be followed by an interactive discussion of underlying issues for industry studies and public policy work in broader POM settings.

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Saturday, 08:00 AM - 09:30 AM, Matchless — *Track:* Inventory Management
Session: Inventory Management for Rental Systems
Chair(s): Bahar Biller Vincent Slaugh

043-1632 Luxury Yacht Rentals – How to Forecast Demand and Optimize Prices?

Pelin Pekgun, Assistant Professor, University of South Carolina, United States
Ronald Menich, Chief Scientist, JDA Software Group, United States

Luxury yacht rentals is a niche market, where traditional forecasting approaches do not work due to data sparsity, while pricing becomes difficult with hard-to-identify price elasticity from customers that already pay high prices. We present a forecasting and optimization framework that can address the unique challenges in this environment.

043-0548 Inventory and Shipment Policies for the Online Movie DVD Rental Industry

Kyung Sung Jung, Student, University of Texas Dallas, United States
Casey Chung, Director WFC , Gap Inc., United States
Shun-Chen Niu, Professor, University of Texas Dallas, United States
Chelliah Sriskandarajah, Professor, Texas A&M University College Station, United States

We model the subscriber demand for new DVD releases based on data from Blockbuster. This demand formulation is used to develop an optimization model for determining jointly the initial order size and shipment sizes for each period. Then we propose a potentially optimal shipment policy for subscriber demand.

043-1281 An Inventory Theoretic Approach to Rental Systems

Vincent Slaugh, Student, Carnegie Mellon University, United States
Bahar Biller, Associate Professor, Carnegie Mellon University, United States
Sridhar Tayur, Professor, Carnegie Mellon University, United States

We present a discrete-time inventory model for rental systems with lost sales, and show the convexity of the expected number of lost sales in the initial inventory level. A closed-form approximation of the optimal solution, convexity results for a model with rental unit losses, and numerical results are also given.

043-0433 Intermodal Transportation Empty Container Management with Contracts

Yangyang Xie, Student, Tsinghua University, China
Houmin Yan, Professor, City University of Hong Kong, China

We study the empty container inventory management for the intermodal transportation between a seaport and a dry port. We first derive optimal delivery and replenishment strategies, then discuss the coordination conditions in a decentralized model and lastly consider the design of the network between one seaport and multiple dry ports.

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Saturday, 08:00 AM - 09:30 AM, Gold Coin *Track:* Supply Chain Risk Management
Session: Supply Chain Risk 6
Chair(s): Tao Li

043-0697 A Two-Period Pricing Model for Fashion and Textiles Supply Chain Considering Reference Price Effect

Juzhi Zhang, Student, University of Science & Technology of China, China
Qinglong Gou, Associate Professor, University of Science & Technology of China, China
Liang Liang, Professor, University of Science & Technology of China, China
Xiaohang Yue, Associate Professor, University of Wisconsin-Milwaukee, United States

This paper proposes a two-period pricing model for a Fashion and Textiles (FT) supply chain considering reference price effect. We derive the optimal decisions of the channel members in three different scenarios and investigate the impacts of reference price and quick response on channel member's price decisions and profits.

043-1473 Are responsive pricing and supply diversification substitutes in hedging supply risk?

Tao Li, Assistant Professor, Santa Clara University, United States
Suresh Sethi, Professor, University of Texas Dallas, United States
Jun Zhang, Assistant Professor, University of Texas Dallas, United States

Both responsive pricing and supply diversification can help the firm effectively mitigate supply risk. It seems intuitive that these two mechanisms are substitutes in hedging supply risk. We show that, contrary to intuition, they are complements in certain cases. The implications are also analyzed.

043-1496 Push, Pull and Supply Chain Risk Attitude

Lei Yang, Associate Professor, South China University of Technology, China
Jian Chen, Professor, Tsinghua University, China
Gangshu Cai, Associate Professor, Santa Clara University, United States

This paper considers a one-supplier-one-retailer supply chain where the agents' risk preferences are arbitrary which can be risk averse or neutral or seeking. Each agent's performance is measured by an objective function which is a mean-risk measure. Under several supply chain structures, each agent's performances are compared.

043-0319 Inventory Financing and Trade Credit

Qi Wu, Student, University of Texas Austin, United States
Sridhar Seshadri, Professor, University of Texas Austin, United States
Kumar Muthuraman, Associate Professor, University of Texas Austin, United States

In this talk, we present a model of trade credit, embedded in a stochastic inventory control problem. We compute the optimal joint inventory, cash management and trade credit decisions, based on which, we show that trade credit helps with smoothing cash flows and making better operational decisions.

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Saturday, 08:00 AM - 09:30 AM, Mattie Silks *Track:* Service Operations
Session: Service Operations Analysis - training students for success in the service economy
Chair(s): Scott Sampson

043-1669 Tutorial on Service Operations Analysis

Scott Sampson, Professor, Brigham Young University, United States

This session will discuss an important new SOM tool known as PCN Analysis. The PCN Analysis tool enables students to document service operations, uncover system deficiencies, identify strategic improvements, and systematically explore innovation opportunities. Recent experience has shown that students love PCN Analysis, and find it intuitive and insightful.

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Saturday, 08:00 AM - 09:30 AM, Molly Brown *Track:* Marketing and Operations Management Interface
Session: Operations Management in the Presence of Differentiated Products
Chair(s): Goker Aydin

043-0078 Store Brands: Information Sharing and Dynamic Trade Relationships

Saibal Ray, Associate Professor, Mcgill University, Canada
Arcan Nalca, Assistant Professor, Queens University, Canada
Tamer Boyaci, Associate Professor, Mcgill University, Canada

In this paper we investigate how the information sharing (about customer taste) and store brand introduction strategies of a retailer affects its dynamic trade relationship with the manufacturer in presence of both vertical and horizontal product differentiations.

043-0479 Consumer Preferences for Seller and Product-Specific Attributes of New and Remanufactured Products

Necati Tereyagoglu, Assistant Professor, Georgia Institute of Technology, United States
Ravi Subramanian, Associate Professor, Georgia Institute of Technology, United States

Using field data on listings of products offered for sale, we examine how seller and product specific attributes influence the likelihood of new, remanufactured, and used product being purchased by buyers.

043-0652 Impact of product differentiation on the outcomes of collaborative sourcing

Muge Yayla-Kullu, Assistant Professor, Rensselaer Polytechnic Institute, United States

We discuss whether supply chain alliances benefit all firms or not. We take heterogeneity of the customer base into account. When the products of firms are differentiated, we find that joint consideration of sourcing, pricing, and demand generation objectives may result in outcomes that were not identified in previous literature.

043-1478 Revisiting three mixed up concepts: Decoupling Point, Mass Customization and Postponement

Soroosh (Sam) Saghiri, Lecturer, Cranfield University, United Kingdom

Decoupling Point, Mass Customization, and Postponement are three related concepts in operations management, which have been widely studied and employed. Re-visiting these three concepts, this research discusses how different they are in theory and practice, how their concepts have been mistakenly mixed up, and how they can support each other.

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Saturday, 08:00 AM - 09:30 AM, Spruce *Track:* Purchasing and Supply Management
Session: Supplier Reliability
Chair(s): Haresh Gurnani Yu Tang

043-0113 Outsourcing for power disruption

Ruoxuan Wang, Student, University of Florida, United States
Janice Carrillo, Associate Professor, University of Florida, United States

In the event of a large scale power disruption, many manufacturers are now outsourcing to a third party supplier. We model different types of contracts between a manufacturer and a supplier in the event of a disruption utilizing options contracts and game theory methodologies.

043-0471 Informative Product Demonstrations and Prices

Raphael Boleslavsky, Assistant Professor, University of Miami, United States
Chris Cotton, Assistant Professor, University of Miami, United States
Haresh Gurnani, Professor, University of Miami, United States

Firms use product demonstrations to educate prospective consumers about product valuation. While more informative demonstrations reduce valuation risk, it may reduce competition and make consumers worse off. This has important implications for firm profits, consumer protection, and for better understanding the release of “niche” products with uncertain customer appeal.

043-0499 Multiple-Sourcing Strategies in the Presence of Supply Disruption Risks

Bin Hu, Assistant Professor, Kenan-Flagler Business School, United States
Dimitris Kostamis, Assistant Professor, University of North Carolina Chapel Hill, United States

We study multiple-sourcing strategies of a firm that faces supply disruption risks. The firm has access to any numbers of reliable suppliers and unreliable suppliers. The firm’s total output in the market determines the market price. Our research reveals interesting, robust and managerially-significant properties of the firm's optimal sourcing strategy.

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Saturday, 08:00 AM - 09:30 AM, Nat Hill *Track:* Retail Operations Management
Session: Pricing & Liquidation Strategies in Retail Supply Chains
Chair(s): Nicole DeHoratius

043-0339 Traffic-Based Labor Planning in Retail Stores: A Data-Driven Staffing Approach

Howard Hao-Chun Chuang, Student, Texas A&M University College Station, United States
Rogelio Oliva, Associate Professor, Texas A&M University College Station, United States
Olga Perdikaki, Assistant Professor, Texas A&M University College Station, United States

To improve staffing decisions, we perform a comprehensive empirical study using a cross-sectional time-series dataset. We develop a response function to quantify the impact of labor and traffic on sales and proposed a traffic-based heuristic to determine labor requirements.

043-0557 Role of price sensitivity in customer choices in the UK retail sales

Usha Ramanathan, Senior Lecturer, University of Bedfordshire, United Kingdom

We study impact of loyalty schemes and store convenience in UK retail sales. We test moderating role of price sensitivity in customer buying behaviour for branded items. Results of SEM suggest importance of promotions specific to regions. Multi-group analysis indicates level of price sensitivity for different age and income groups.

043-1456 Retail Store Liquidation for Asset Disposition Firms

Nathan Craig, Student, Harvard University, United States
Ananth Raman, Professor, Harvard University, United States

Retail store liquidation is the time-constrained divestment of retail outlets through an in-store sale of inventory. This paper introduces the retail store liquidation problem to the literature and presents a technique for optimizing decisions during liquidations. We show that net recovery is substantially improved in practice when using our method.

043-0626 Pricing, Orders, and Inventory Dynamics

Glen Schmidt, Associate Professor, University of Utah, United States
Nicole DeHoratius, Professor, Zaragoza Logistics Center, United States
Ming Jin, Student, University of Utah, United States

Using data from a manufacturer, distributors, and consumers of medical devices, we study dynamics between pricing, orders, and inventory. For example, we examine how aggregation over time and across items impacts the bullwhip, and how distributors respond to pricing. We compare with analytical predictions found in other works.

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Saturday, 08:00 AM - 09:30 AM, Pomeroy — *Track:* Operations Management and Economic Models
Session: Applications
Chair(s): Mahdi Abbasi

043-1405 POC® decision support system applied to economic modeling of manufacturing operations

Abraao Saraiva Junior, Assistant Professor, University of Sã£O Paulo, Brazil
Reinaldo da Costa, Associate Professor, University of Sã£O Paulo, Brazil

This paper aims to present applications of the decision support system POC® to support economic modeling of products costs and prices in manufacturing operations. To this end, we present and discuss case studies on POC® applications in industries like sanitizing, metal-mechanic, ceramics, food, automotive and garment.

043-1238 An Evaluation of the Global Market's Influence on Companies' Success based on Activity

Maryam Parsaei, Reader, University of Surrey, United Kingdom, Iran (Islamic Republic of)
Mahdi Abbasi, Reader, Toyserkan Branch, Islamic Azad University, Toyserkan, Iran, Iran (Islamic Republic of)

To demonstrate the impact of global market on business trends, current paper has utilized ANP-TOPSIS method to evaluate the qualitative and quantitative outcomes which are obtained from questioners and job experience by assessing 150 companies that belong to 10 different industries/services. Results present effective approaches based on business activity fields.

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Saturday, 08:00 AM - 09:30 AM, Salon E — *Track:* Healthcare Operations Management
Session: Healthcare Information Networks
Chair(s): John Gardner

043-0903 Telemedicine Networks for Rural Healthcare Delivery

Rafay Ishfaq, Assistant Professor, Auburn University, United States

This paper presents a strategic planning model which incorporates operational and service elements of telemedicine healthcare networks. Operational issues such as healthcare center locations, service coverage, equipment configuration and patient travel policies are explored in light of patient demographics and disease prevalence patterns. Results from multiple case studies are discussed.

043-0344 Features To Consider When Identifying A Compatible Electronic Medical Records System

Megan Martin, Student, Virginia Polytechnic Institute And State University, United States

This paper examines the key features that should be considered in selecting an appropriate electronic medical records (EMR) system, including: agency certifications and meaningful-use qualifications, hardware and software compatibility, installation and data storage options, usability preferences, support and maintenance options, information security and privacy preferences, and cost restrictions.

043-0292 Patient-Minded Use of Healthcare Information Systems and Work Specification

John Gardner, Assistant Professor, Brigham Young University, United States
Kenneth Boyer, Professor, Ohio State University, United States
Peter Ward, Professor, Ohio State University, United States

This paper provides one of the first empirical examinations of organizational mindfulness applied to the use of healthcare information systems (HIS). Combining survey and secondary data from 262 U.S. hospitals, we analyze the interrelationship of mindful use of HIS and provider adherence to specified care under different structural contexts.

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Saturday, 08:00 AM - 09:30 AM, Salon F — *Track:* Scheduling and Logistics
Session: Improving Vehicle and Worker Routing
Chair(s): Bruce Golden

043-0126 Solving the Min-Max Multi-Depot Vehicle Routing Problem

Xingyin Wang, Student, University of Maryland, United States
Bruce Golden, Professor, University of Maryland, United States
Edward Wasil, Professor, American University, United States

The min-max Multi-Depot Vehicle Routing Problem (min-max MDVRP) is a variant of the standard MDVRP. The primary objective is to minimize the length of the longest route. We present a heuristic approach to solve this problem. Our approach produces high-quality solutions compared to previous results.

043-0449 A new vehicle-routing-problem model for minimizing fuel consumption

Lirong Wu, Student, Dalian University of Technology, China
Xiangpei Hu, Professor, Dalian University of Technology, China
Xuping Wang, Professor, Dalian University of Technology, China

A Fuel Consumption Minimizing Capacitated Vehicle Routing Problem (FCM-CVRP) model is setup to extend the studies on Capacitated Vehicle Routing Problem (CVRP). The objective of new model is minimizing fuel consumption. A two-objective strategy to solve FCM-CVRP is proposed. Benchmark instances are applied to validate the model and the strategies.

043-0740 The Cost of Turns in Vehicle Routing

Benjamin Dussault, Analyst, Price For Profit, United States
Bruce Golden, Professor, University of Maryland, United States
Edward Wasil, Professor, American University, United States

The rural postman problem is an important arc routing problem with numerous applications including street sweeping, meter reading, and snow plowing. In the research literature, little attention is paid to minimizing the number of turns, but, in practice, this is a key concern. We focus on this in this paper.

157 Saturday, 10:00 AM - 11:30 AM, Salon A — *Track:* Behavioral Issues in Operations Management
Session: Ethics, Effort and Competition
Chair(s): Anna Devlin

043-0297 B2B Auctions - Field Experiment

Anna Devlin, Student, University of Maryland, United States
Wedad Elmaghraby, Associate Professor, University of Maryland, United States
Anand Gopal, Associate Professor, University of Maryland, United States
Ali Pilehvar, Student, University of Maryland, United States

Given the vast quantity of excess inventory being pushed through the reverse supply chains - sellers have turned to B2B auctions to quickly liquidate inventory. We report on a field experiment conducted with the nation's largest B2B liquidation auction site, focusing on substitution across products and market thickness.

043-0459 The Impact of Inventory Risk on Market Prices

Anton Ovchinnikov, Assistant Professor, University of Virginia, United States
Gal Raz, Associate Professor, University of Virginia, United States

Using the concept of quantal response equilibrium (QRE) we model price and inventory competition between boundedly rational firms and show that an increase in the number of competitors may lead to an increase in equilibrium market prices. We attribute this effect to inventory risk and present sensitivity analysis.

043-0868 Perceived Vs. Actual Value of Substitution: An Empirical Investigation

Brent Moritz, Assistant Professor, Penn State University University Park, United States
Saurabh Bansal, Assistant Professor, Penn State University University Park, United States

Firms frequently employ resource substitution as a response to unknown demand. We investigate biases in estimating the value of substitution flexibility and inventory decision making in a behavioral experiment. We also consider the impact of demand correlation on behavior.

043-0501 Decoy Effects in Ethical Decision Making

Steffen Keck, Student, Carnegie Mellon University, United States
Wenjie Tang, Assistant Professor, IE Universidad, Spain

We study decoy effects in ethical decision making. We consider a scenario where one is facing a choice between a monetary more beneficial alternative and a more ethical one. We propose that the presence of decoys make individuals more likely to choose the ethical alternative.

158 Saturday, 10:00 AM - 11:30 AM, Salon B — *Track:* Sustainable Operations
Session: Green transportation and freight operations
Chair(s): Edgar Blanco

043-0258 Green logistics concepts for sustainable transport operations

Gerald Aschauer, Assistant Professor, Logistikum - the logistics competence of University of Applied Sciences UA, Austria

Green logistics deals with logistical flows on an environmental friendly base. This papers purpose is to present existing tools to make transport operations greener. The paper starts with existing obstacles and concludes with tools for green logistcis and their potentials. Afterwards, some examples of realization will be presented.

043-0463 An Application of Analytic Hierarchy Process to the Evaluation of Carbon Footprint Tools for Freight Transport

Anthony Craig, Lecturer, Massachusetts Institute of Technology, United States
Edgar Blanco, Professor, Massachusetts Institute of Technology, United States
Chris Caplice, Professor, Massachusetts Institute of Technology, United States

A large number of tools currently exist to help organizations quantify the carbon footprint of their freight operations, but little consensus has been reached on best practices. We discuss a framework for evaluating those tools using AHP and present some preliminary results from a workshop featuring industry participants.

159 Saturday, 10:00 AM - 11:30 AM, Salon C — *Track:* Sustainable Operations
Session: Issues in remanufacturing and recycling operations
Chair(s): Michael Galbreth

043-0220 Consumer Markets for Remanufactured Products: Empirical Evidence and Economic Models

James Abbey, Student, Penn State University University Park, United States
Joseph Blackburn, Professor, Vanderbilt University, United States
Daniel Guide, Professor, Penn State University University Park, United States

When considering remanufactured products, do consumers follow the typical principle of ‘cheaper is better’. Additionally, do consumer markets for remanufactured products demonstrate homogeneous price-taking behavior? This research addresses these and other questions in relation to consumer markets for remanufactured consumer products. Insights derived from empirically-informed economic modeling.

043-0748 Optimal new product quality under warranty and consumer returns

Marc Reimann, Professor, University of Graz, Austria
Michael Galbreth, Associate Professor, University of South Carolina, United States

An OEM sells new products under warranty as well as consumer returns. Warranty claims are a function of product quality and require repair or replacement with refurbished consumer returns. Refurbished units could alternatively be sold to a secondary market. We study the optimal pricing and quality decisions in this setting.

043-0628 Consumer interest for remanufactured products: the effect of product-specific determinants

Joao Quariguasi Frota Neto, Lecturer, University of Manchester, United Kingdom
Marta Jakowczyk, Student, University of Manchester, United Kingdom

Luk Van Wassenhove, Professor, INSEAD, France

Research on remanufacturing has gained notable visibility over the past years. Little has been said, however, on the extent to which consumers are interested in remanufactured products, and the factors affecting such interest. In this paper we examine these two issues.

043-0544 The Impact of Regulator Evaluation Window on Recycling Claims Under Uncertain Product Returns

Aditya Vedantam, Student, Purdue University, United States
Ananth Iyer, Professor, Purdue University, United States
Paul Lacourbe, Associate Professor, Ceu Business School, Hungary

In this paper, we explore the impact of the evaluation window as a lever for regulators to impact product recycling claims and find conditions under which the regulators choice of the length of the evaluation window can lead to pareto improving outcomes i.e. greater manufacturer profits and recycled content claims.

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Saturday, 10:00 AM - 11:30 AM, Salon D — *Track:* Sustainable Operations
Session: Logistics network design under environmental concerns
Chair(s): Rommert Dekker

043-1123 Green Logistics Network Design: A Critical Review

RUPESH PATI, Associate Professor, Indian Institute of Management Kozhikode, India
Raf Jans, Associate Professor, Hec Montreal, Canada
Rajesh Tyagi, Assistant Professor, Hec Montreal, Canada

This paper critically reviews research conducted over past decade on Green Logistics Network Design (GrLND). Basic features like decision variables, network structure, type of optimization techniques preferred, components of objective functions considered across various industries to improve their environmental performance has been identified. Finally, potential gaps for future studies are highlighted.

043-0068 Reversal logistics and competitiveness: a brief review of this relationship

Regiane Andrade, Student, Universidade Nove De Julho, Brazil
Milton Vieira Junior, Professor, Universidade Nove De Julho, Brazil
Wagner Lucato, Professor, Universidade Nove De Julho, Brazil

The aim of this paper is to show, by means of a theoretical review, the influence of reversal logistics upon the enterprises competitiveness. Relationship between competitive variables and reversal logistics are studied and analyzed.

043-1325 Tactical/Operational Decision Making for Designing Green Logistics Networks

Rommert Dekker, Professor, Erasmus University Rotterdam, Netherlands
John Mallidis, Student, Aristotle University of Thessaloniki, Greece

We investigate whether the addition of distribution centers has positive effects on costs and CO2 emissions, while taking both transportation and inventory costs into account. The model is illustrated through the design of a major white good retailer's logistics network in Greece.

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Saturday, 10:00 AM - 11:30 AM, Salon G — *Track:* Supply Chain Management
Session: Automotive Supply Chain
Chair(s): Peter Nemeth

043-1396 The effect of human factors on production performance in car body manufacturing

Peter Nemeth, Assistant Professor, Szechenyi Istvan University, Hungary
Ferenc Antreter, CFO, Erbslöh Hungary Ltd., Hungary

Increasing pressure on companies in the modern automobile industry creates a need for constant development and cost effectiveness. One major part of this process is the management of human factors. In this paper we discuss the effects of human factors on production performance with artificial neural networks.

043-1301 Dealing with uncertainty in modern Supply Chains: vulnerability and risk management

Lia Oliveira, Assistant Professor, INESC TEC, Faculdade de Engenharia, Universidade do Porto, Portugal
Jorge Sousa, Associate Professor, INESC TEC, Faculdade de Engenharia, Universidade do Porto, Portugal
João Claro, Associate Professor, INESC TEC, Faculdade de Engenharia, Universidade do Porto, Portugal

In this work we have developed a stochastic model for the automotive supply chain, dealing with uncertainty, and supporting strategic and tactical decision-making. This model takes into account the concepts of vulnerability and risk management. The model considers extreme uncertainties that may lead to serious disruptions of the supply chain.

043-0041 Contribution to an automotive variant-driven product variety framework: influencing factors and impact

Haiyan Yi, Associate Professor, Fraunhofer IML, Dortmund, Germany and Southwest Jiaotong University, China, China
Katja Klingebiel, Associate Professor, Farunhofer IML and TU-Dortmund, Dortmund, Germany, Germany

This paper focuses on influencing factors and respective impacts of proliferation of product variety in automotive supply chain. The system logic of evaluation and management of variant-driven product variety is analyzed. Influencing factors and impacts are clarified individually by three dimensions. A matrix of variety factors and impacts is achieved.

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Saturday, 10:00 AM - 11:30 AM, Salon H — *Track:* Supply Chain Management
Session: Managing Relationships in Supply Chain
Chair(s): Ann Vereecke

043-1409 Is Trust without Measure a Good Measure of Trust?

Guilherme Martins, Student, Fundacao Getulio Vargas, Brazil
Luiz Brito, Professor, Fundacao Getulio Vargas, Brazil
Fabio Tescari, Student, Fundacao Getulio Vargas, Brazil
Priscila Miguel, Professor, Fundacao Getulio Vargas, Brazil

This article aims to analyze trust effect both on value creation and value capture in buyer-supplier relationships. Based on 117 dyads, we find out that trust creates relational rents, as stated by Relational View. However, these rents are captured by buyer, especially when supplier's sales is concentrated.

043-1371 Supply chain roles, responsibilities and organisation structure

Ann Vereecke, Professor, Vlerick Management School, Belgium
Jasmijn Verbrigghe, Student, Vlerick Management School, Belgium

The paper reports on a survey with 340 supply chain practitioners. It describes the preferred organization structure for SCM, and it identifies five profiles of SC managers with a different set of responsibilities, at different organization levels. It also shows that SCM is still a rather distribution-oriented function.

043-0076 Third party purchase service

Peter Shi , Student, University of Auckland, New Zealand
Tiru Arthanari, , University of Auckland, New Zealand

The primary focus of this research is on third party purchase as a value-added service offered by third party logistics providers. The main contribution of this research is to help 3PL providers maintain sustained competitive advantages through offering third party purchase service.

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Saturday, 10:00 AM - 11:30 AM, Salon I — *Track:* Humanitarian Operations and Crisis Management
Session: Improving Decision Making in Humanitarian Logistics
Chair(s): Paulo Goncalves

043-0367 Impact of Joint Decisions and Cognitive Dissonance on Prepositioning (Newsvendor) Decisions

Jaime Castaneda, Student, University of Lugano, Switzerland
Paulo Goncalves, Associate Professor, University of Lugano, Switzerland

Stressing cognitive dissonance theory by manipulating items' importance and Newsvendor critical fractiles, we requested humanitarian practitioners in a laboratory experiment to preposition two emergency supplies of different importance jointly. Results show that humanitarian practitioners increase (reduce) the Newsvendor pull-to-center effect for high-importance items as a result of stressing dissonance (consonance).

043-0505 Understanding the Drivers and Barriers of Coordination Among Humanitarian Organizations

Mohammad Moshtari, Student, University of Lugano, Switzerland
Paulo Goncalves, Associate Professor, University of Lugano, Switzerland

The study seeks to understand the drivers and barriers for horizontal coordination among humanitarian organizations from both practitioners and academics sources. It identifies four categories of factors - environmental factors, factors associated with donors' role, inter-organizational factors and organizational factors - influencing coordination effort among humanitarian organizations.

043-0508 Stochastic optimization applied to the pre-positioning of disaster relief supplies decisions in Brazil

Irineu Brito Jr, Student, Universidade De Sao Paulo, Brazil
Adriana Leiras, Assistant Professor, Pontifica Universidade Catolica Do Rio De Janeiro- Puc Rio, Brazil
Hugo Yoshizaki, Associate Professor, Universidade De Sao Paulo, Brazil

We present a two-stage stochastic optimization model to locate pre-positioned materials for disaster relief in Brazil. Due to uncertainty both of disaster severity and media influence, they are represented as scenarios. Results show that the stochastic model generates more robust solutions, particularly when demand cannot be completely fulfilled.

043-0635 Stochastic Optimization of Humanitarian Aid Supply and Distribution for the World Food Programme in Ethiopia

Paulo Goncalves, Associate Professor, University of Lugano, Switzerland
Adriana Leiras, Assistant Professor, Pontifica Universidade Catolica Do Rio De Janeiro- Puc Rio, Brazil
Bervery Chawaguta, Logistics Officer, World Food Programme (WFP) Ethiopia, Ethiopia
Hugo Yoshizaki, Associate Professor, Universidade De Sao Paulo, Brazil

To ensure that limited resources are efficiently allocated, we developed a two-stage linear stochastic programming model of humanitarian aid supply and distribution, where uncertainty is introduced through demand and roads/ hubs accessibility. The optimization model was applied to WFP's operations in Ethiopia. Results show high potential cost savings.

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Saturday, 10:00 AM - 11:30 AM, Salon J — *Track:* Humanitarian Operations and Crisis Management
Session: The role of media in humanitarian operations
Chair(s): Kate Hughes

043-1664 Media Panel

Stephen Ross, Professor, Columbia University, United States

A panel discussion on the impact of media on donations and humanitarian operations.

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Saturday, 10:00 AM - 11:30 AM, Suites I — *Track:* General Track
Session: General Topics - Quality Management
Chair(s): Vidyaranya Gargeya Kwasi Amoako-Gyampah

043-0891 Quality --- An Attempt at a Holistic Approach

George Kenyon, Associate Professor, Lamar University, United States
Kabir Sen, Professor, Lamar University, United States

Quality has been used in many different contexts. Researchers have approached "quality" as a trait of a product or service. We view that the intangible quality inherent in the product manufacturing, logistics and the supply chain process is manifest in the final product as perceived by the customer.

043-0123 Quality Enhancement Plans in Higher Education: A review

Vidyaranya Gargeya, Professor, University of North Carolina Greensboro, United States

The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) is the accreditation agency for universities and colleges in the southern United States. Since 2004, SACSCOC has required each institution seeking reaffirmation to develop a Quality Enhancement Plan (QEP). This paper is a review of 600 QEPs.

043-0158 Effects of HRM & Manufacturing Strategies on Competitive Strategy: Family vs nonfamily firms

Kwasi Amoako-Gyampah, Professor, University of North Carolina Greensboro, United States
Moses Acquaah, Professor, University of North Carolina Greensboro, United States
Jayanth Jayaram, Professor, University of South Carolina, United States

The study examines the effects of human resource and manufacturing strategies on competitive strategy and how they differ between family and nonfamily firms in developing economies. We show that there is no consistent pattern in the relationships between the functional strategies and competitive strategy, for both family and nonfamily firms.

043-0640 Assessing the Firm Performance Benefits of Supply Chain Technology Investments

Bill Worthington, Assistant Professor, Baylor University, United States
Jamie Collins, Assistant Professor, University of Dallas, United States
Pedro Reyes, Associate Professor, Baylor University, United States

Investments in supply chain technology facilitate knowledge management, enabling firms to identify changes in their environment and to adjust their strategies in response. We examine the responses of over 300 supply chain professionals pertaining to the relationship between investments in supply chain technologies and overall firm performance benefits.

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Saturday, 10:00 AM - 11:30 AM, Suites II — *Track:* Production Planning and Scheduling
Session: Planning and Scheduling under Uncertainty
Chair(s): Yalcin Akcay

043-0313 Procurement Contracts under Information Asymmetry and Demand Uncertainty

Daewon Sun, Associate Professor, University of Notre Dame, United States
Zhaolin Li, Senior Lecturer, University of Sydney, Australia
Jennifer Ryan, Associate Professor, Rensselaer Polytechnic Institute, United States

We consider the design of multi-attribute procurement contracts when the supplier possesses multi-dimensional private information. In contrast to the existing one-dimensional models, we find that in some cases the buyer can extract all of the channel profits without distorting the specifications of the final product.

043-0524 Planning Product Availability for Vertically Differentiated Products

Yalcin Akcay, Assistant Professor, Koc University, Turkey
Hari Natarajan, Associate Professor, University of Miami, United States

In many industries, firms offer a variety of substitutable products that customers can choose from. Because product demands are inter-related, managers must determine inventory policies jointly. Considering the case of a vertically-differentiated product assortment, we model and analyze the problem of determining the optimal inventory policy for a product assortment.

043-0629 Wind Driven Optimization for Scheduling

Kaan Kuzu, Assistant Professor, University of Wisconsin Milwaukee, United States
Anthony Ross, Professor, University of Wisconsin Milwaukee, United States
Wanxi Li, Student, University of Wisconsin Milwaukee, United States
Zikri Bayraktar, Research Analyst, IBM, United States

We introduce Wind Driven Optimization (WDO); a population based iterative global optimization methodology for solving multi-dimensional and multi-modal problems with the ability to implement constraints on the search domain. We apply the technique to real world production scheduling problems, and benchmark its performance with heuristics and other nature-inspired methodologies.

043-0685 Supply risk management in an export-processing system

Long Gao, Assistant Professor, University of California Riverside, United States

We study a supply risk management problem in the export-processing trade model, where the retailer who has a certain targeted purchasing quantity, supplies an appropriate amount of raw materials, and the supplier receives the processing fee for processing and exporting the final products. The supplier faces stochastically proportional yields.

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Saturday, 10:00 AM - 11:30 AM, Suites III — *Track:* Empirical Research in Operations Management
Session: Editorial Panel on Empirical Research in Operations Management
Chair(s): Manpreet Hora

043-1641 Editorial Panel on Empirical Research in Operations Management

Thomas Choi, Professor, Arizona State University Tempe, United States
Robert Klassen, Professor, University of Western Ontario, Canada
Michael Lapré, Associate Professor, Vanderbilt University, United States
Aleda Roth, Professor, Clemson University, United States

This session includes a panel of scholars who have extensively published empirical work and are serving as editors (including Associate Editors and Senior Editors). They will discuss their view on the trajectory of empirical research in OM focusing on engaging conceptual research questions, current issues and trends and emerging themes.

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Saturday, 10:00 AM - 11:30 AM, Suites IV — *Track:* Healthcare Operations Management
Session: Healthcare Supply Chains: Complexity, Costs & Design
Chair(s): David Zepeda

043-0044 Linking service-dominant logic and healthcare supply chain

Samyadip Chakraborty, Student, IFHE University, India
David Dobrzykowski, Assistant Professor, University of Toledo, United States

While Supply Chain Management (SCM) has proven effective in many industries, healthcare has found its adoption to be challenging. Underpinned by service-dominant logic (SDL), this paper examines value co-creation in healthcare; namely the translation of internal competencies into external capabilities, and develops a theoretical framework linking SDL and SCM.

043-0259 New Trends in Healthcare Supply Chain

Joseph Mathew, Student, Indian Institute of Management Lucknow, India
Joshin John, Student, Indian Institute of Management Lucknow, India
Sushil Kumar, Professor, Indian Institute of Management Lucknow, India

This paper focuses on the new trends to optimize costs in healthcare supply chain operations that include virtual centralization of supply chains, supply utilization management practices, use of RFID technologies, use of analytics, streamlining workflow etc. The application of these techniques can provide affordable healthcare solutions in developing countries.

043-0282 Complexity and supply chain management practices in healthcare: a value co-creation view

Samyadip Chakraborty, Student, IFHE University, India
David Dobrzykowski, Assistant Professor, University of Toledo, United States
Sourabh Bhattacharya, Associate Professor, IMT , India
Surajit Ghoshdastidar, Assistant Professor, IMT , India

'Complexity' management is a key area of managerial consideration. Conceptualizing complexity dimensions as Relationship-quality, Interaction volume & number, Degree of differentiation, this paper investigates the influence of hospital supply-base and customer-base complexity on key upstream and downstream supply chain management practices using Prahalad and Ramaswamy's (2004) DART (Dialogue-Access-Risk Benefits-Transparency) framework.

043-0263 Health Care Supply Chain Design for Primary Care: Reducing Disparities in Behavioral Health Care Delivery

David Zepeda, Assistant Professor, Northeastern University, United States
Kingshuk Sinha, Professor, University of Minnesota, United States

This study empirically evaluates the delivery of behavioral health care through the supply chain for primary care. We place the health care supply chain in the broader community environment and center our attention on the impact of IT-enabled, evidence-based, and affordable primary care to improve behavioral health care.

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Saturday, 10:00 AM - 11:30 AM, Suites V — *Track:* Supply Chain Contracting
Session: Supply Chains, Contracts and Teamwork
Chair(s): George Georgiadis

043-0166 Project Design with Limited Commitment and Teams

George Georgiadis, Student, University of California Los Angeles, United States
Steven Lippman, Professor, University of California Los Angeles, United States
Christopher Tang, Professor, University of California Los Angeles, United States

We study the interaction between a group of agents who collaborate to complete a project, and a manager who chooses its size. We show that she has incentives to extend the project as it progresses, and we examine the implications of this result for the structure of decision rights in_teams_and_hierarchies.

043-1386 Performance Metrics for Collaborative Cross Functional Organizations

Jeremy Hutchison-Krupat, Assistant Professor, University of Virginia, United States
Stylianos Kavadias, Professor, University of Cambridge, United Kingdom

We revisit a classic dilemma in organizational theory regarding the effectiveness of team-based and functional metrics in projects. We show that the optimal compensation schemes depend critically on the underlying uncertainty of the project tasks but also on the complementarities between the different functional competencies. Implications for management are drawn.

043-1557 An analysis of the consumers' purchase timing decision

Emre Ertan, Student, University of Texas Dallas, United States
Ozalp Ozer, Professor, University of Texas Dallas, United States
Kathryn Stecke, Professor, University of Texas Dallas, United States

We investigate the consumers' sequential decision-making process under uncertain product availability and analyze effects of underlying behavioral decision biases in the retail industry. Consumers can act strategic to maximize their surplus by waiting for markdown sales rather than purchasing at premium price. We formalize a model using discounted utility theory.

043-0960 Business Process Outsourcing; Performance Measurement for Call Center Services

Sherwat Elwan Ibrahim, Associate Professor, German University in Cairo, Egypt

An empirical study assessing the most significant variables affecting the decision of business process outsourcing in call center services, and their impact on service level agreement objectives and cost. Special focus is given to opportunistic behavior of the supplier with respect to two different pricing schemes (PPT Vs. PPC).

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Saturday, 10:00 AM - 11:30 AM, Suites VI — *Track:* Product Innovation and Technology Management
Session: Product Development Operations in Entrepreneurial Settings
Chair(s): Karthik Ramachandran

043-0198 Sequential Innovation by Start-ups: Balancing Survival and Profitability

Sinan Erzurumlu, Assistant Professor, Babson College, United States
Karthik Ramachandran, Assistant Professor, Georgia Institute of Technology, United States
Sreekumar Bhaskaran, Assistant Professor, Southern Methodist University, United States

Start-up firms, which are by nature cash-constrained, might consider launching an immediately available product to generate funds for developing more advanced products. However, this release may have an adverse effect on the perception of the firm's future products. In this paper we discuss the product launch decision for the start-up.

043-0199 Analyzing the interdependence between entrepreneurial opportunity creation and discovery

Richard Arend, Associate Professor, University of Missouri At Kansas City, United States
Moren Levesque, Professor, York University, Canada

We offer an explanation of how the two main types of entrepreneurial opportunity (i.e., discovery-based and creativity-based opportunities) can interact, in what cases, to what effect, and at what relative values. We do so through the analysis of an established, simple, illustrative, partial-equilibrium model.

043-0419 Knowledge Management and Entrepreneurship

Cheryl Gaimon, Professor, Georgia Institute of Technology, United States
Jennifer Bailey, Student, Georgia Institute of Technology, United States

We synthesize research from operations management, entrepreneurship, organizational science, and strategy to investigate the performance benefits of knowledge management activities for a high-tech venture. We adopt a dynamic learning perspective to understand how such activities change throughout four phases of the venture's lifecycle. We conclude with suggestions for future research.

043-1100 The Relationship between Innovation Processes and Innovation Premium

John Angelis, Assistant Professor, Rochester Institute of Technology, United States
Rajendran SriramachandraMurthy, Assistant Professor, Rochester Institute of Technology, United States

Innovative firms may experience an Innovation Premium (Christiansen, 2011) added to their stock price due to their innovation reputation. We investigate whether innovative firms possess higher Innovation Premiums due to their amount and quality of innovation processes (such as co-creation) available to its customers.

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Saturday, 10:00 AM - 11:30 AM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: Learning and Problem Solving in NPD
Chair(s): Anant Mishra

043-0338 On the Effectiveness of Patenting Strategies

Fabian Sting, Assistant Professor, Erasmus University Rotterdam, Netherlands
Juergen Mihm, Assistant Professor, INSEAD, France
Tan Wang, Student, INSEAD, France

Which inventions should companies patent? In this paper we build a framework of patenting strategies. Through a simulation model, we identify competitive dynamics and R&D strategy as the most crucial contingencies. Within our framework, we characterize optimal patenting choices. Our research makes a step towards a contingency theory of patenting.

043-0437 NPD Alliances: The role of operational constraints

Niyazi Taneri, Assistant Professor, Singapore University of Technology and Design, Singapore
Arnoud De Meyer, Professor, Singapore Management University, Singapore

We develop analytical models that show that operational constraints have opposing impacts on values from joint ventures versus licenses. This result and others are confirmed in our follow on empirical study. Furthermore, our analysis suggests that aligning alliance choice with the characteristics of the two partners has consequences for performance.

043-1072 Sources of medical device recalls

Ujjal Mukherjee, Student, University of Minnesota, United States

In this paper we look at design and technology related sources of medical device recalls. We analyze trends in medical device technology and try to analyze conditions which lead to increased likelihood of failure. Also, we link the failures to firms' learning using 10 years of recall database.

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Saturday, 10:00 AM - 11:30 AM, Matchless — *Track:* Inventory Management
Session: Advances in Inventory Management
Chair(s): Mohsen Elhafsi

043-0331 Inventory Decisions from a Cost Management Perspective

Jack Kanet, Professor, University of Dayton, United States
Peter Letmathe, Professor, Rwth Aachen University, Germany

We show that different inventory categories are not mutually exclusive and that marginal costs of holding inventory do not follow a consistent (predictable) pattern. Our findings are highly relevant when firms want to manage inventory, e.g. when introducing lean management practices or considering the consequences of capacity decisions.

043-0281 Managing an Integrated Production-Inventory System with Multiple Production Facilities

Mohsen Elhafsi, Professor, University of California Riverside, United States
Saif Benjaafar, Professor, Singapore Institute of Manufacturing Technology, United States

We study a production-inventory make-to-stock system with identical facilities with no order cancellations. Demand is backlogged if not satisfied immediately. The objective is to control the number of production facilities to be used as well as the inventory level so as to minimize the total production, holding and backlog costs.

043-1548 A Continuous Review Model with General Shelf Age and Delay Dependent Inventory Costs

Awi Federgruen, Professor, Columbia University, United States
Min Wang, Assistant Professor, Drexel University, United States

We analyze a continuous review inventory model withgeneral shelf age dependent carrying and delay dependent backloggingcosts. An order of arbitrary size may be placed at any demand epochand arrives after a given deterministic leadtime, or a stochasticleadtime generated by a sequential exogenous leadtime process. Weshow that an (r,q)-policy is optimal.

043-1635 Safety lead times in Configure-To-Order systems

Ton De Kok, Professor, Eindhoven University of Technology, Netherlands

High-tech capital goods are configured and tested on customer order. The associated manufacturing activities are complex, causing stochastic throughput times of these activities. In order to ensure On-Time-Delivery safety lead times are introduced for each activity. We derive optimal safety lead times for convergent CTO assembly networks.

043-0975 Relaxations of Approximate Linear Programs for the Real Option Management of Commodity Storage

Selvaprabu Nadarajah, Student, Tepper School of Business, United States
Francois Margot, Professor, Tepper School of Business, United States
Nicola Secomandi, Associate Professor, Tepper School of Business, United States

Real options management of commodity conversion assets gives rise to intractable MDPs with equivalent primal and dual LPs. We construct tractable approximate primal and dual LPs where the primal relaxes an approximate LP and the dual satisfies properties of the exact dual. Near-optimal policies are computed for natural gas storage.

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Saturday, 10:00 AM - 11:30 AM, Gold Coin — *Track:* Supply Chain Risk Management
Session: Global Risk Management
Chair(s): Ann Marucheck

043-1540 International Supply Chains, Opportunities and Threads during volatile conditions

Gurkan Akalin, Student, Eastern Illinois University, United States

This presentation will investigate opportunities in managing supply chains during and after the financial crises of late 2000s. We will look at particular emerging countries, how customers behaved in these volatile times, and how SCM can utilize these lessons.

043-1513 Managing Food Chain Risk: An Empirical Study of Border Refusals

Noel Greis, Professor, University of North Carolina Chapel Hill, United States
Ann Marucheck, Professor, University of North Carolina Chapel Hill, United States
Monica Nogueira, Lecturer, University of North Carolina Chapel Hill, United States

Food companies in the US face increasing supply chain risk due to growing volumes of imported products and a renewed regulatory focus on products entering the US from abroad. This paper takes an empirical look at FDA border refusals data in order to design better food chain risk mitigation strategies.

043-1380 A Comparison Study of Sourcing Policies under Global Demand and Supply Uncertainty

Chieh Lee, Student, Washington State University Pullman, United States
Charles Munson, Professor, Washington State University Pullman, United States

We study optimal sourcing strategies for companies facing both demand and supply uncertainties. The buying firm makes use of quantity flexible contracts and sources from some combination of contract manufacturers, offshore branches, and in-house production. We explore the characteristics of optimal policies with respect to various demand distributions via simulation.

043-0485 The Information Security as Improvement Process to gain Business Competitiveness: a survey at SMEs in the São

Emerson Beneton, Student, UNIP Universidade Paulista, Brazil
Ivanir Costa, Professor, UNIP Unoversidade Paulista, Brazil
Amarildo Nogueira, Student, Unisantos, Brazil
Getulio Akabane, Student, CEETEPS/Anhahguera, Brazil

SI incidents targeting enhancements of five pillars of competitiveness such as price, quality, response time, flexibility and innovation.The study objectives to examine Information Security incidents reduction of among small and medium enterprises using SI processes, specifically under ISO 27002 in order to get the corporate competitiveness level under information technology.

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Saturday, 10:00 AM - 11:30 AM, Mattie Silks — *Track:* Service Operations
Session: Teaching Service Operations
Chair(s): Mark Davis Janelle Heineke

043-1666 Workshop on Teaching Service Operations

Mark Davis, Professor, Bentley University, United States
Janelle Heineke, , Boston University School of Management, United States
Joy Field, Associate Professor, Boston College, United States

The goal of this workshop is to introduce some class exercises that not only emphasize topics covered in a service operations management course, but actually integrate many of them into the design of the course itself. These course-related examples demonstrate the significant value that is generated in the course.

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Saturday, 10:00 AM - 11:30 AM, Molly Brown — *Track:* Marketing and Operations Management Interface
Session: Case Study and Empirical Research
Chair(s): Rajesh Srivastava

043-1375 Process mapping to improve sales and operations interface: a case study

Rajesh Srivastava, Professor, Florida Gulf Coast University, United States
Elias Kirche, Associate Professor, Florida Gulf Coast University, United States

This research describes the analysis and redesign of processes linking operations and sales at a SME. The aim of the redesign was to increase visibility of orders in the pipeline. The redesigned process corrected bottlenecks, duplication of efforts, reduced total overall transaction time, and overall reduction in process errors.

043-0560 How do the interactions of service attributes affect customer satisfaction? A study of Kano Model's attributes

Gerson Tontini, Emeritus Professor, Universidade Regional de Blumenau - FURB, Brazil
Klaus Søilen , Associate Professor, Halmstad University, Sweden
Amélia Silveira , Professor, Nove de Julho University (UNINOVE), Brazil

This paper objective is analyzing how interactions of services' attributes, depending on Kano Model attributes's classification, do affect customer satisfaction. The results show that the impact of a superior level of "Attractive" and "One-dimensional" attributes, on customer satisfaction decreases 60% to 70% if "Basic" attributes are unfulfilled.

043-1469 How to solve the trade-off between capacity utilization and service level

Erick Colares, Industrial Process Consultor, Getulio Vargas Foundation, Brazil

This article analysis the impacts caused by increase in capacity utilization in the level of service aggregated to commodity through the downstream movement. A case study was conducted in a steel producer. The case explores demand and capacity management to provide strategies which being implemented may diminish the impacts.

043-1287 Brand Management in a Brazilian Dairy Manufacturer

Patricia Peghini, Student, Uberlandia Federal University, Brazil
Veronica de Paula, Assistant Professor, Uberlandia Federal University, Brazil

As the fifth largest milk producer in the world, Brazil concentrates many dairy industries, all struggling to create and sustain competitive advantages. In this context, brand management may help manufacturers to achieve success. Therefore, this study aims at analyzing brand management in a Brazilian dairy industry.

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Saturday, 10:00 AM - 11:30 AM, Spruce *Track:* Revenue Management and Pricing
Session: Revenue Management and Pricing - 1
Chair(s): Sumit Kunnumkal

043-1227 A new compact LP formulation for choice network RM

Kalyan Talluri, Professor, Universitat Pompeu Fabra, Spain
Sumit Kunnumkal, Assistant Professor, ISB, India

We derive a new compact LP formulation for the choice network RM problem. Our LP gives an upper bound that is provably between the choice LP value and the affine relaxation, and often coming close to the latter in numerical experiments.

043-1367 Acceptance Policies for Multiple Demand Classes with Heterogeneous Lead-times

Tanja Mlinar, Student, Place des Doyens 1, 1348 Louvain la Neuve, Belgium, Belgium
Alejandro Lamas, Student, Place des Doyens 1, 1348 Louvain la Neuve, Belgium, Belgium
Liang Lu, Student, Voie du Roman Pays 34, 1348 Louvain-la-Neuve, Belgium, Belgium
Philippe Chevalier, Professor, Voie du Roman Pays 34, 1348 Louvain-la-Neuve, Belgium, Belgium

We consider an infinite horizon order acceptance problem for a firm serving two classes of demand that differ in net-profits and lead-times. The optimal acceptance policies are obtained by solving a multi-dimensional Markov Decision Process which involves high computational requirements. We propose highly efficient state aggregation heuristics with low complexity.

043-1351 Dynamic Pricing with Reference Price Updating Strategies and Customers' Memory Window Effects

Dash Wu, Senior Lecturer, University of Toronto, Canada

We propose a new dynamic pricing model with Reference Price Updating Strategies and Customers' Memory Window Effects. We compare the performance of the proposed model with various existing models.

043-0376 Reductions of Approximate Linear Programs for Network Revenue Management

Thomas Vossen, Associate Professor, University of Colorado Boulder, United States
Dan Zhang, Assistant Professor, University of Colorado Boulder, United States

We consider equivalent reductions of approximate linear programs (ALPs) for network revenue management by exploring the relationship between ALPs and appropriate Dantzig-Wolfe reformulations. Dramatic reduction of ALP problem sizes are shown for (i) separable piecewise linear approximation under independent demand model, and (ii) affine approximation with customer choice behavior.

043-1191 Equivalence of piecewise-linear approximation and Lagrangian relaxation for NRM

Kalyan Talluri, Professor, Universitat Pompeu Fabra, Spain
Sumit Kunnumkal, Assistant Professor, ISB, India

The network RM problem can be formulated as a DP with an exponentially large state space. A number of heuristics have been proposed to approximate it. Notable amongst these are ADP methods that approximate the value function by basis functions and decomposition methods that relax constraints.

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Saturday, 10:00 AM - 11:30 AM, Nat Hill *Track:* Retail Operations Management
Session: Retail Operations in Multi-store or Multi-channel Environments
Chair(s): Goker Aydin

043-0642 Applying Optimization Methods in the Practice of Shelf Space Management at a Portuguese Retail Chain

Teresa Bianchi de Aguiar, Student, Faculty of Engineering, University of Porto, Portugal
Maria Antónia Carravilla, Associate Professor, Faculty of Engineering, University of Porto, Portugal
José F. Oliveira, Associate Professor, Faculty of Engineering, University of Porto, Portugal

A clever products arrangement in shelves can boost the stores financial performance. Accordingly, we developed innovative optimization methods for shelf space management and implemented them at a Portuguese retail chain. Their benefits include trade-off analysis between solutions biased towards profit maximization or towards company's rules, image standardization and time reductions.

043-1329 From Clicks to Bricks and Back Again

Almula Camdereli, Assistant Professor, Georgetown University, United States
Julie Niederhoff, Assistant Professor, Syracuse University, United States
Dennis Yu, Assistant Professor, Clarkson University, United States

We propose a hybrid online/in-store retail model where customers are offered to order the item into a local brick-and-mortar store for customer preview at no risk. We provide insights through a behavioral study using measures of satisfaction, willingness to pay, and commitment to the ideal item.

043-0100 The Impact of Consumer Returns on a Manufacturer's Multichannel Strategy

Paolo Letizia, Assistant Professor, Erasmus University Rotterdam, Netherlands
Terry Harrison, Professor, Penn State University University Park, United States

In this article we study the manufacturer's multichannel strategy when the online channel offers a high product marginal value to the consumer but poses the problem of uncertainty about product fit (which might imply consumer returns), whereas the retail channel offers lower product marginal value but without uncertainty.

043-0379 Inventory Allocation and Pricing for Inventory Dependent Demand at Non-Identical Stores

Stephen Smith, Professor, Santa Clara University, United States
Narendra Agrawal, Professor, Santa Clara University, United States

A retailer sets prices and allocates inventory across non-identical stores in the chain, assuming that demand is inventory dependent. Pricing and inventory allocation decisions can be updated. Properties of the optimal pricing and inventory policies are discussed and illustrated with examples of generic retail products.

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Saturday, 10:00 AM - 11:30 AM, Pomeroy — *Track:* Operations Management and Economic Models
Session: Game Theory
Chair(s): Ping Su

043-1103 Cost Transportation Game with Coalitions

Jiangao Zhang, Associate Professor, Chongqing University, China
Shitao Yang, Associate Professor, University of Illinois Urbana-Champaign, United States

We study a regional transportation problem consisting of independent subsystems and show that as a cost transportation game with coalitions the Pareto optimization can be realized with market share unchanged. We prove that this cost transportation game is a TU-game and its core is nonempty when the game is balanced.

043-0517 Optimal quality positioning and pricing of Urban Logistics Services – a spatial competition approach

Matthias Winkenbach, Student, Whu - Otto Beisheim School of Management, Germany
Stefan Spinler, Professor, Whu - Otto Beisheim School of Management, Germany
Alain Roset, Technical Director Mail, Le Groupe La Poste, France

We present a spatial competition model with non-uniformly distributed customers, sequential entry and simultaneous post-entry price competition among multiple urban logistics service providers. Competitors have heterogeneous, multivariate quadratic cost functions. In conjunction with dynamic programming, this model serves to analyze optimal strategic positioning and pricing policies for urban logistics services.

043-0298 Strategic Debt-Financing and Supply Chain Games

Ping Su, Assistant Professor, Hofstra University, United States
Qiaohai (Joice) Hu, Assistant Professor, Washington University St Louis, United States

We consider a two-stage supply chain in which a supplier is selling to two competing retailers. The retailers can choose the debt to enhance their strategic competitive position in the product market. We explore the strategic effect of the debt financing on supply chain decisions.

043-1522 Designing the Noah's Ark: A Mechanism to Build Consensus among Competitors

Prem Swaroop, Student, College Park, United States
Michael Ball, Professor, College Park, United States

A shared perception of common threat or opportunity forces competitors to seek consensus. We present a mechanism that effectively finds consensus-based design solution that has many desirable properties - including high accuracy, confidentiality and strategy-resistance. To demonstrate, we use airlines deciding on common strategy to handle bad weather as setup.

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Saturday, 10:00 AM - 11:30 AM, Salon E — *Track:* Service Operations
Session: Risk and Performance Evaluation
Chair(s): Yuqian Xu

043-1273 Spare Parts Inventory Control Under Markov Modulated Supply Risk

Mustafa Hekimoglu, Student, Erasmus University Rotterdam, Netherlands
Rommert Dekker, Professor, Erasmus University Rotterdam, Netherlands

In the last phase of capital goods' life cycle, spare parts are subject to nonstationary supply risk. In this study, an inventory control system subject to Markov-modulated lead times and supply failure probability is analyzed. Optimality of (s,S) policy and conditions for monotonicity of control parameters are shown.

043-0783 Servitization and firm failures: an exploration into the risks of services

Ornella Benedettini, Lecturer, Politecnico Di Bari, Italy
Andy Neely, Professor, Cambridge University, United Kingdom
Morgan Swink, Professor, Michigan State University, United States

Drawing on evidence from 129 firms, the paper analyses the relationship between the addition of services to the offerings of manufacturing firms and the exposure to bankruptcy risks. Results highlight how the servitization process changes the risk structure of a firm and suggest a novel view on the 'service paradox'.

043-1097 The use of an instrument to assess system performance production management: a comparison of two service companies

Rolf Erdmann, Assistant Professor, Universidade Federal De Santa Catarina, Brazil
Mayara Teodoro de Oliveira, Student, Universidade Federal De Santa Catarina, Brazil
Beatriz Azevedo, Student, Universidade Federal De Santa Catarina, Brazil
Darlan Roman, Student, Universidade Federal De Santa Catarina, Brazil
Giorgio Paixão, Student, Universidade Federal De Santa Catarina, Brazil
Luciana Costa, Student, Universidade Federal De Santa Catarina, Brazil

The objective of this paper was compare the results of applying an assessment instrument performance. The tool is organized by thirteen subsystems, which are confronted with the performance objectives. The results demonstrated that this tool was positive for assessment of organizational performance, and it be able to design improvement projects.

043-0409 An Integrated Framework for Service Quality: SQBOK Perspective

Rajesh Tyagi, Assistant Professor, Hec Montreal, Canada
Nikhil Varma, Student, Hec Montreal, Canada
Navneet Vidyarthi, Assistant Professor, Concordia University, Canada

The objective of this article is to introduce the theoretical rationale of the SQBOK framework and to identify the different determinants of service quality. The research team, consisting of members of the Service Quality Division of ASQ, adopted brainstorming, affinity diagram, Delphi techniques and interview based methods.

043-0422 Operational Risk in Financial Services from an OM Perspective

Yuqian Xu, Student, New York University, United States
Michael Pinedo, Professor, New York University, United States
Mei Xue, Associate Professor, Boston College, United States

We present an overview of the relationships between Operational Risk in Financial Services and the application of Reliability Theory, Total Quality Management, Data Mining, Extreme Value Theory and Performance Analysis in other industries, including manufacturing industries as well as other service industries.

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Saturday, 10:00 AM - 11:30 AM, Salon F *Track:* Scheduling and Logistics
Session: Scheduling and Throughput Enhancement
Chair(s): George Polak

043-1060 Batching and Sequencing of Two-Task Jobs on a Single Processor

Kenneth Baker, Professor, Dartmouth College, United States
Brenda Courtad, Student, University of Cincinnati, United States
Michael Magazine, Professor, University of Cincinnati, United States
George Polak, Professor, Wright State University, United States

We consider jointly batching and sequencing two-task jobs on a single processor, where tasks must be completed in a fixed order subject to an intervening delay. Constraint programming and disjunctive programming are employed as solution methodologies. We identify special cases of particular interest, and discuss applications to health care.

043-0417 Throughput Optimization in Single and Dual-Gripper Robotic Cells

Manoj Vanajakumari, Assistant Professor, Texas A&M University College Station, United States
Chelliah Sriskandarajah, Professor, Texas A&M University College Station, United States

The complexity of throughput optimization in the class of 1-unit cycles in single and dual-gripper robotic cells is the main focus of this research. We consider three class of problems: interval cells, free-pickup cells, and no-wait cells. We provide some insights for throughput optimization using two-unit cycles.

043-0143 Single-machine scheduling with upper bounded actual processing times and machine maintenances

Yulin Zhang, Professor, Southeast University, China
Pengfei Xue, Student, Southeast University, China
Xiaogan Jiang, Professor, Southeast University, China

We consider the scheduling problem of setting the upper bounds for the actual processing times and maintenance times under assumption that the actual processing times of a job is a position-dependent power function. The maintenance duration is a position-dependent exponential function. Through building a corresponding jobs scheduling model, we found the scheduling problem can be transformed as a classic assignment problem to solve and obtained jointly the optimal frequency to perform maintenance and the optimal job sequence to minimize the total cost, which is a linear function of makespan and total tardiness.Through applying polynomial time algorithm to solve the scheduling problem we studied, we proved that the jobs scheduling model is computable and the computational complexity of the scheduling problem is O(n4).

043-1039 Electronic and real-time kanban using RFId Technology

Geraldo Farias, IT Coordinator, Label Evolution Technology Systems, Brazil

An efficient and effective Stock Management has been a significant competitive differential for companies in general. Thus, this paper presents a solution using Radio Frequency Identification technology in stock management, configuring an electronic and real-time kanban, illustrating the huge quantity of opportunities that RFId technology may improve in industrial environment.

043-0536 Supply chain management as a competitive strategy for costs reduction: a case study in two small manufacturing

Hamilton Pozo, Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil
Takeshy Tachizawa, Associate Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil
Getulio Akabane, Student, Centro Paula Souza, Brazil
Washington Luiz Soares, Student, Santa Cecilia University, Brazil

This paper presents a case study into the Supply Chain Management developed and implemented in two small manufacturing at Campo Limpo Paulista/BR. The goal was to provide conditions for strategic decision to prioritize the implementation and providing conditions of lower costs for the operations system.

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Saturday, 12:30 PM - 02:00 PM, Salon A — *Track:* Behavioral Issues in Operations Management

Session: Supply Chain Management

Chair(s): Alessandro Ancarani

043-1011 Coalition Formation and Cost allocation Among Supply Chain Agents

Adel ELOMRI, Assistant Professor, Qatar University, Qatar

In this paper we are interested in studding supply chain situations where n agents can coordinate their actions to generate some savings. In this context, two questions naturally arise: how to find "best" coalitions, and how to distribute the benefits produced by the cooperation among the among the agents.

043-1182 What is the best competition parameter? An experimental research

Ehsan Elahi, Assistant Professor, University of Massachusetts, Boston, United States
Roger Blake, Assistant Professor, University of Massachusetts, Boston, United States

Theoretical results predict that the intensity of the competition between suppliers who compete for the demand share of a buyer depends on the parameter based on which the competition is designed. In this research we want to investigate if the decision makers in practice follow the theoretical predictions.

043-0789 The role of social preferences in buyer-supplier business integration

Alessandro Ancarani, Associate Professor, University of Catania, Italy
Carmela Di Mauro, Associate Professor, University of Catania, Italy
Florian Schupp, CPO, Schaeffler Group, Germany

We investigate whether some aspects of social preferences of buyers and suppliers, namely trust propensity and inequality aversion, are related to B-S business integration and strategy alignment, through the mediation of inter-firm trust and reciprocity. Results from a case study carried out in a large multinational company confirm our hypothesis.

043-0028 The Effect of Intrinsic Motivation and External Reward on Overall Motivation and Performance

Rosa Hendijani, Student, University of Calgary, Canada
Diane Bischak, Associate Professor, University of Calgary, Canada

Psychologists commonly argue that performance-contingent rewards undermine motivation and performance. However, previous studies have not appropriately examined the relationship between performance-contingent rewards, motivation and performance. Our experimental study addresses this issue. Unlike psychologists' predictions, our results show that performance-contingent rewards are actually rewarding and can enhance both motivation and performance.

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Saturday, 12:30 PM - 02:00 PM, Salon B — *Track:* Healthcare Operations Management

Session: Modeling and Optimization of Healthcare Delivery Systems

Chair(s): Jonathan Helm

043-0469 Patient Prioritization and Resource Allocation Decisions in Mass-Casualty Incidents

Alex Mills, Assistant Professor, Indiana University, United States
Serhan Ziya, Associate Professor, University of North Carolina, United States
Nilay Argon, Associate Professor, University of North Carolina, United States

When multiple mass-casualty incidents compete for limited resources, emergency planners must decide both how to allocate resources and how to prioritize different classes of patients. We show that the resource allocation decision is strongly related to the method of patient prioritization and develop efficient policies for solving these problems.

043-1167 Patient-Bed Assignment Policies in Hospital Systems

Jacqueline Griffin, Assistant Professor, Northeastern University, United States
Pinar Keskinocak, Professor, Georgia Institute of Technology, United States

To alleviate overcrowding in hospitals, hospitals may implement policies that address the management of patient arrivals through the redirection of patients to other hospitals. We model the hospital unit as a Markov chain and develop type-specific threshold policies for patient assignment while simultaneously addressing three distinct objectives.

043-1487 Optimal Nursing Home Staffing and Admission Policies

Otis Jennings, Associate Professor, Columbia University, United States
Francis De Vericourt, Associate Professor, INSEAD, France

We consider a nursing home facility with a financially heterogeneous customer base. Candidate residents are categorized according to their expected contribution to the home's long run revenue stream. The home is subject to nurse-to-resident ratio staffing requirements and hiring setup costs. We explore the optimal admissions/staffing policy.

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Saturday, 12:30 PM - 02:00 PM, Salon C — *Track:* Sustainable Operations

Session: Sustainability and CSR in Service Operations

Chair(s): Jie Zhang

043-0309 A Case Study in the Evolution of Sustainability: Baxter International Inc.

Kanwalroop Dhanda, Associate Professor, Depaul University, United States

Baxter International Inc. is a global, diversified healthcare company recognized for its efforts towards environmental/sustainability performance and reporting. This case study articulates the evolution of Sustainability at Baxter. Going forward, it would be noteworthy to see whether Baxter can keep up its momentum and continue to be a sustainability leader.

043-0470 An Empirical Investigation of Collaborative Green Projects in U.S. Hotel Industry

Jie Zhang, Assistant Professor, University of Vermont, United States
Benjamin Lawrence, Assistant Professor, Cornell University, United States

This panel study aims to understand how organizational form (chain-affiliated vs. independent) may impact project performance during environmental certification process. Owners/developers generally bear the full cost of project development yet the brand corporation also benefits from increased brand equity. Reducing project delays and abandonment under perceived inequality is critical.

043-1117 Save the planet - kill the service

Scott Sampson, Professor, Brigham Young University, United States

A phenomenon has been taking place in recent years known as deservitization, where interactions between service providers and customers are becoming more automated with greater opportunities for customer self-service. This presentation will review motivations and examples of deservitation, highlighting the impacts of deservitation on sustainability.

043-1377 Reverse Channel Design and Remanufacturing Strategies

Lan Wang, Student, University of Florida, United States
Divakar Rajamani, Professor, University of Texas Dallas, United States
Tharanga Rajapakshe, Assistant Professor, University of Florida, United States
Asoo Vakharia, Professor, University of Florida, United States

We examine the reverse channel design decision by focusing on three strategies (a) in-house; (b) third party; and a (c) hybrid strategy. Our analysis considers the demand side impact of cannibalization of new products; the supply side impact of uncertain yield; and the stage of the product life cycle.

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Saturday, 12:30 PM - 02:00 PM, Salon D — *Track:* Sustainable Operations

Session: Managing carbon emissions in supply chains

Chair(s): Dincer Konur

043-0205 Integrated Inventory Control and Truckload Transportation under Carbon Emissions Regulations

Dincer Konur, Assistant Professor, Missouri University of Science And Technology, United States

This study analyzes an integrated inventory control and transportation planning problem with carbon emissions regulation policies. In particular, we investigate the economic order quantity model with truckload transportation under carbon cap, carbon cap and trade, carbon cap and offset, and carbon taxing policies.

043-0759 Carbon reduction allocation and coordination of make-to-order supply chain

Ping He, Associate Professor, University of Science & Technology, China
Jie Ren, Student, University of Science & Technology, China
Yiwen Bian, Associate Professor, Shanghai University, China

This paper investigates the carbon reduction allocation in make-to-order supply chain with a manufacturer and a retailer. Conditioned on who has the allocation right, four decentralized cases and one centralized case are considered and compared. Contracts are proposed to coordinate the supply chain. Some novel findings and conclusions are achieved.

043-1146 Optimal production planning of a monopolistic manufacturer under cap-and-trade regulation

Ping He, Associate Professor, University of Science & Technology, China
Guowei Dou, Student, University of Science & Technology, China
Wei Zhang, Associate Professor, University of Science & Technology, China

This paper investigates the operational decisions of a monopolistic manufacturer that produces a product under cap-and-trade regulation. The emission permits buying and selling prices are assumed different. Optimal production and pricing decisions under various circumstances are given. We find that the total emission can decreases in the emission per product.

043-1257 Joint Decisions for Inventory Replenishment and Emissions Reduction Investment

Aysegul Toptal, Assistant Professor, Bilkent University, Turkey
Hasim Ozlu, Student, Bilkent University, Turkey
Dincer Konur, Assistant Professor, Missouri University of Science And Technology, United States

In this study, a retailer's emissions reduction investment and inventory replenishment decisions are analyzed under different governmental regulations on carbon emissions. Three different carbon emission policies are considered, those are cap, tax, and cap and trade. Analytical and numerical results on the comparison of the different policies are obtained.

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Saturday, 12:30 PM - 02:00 PM, Salon G — *Track:* Supply Chain Management

Session: Buyer-Supplier Relationship

Chair(s): Shailesh Kulkarni

043-0013 Structural Supply Chain Co-opetition and Inventory Management Performance: A Case-based "Beer Game" Simulation

Jeff Shockley, Assistant Professor, College of Charleston, United States
Gary Fetter, Assistant Professor, Radford University, United States

We develop a case-based co-opetitive supply chain simulation to compare the effects of these network structures on inventory management performance. Co-opetitive distribution strategies are found be most beneficial when supply chains are characterized by more uncertain demand, greater supplier membership, high product substitution rates, and have a longer supply reach.

043-0069 Evaluation Of Sustainable Interactions Between Customer And Supplier: A Case Study In Machining

Ana Jordan, Professor, Universidade Nove De Julho, Brazil
Rosangela Vanalle, Professor, Universidade Nove De Julho, Brazil
Elesandro Baptista, Professor, Universidade Nove De Julho, Brazil

This article aims to evaluate the sustainable interaction of machining processes for a global manufacturer of cutting tools for metal-mechanical industry and its suppliers. The research is exploratory, qualitative approach, accomplished through a case study using the method GAIA. The results of applying this method show satisfactory results

043-1680 Impact of Informational Lead time on Supply Chain Inventory and Inventory Cost

David Nowicki, Associate Professor, University of North Texas, United States
Subramaniam Ponnaiyan, Student, University of North Texas, United States
Shailesh Kulkarni, Associate Professor, University of North Texas, United States
Wesley Randall, Assistant Professor, University of North Texas, United States

The tradeoff between inventory and customer service remains unresolved in some contexts. Our study aims to reduce the inventory by reducing the variability of the lead time. Capturing a new notion - informational lead time , our models help improve profit with no negative impact on customer service levels.

188 Saturday, 12:30 PM - 02:00 PM, Salon H *Track:* Supply Chain Management
Session: Reverse Logistics
Chair(s): Francisco Freires

043-1183 Nature – problem solver for complex logistic and supply chain challenges?

Franz Staberhofer, Professor, LOGISTIKUM Steyr - the logistics competence of the FH Upper Austria, Austria
Tommy Rablbauer, Reader, LOGISTIKUM Steyr - the logistics competence of the FH Upper Austria, Austria

Purpose of this paper is the confirmation that logistical-systems exist naturally and act as problem solver. By literature review we identified major capabilities inside those systems and analyzed the potential practical impact on business requirements. We propose that naturally evolved solutions can be a successful answer for complex logistical challenges.

043-1420 Determinants for Effectiveness and Efficiency in Reverse Logistics Systems (Rls) - An Empirical Study

Francisco Freires, Associate Professor, Universidade Federal da Bahia, Brazil

In this paper, a product type (scraptyres) and its physical properties were studied. The findings show a relationship between postponement, cooperation, agile strategies and product properties on the effectiveness and efficiency of reverse logistics systems.

043-0591 A pragmatic procedure for deciding the need of implementing reverse logistics

Ashok Mehatha, Professor, Sri Siddhartha Institute of Technology, India
Ravishankar Basappa, Professor, BMS college of engineering, India
S Maheshwari, Student, BMS college of engineering, India

The e-waste management signifies exhilarating growth for reverse logistics industry and emphasizing the need of OEM to adopt reverse logistics to maximize their returns. This paper provides a pragmatic procedure for deciding the need of implementing reverse logistics for industries that influences the decision making process.

043-0514 A macro-environmental analysis of reverse logistics practices in India

Ashok Mehatha, Professor, Sri Siddhartha Institute of Technology, India
Basappa Ravishankar, Professor, BMS college of engineering, India
S Maheshwari, Student, BMS college of engineering, India

An attempt is made to understand the sustainability in the market and environmental perspective by studying reverse logistics business model as it uncover the critical issues, key challenges faced in practicing reverse logistics and attempts to identify the gap and potential problem area for improvement in the context of Indian industries.

189 Saturday, 12:30 PM - 02:00 PM, Salon I *Track:* Humanitarian Operations and Crisis Management
Session: Appropriate Objective Functions for Humanitarian Logistic Models
Chair(s): Jose Holguin-Veras

043-0229 The role of welfare economics and deprivation costs in humanitarian logistic models

Jose Holguin-Veras, Professor, Rensselaer Polytechnic Institute, United States
Noel Perez, Student, Rensselaer Polytechnic Institute, United States
Miguel Jaller, Student, Rensselaer Polytechnic Institute, United States
Luk Van Wassenhove, Professor, INSEAD, France
Felipe Aros, Student, Rensselaer Polytechnic Institute, United States

The presentation discusses the use of welfare economic principles in post-disaster humanitarian logistic models. This quest's central goal is to take into account the human suffering associated with the lack of access to a good or service, which is referred to in the paper as deprivation cost.

043-1521 Comparison of Different Proxy Measures Used as Objective Function for Post-Disaster Humanitarian Logistics

Jose Holguin-Veras, Professor, Rensselaer Polytechnic Institute, United States
Miguel Jaller, Student, Rensselaer Polytechnic Institute, United States
Noel Perez, Student, Rensselaer Polytechnic Institute, United States
Felipe Aros-Vera, Student, Rensselaer Polytechnic Institute, United States
Luk Van Wassenhove, Professor, INSEAD, France

The paper builds on the authors' findings about the proper objective function needed for post-disaster humanitarian logistics models that take into account human suffering, and discusses the numerical experiments conducted to illustrate the impacts of using proxy approaches from the literature and the one–deprivation costs–introduced by the authors.

043-1391 Using expert preferences to assess trade-offs among multiple objectives for humanitarian aid delivery

Erica Gralla, Assistant Professor, George Washington University, United States
Jarrod Goentzel, Lecturer, Massachusetts Institute of Technology, United States
Charles Fine, Professor, Massachusetts Institute of Technology, United States

Modeling approaches to support aid delivery planning require objective functions to guide trade-offs among the multiple goals of aid delivery. This paper values the performance of aid delivery plans, based on expert preferences over five key objectives, including the amount delivered, prioritization by commodity and destination, speed, and cost.

043-0525 Willingness to Pay for Water: An Approximation to Deprivation Costs

Johanna Amaya, Student, Rensselaer Polytechnic Institute, United States
Jose Holguin-Veras, Professor, Rensselaer Polytechnic Institute, United States

This paper presents preliminary estimates of deprivation costs. The study evaluated the willingness to pay for water consumption in post-disaster situations using stated preference scenarios. The model found a non-linear relation between willingness to pay, deprivation time, and the expected time to normality.

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Saturday, 12:30 PM - 02:00 PM, Salon J
Track: Humanitarian Operations and Crisis Management
Session: Effective Management of Response
Chair(s): Aruna Apte

043-0285 Gradation for demand urgency of emergency demand points based on grey correlation analysis and ideal

jing Wang, Student, Huazhong University of Science & Technology, China
Hai-Jun Wang, Associate Professor, Huazhong University of Science & Technology, China

The authors proposed an index system for the classification of demand urgency in emergency. It concludes three aspects of six indices. Then the specific method for the classification of demand urgency of emergency demand points was proposed, which fused fuzzy theory, grey theory, multi-attribute decision making and ideal solution.

043-0241 Design of Humanitarian Supply Chain Model for the Great East Japan Earthquake

Mine Kabata, Student, Tokyo Metropolitan University, Japan
Yasutaka Kainuma, Associate Professor, Tokyo Metropolitan University, Japan

The Great East Japan Earthquake in 2011 caused a shortage of relief supplies for some sufferers. In this research, we evaluate the handling of operations of the case in terms of the important six principles for the design of SCM for DROs. The mathematical model is proposed and investigated.

043-0431 Tactical network planning for food aid distribution in Kenya

Marie-Ève Rancourt, Assistant Professor, Universite Du Quebec A Montreal, Canada
Jean-François Cordeau, Professor, Hec Montreal, Canada
Gilbert Laporte, Professor, Hec Montreal, Canada
Ben Watkins , Technical Director, Kimetrica, Kenya

Kenya is affected by periodic droughts, which have a profound effect on seasonal food crises. We present a mathematical programming based methodology for the design of food aid distribution networks. Various sensitivity analyses enable to estimate the impacts of the beneficiary walking time on the response system and stakeholder welfare.

043-0558 Influencing Factors for Effective Emergency Response: Empirical Evidence from Tri-Lakes Monument Fire District

Ying Fan, Assistant Professor, University of Colorado Colorado Springs, United States
Monique French Dooley, Associate Professor, University of Colorado Colorado Springs, United States
Gary Stading, Professor, University of Houston Downtown, United States

Emergency preparedness and response time are key indicators of effective emergence response operations. We investigate the impact of incident characteristics, scheduling management, vehicle coordination and communication on emergency response. Factor analysis and structural equation modeling are used to analyze 12057 incidents over 9 years recorded in a Fire Program Database.

043-1590 Evacuating Mobility-Challenged People in a Short-Notice Disaster

Aruna Apte, Assistant Professor, Naval Postgraduate School, United States
Susan Heath, Assistant Professor, Naval Postgraduate School, United States

In domestic disasters, State or local governments are responsible for coordinating evacuation plans for all populations. We address the challenging combinatorial optimization problem of evacuating mobility-challenged people from their individual locations in a short-notice disaster. We formulate the problem as a binary IP and solve it using an ACO algorithm.

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Saturday, 12:30 PM - 02:00 PM, Suites I
Track: General Track
Session: General Topics - Project Management
Chair(s): Jean harvey

043-1427 A Platform View of Regional Innovation Systems

Ralph Maurer, Assistant Professor, A.B. Freeman School of Business, United States
Benjamin Alexander, Student, A.B. Freeman School of Business, United States
Geoffrey Parker, Professor, A.B. Freeman School of Business, United States

This research addresses the strategy-related limitations of the regional innovation system (RIS) literature by developing a multi-sided platform perspective. As a multi-sided platform, the region's primary role is to consummate the match between certain constituent groups at different stages of the innovation process (e.g., researchers to entrepreneurs, entrepreneurs to capital).

043-0710 Operations Reality Show: An Experiential Service Learning and Storytelling Project

Xin Ding, Assistant Professor, University of Houston, United States

The project described herein complements traditional instructional methods with service learning and storytelling methods to develop a student-centered learning environment. This presentation describes the scope and steps for this project, shares practical tips and project examples, and concludes with a discussion on the effectiveness of the project.

043-1458 Project management and process management: a tale of two communities

Jean harvey, Professor, MasterCard, Canada

Processes and hence, systems theory (Von Bertalanffy, 1972) , are at the core of the POM. Project management is, according to Meredith (2009), an ancillary domain. The relations between the two are numerous, complex, and poorly understood. A model is proposed to shed some light on these connections.

043-0130 Experiential Learning: A Case of Advanced Project Management

Dana Johnson, Professor, Michigan Technological University, United States

PMI leads the development of project management processes and standards. The West Michigan Chapter of PMI conducted a pilot project management competition called THE Project 2012. Presented will be the alignment of experiential learning in an advanced project management setting to achieve higher order learning goals based on Bloom's Taxonomy.

192 Saturday, 12:30 PM - 02:00 PM, Suites II — *Track:* Production Planning and Scheduling
Session: Decision Making Under Yield Uncertainty
Chair(s): Saurabh Bansal

043-0624 Estimating Parameters for Inventory Management with Limited Historical Data

Saurabh Bansal, Assistant Professor, Penn State University University Park, United States
Chun-Miin Chen, Student, Penn State University University Park, United States
Doug Thomas, Associate Professor, Penn State University University Park, United States

Inventory control parameters are set to achieve a specified service level given distributions of demand and lead time. In practice, these distributions must be estimated from limited historical data. Furthermore, demand and lead times may be correlated. We investigate how different estimation approaches affect inventory system performance.

043-0834 A Heuristic Approach for the Disassemble-to-order Problem under Binomial Yiel

Karl Inderfurth, Professor, Universitaet Magdeburg, Germany
Ian Langella, Associate Professor, Shippensburg University, United States
Sandra Transchel, Associate Professor, Kuehne Logistics University, Germany
Stephanie Vogelgesang, Student, Universitaet Magdeburg, Germany

In disassemble-to-order (DTO) systems yields typically are either stochastically proportional (SP) or follow a binomial (BI) process whereas yield misspecification results in a lower penalty if BI yield is assumed compared to SP. We present a heuristic approach based on a decomposition of the underlying non-linear stochastic optimization problem.

043-0566 Boundary Conditions for using Alternative Objectives in Project Scheduling

Anurag Agarwal, Associate Professor, University of South Florida, United States

A project scheduling problem can be solved using a variety of objectives such as minimize makespan, minimize cost, minimize lateness, time,cost tradeoff etc. In this paper we present the boundary conditions on which objective is economically the best alternative to help to help the manger decide the best objective function.

193 Saturday, 12:30 PM - 02:00 PM, Suites III — *Track:* Empirical Research in Operations Management
Session: Empirical Research in Supply Chains
Chair(s): Anupam Agrawal

043-0066 Organizing for Quality

Anupam Agrawal, Assistant Professor, University of Illinois Urbana-Champaign, United States

We suggest that organizational structure of a firm can infuence its supply chain relation-ships by influencing the process of knowledge creation and use with the suppliers, resultingin enhanced quality performance.

043-0239 An Investigation of Justice in supply chain relationships and their performance impact

Ram Narasimhan, Professor, Michigan State University, United States
Sriram Narayanan, Assistant Professor, Michigan State University, United States
Ravi Srinivasan, Assistant Professor, Loyola University Maryland, United States

We outline a different view of how the justice dimensions impact performance. We demonstrate that an increase in procedural, distributive or interactional justice results in a significant and positive improvement in performance only if the specific justice dimension is the "bottleneck" in the relationship.

043-1094 Empirical analysis of sources of innovation failure

Ujjal Mukherjee, Student, University of Minnesota, United States

In this paper we use ten years of medical device recall data to analyze sources of innovation failure. We take a life cycle view of new product innovations starting from conceptualization to consumption. Through the life cycle lens, we look at the relative impact of each stage on product performance.

043-0128 Firm Performance in Dynamic Environments: The Role of Operational Slack and Operational Flexibility

Jeremy Kovach, Student, Georgia Institute of Technology, United States
Manpreet Hora, Assistant Professor, Georgia Institute of Technology, United States
Pankaj Patel, Assistant Professor, Ball State University, United States

Prior research on the benefits from operational slack and operational flexibility is inconclusive. This study attempts to reconcile these discrepancies by considering the unpredictable and unstable aspects of a firm's dynamic environment. We find that operational flexibility (slack) benefits firms in unpredictable (unstable) markets, but not in predictable (stable) markets.

043-0369 Supply network structure, relationship strength, and firm innovation

Marcus Bellamy, Student, Operations Management, United States
Soumen Ghosh, Professor, Georgia Institute of Technology, United States
Manpreet Hora, Assistant Professor, Georgia Institute of Technology, United States

We demonstrate the value in assessing both structural properties of supply chain networks and customer/supplier value as drivers of firm innovation. We develop our hypotheses linking a firm's structural properties and relationship (tie) strength to their level of innovation. Empirical analysis of secondary data provides some novel preliminary findings.

194 Saturday, 12:30 PM - 02:00 PM, Suites IV *Track:* Healthcare Operations Management
Session: Healthcare Supply Chains: Quality, Risk & Influenza Vaccines
Chair(s): Xinghao Yan

043-0862 Risk Analysis and Mitigation Strategies for Pharmacy Supply Chain in Qatar

MohdNishat Faisal, Assistant Professor, Qatar University, Qatar

Qatar healthcare services are largely dependent on the state that makes huge investments in purchasing medicines from various parts of the World. This paper investigates various risks that might impact the pharmacy supply chains and using interpretive structural modeling (ISM) technique models the barriers to effective management of these risks.

043-0390 Securing the Sustainability of Global Medical Nuclear Supply Chains Through Risk Management and Optimization

Anna Nagurney, Professor, University of Massachusetts Amherst, United States
Ladimer Nagurney, Associate Professor, University of Hartford, United States
Dong Li, Student, University of Massachusetts Amherst, United States

We develop a network model for the optimization of the complex operations of medical nuclear supply chains, with a focus on minimizing the total operational cost, the total waste cost, and the risk associated with this highly time-sensitive and perishable, but critical, product used in healthcare diagnostics.

043-0271 Coordination of the Influenza Vaccine Supply Chain With Costly Effort to Increase Population Participation

Xinghao Yan, Assistant Professor, University of Western Ontario, Canada
Gregory Zaric, Associate Professor, University of Western Ontario, Canada

We study the influenza vaccination supply chain consisting of health authority, manufacturer, and population. The health authority determines the vaccine order quantity and exerts effort to impact vaccination supply and vaccination rate, respectively. We analyze the equilibrium solutions and design the coordinating contracts when different pieces of information are verifiable.

195 Saturday, 12:30 PM - 02:00 PM, Suites V *Track:* Manufacturing Operations
Session: Emerging Challenges in Manufacturing Supply Chains - An Expert Panel's Perspective
Chair(s): Steve Melnyk

043-1575 Emerging Challenges in Manufacturing Supply Chain - An Expert Panel's Perspective

Steve Melnyk, Professor, Michigan State University, United States
Craig Carter, Associate Professor, Arizona State University Tempe, United States
Phillip Carter, , ,
Barbara Flynn, Professor, Indiana University, United States

The emphasis on contract manufacturing, globalization and servicization have increased manifold in recent years. This expert panel discussion would explore the set of challenges due to these recent developments and present insights into the strategic approaches to deal with the challenges.

196 Saturday, 12:30 PM - 02:00 PM, Suites VI *Track:* Product Innovation and Technology Management
Session: Managing the Innovation Process
Chair(s): Svenja Sommer

043-0493 How Digital Design, Rapid Prototyping, and a Sharing Culture are Changing New Product Development

Sebastian Fixson, Associate Professor, Babson College, United States
Tucker Marion, Assistant Professor, Northeastern University, United States

We study how technological advancements in digital design and rapid prototyping, together with a shift towards a sharing culture, are altering the nature of product development processes. Using a set of case studies, we explore how participation, ownership, and the locus of expertise shift between designers, producers, and consumers.

043-0535 Prize Amount and Competition in Unblind Innovation Contests

Jesse Bockstedt, Assistant Professor, University of Arizona, United States
Cheryl Druehl, Assistant Professor, George Mason University, United States
Anant Mishra, Assistant Professor, George Mason University, United States

Innovation contests are being widely used by firms to generate creative solutions to complex problems. Using a large panel dataset of unblind innovation contests from an online logo-design platform, we examine the interplay or prize amount and contestant's prior winning experience on the dynamics of competition in unblind innovation contests.

043-1234 Ambiguous Problem Complexity, Group Synergy and Performance: An Experiment

Svenja Sommer, Associate Professor, Hec Paris, France
Elliot Bendoly, Professor, Emory University, United States
Stylianos Kavadias, Associate Professor, Judge Business School, Great Britain

We conduct two computer-based experiments to explore the effects of complexity on the benefits of collaborative problem solving in controlled settings. The first experiment examines the benefits of different group configurations; the second investigates whether individuals with distinct specialized experience with the task can provide gains to group performance.

043-1382 Submission Transparency in Idea Generation

Joel Wooten, Student, University of Pennsylvania, United States
Karl Ulrich, Professor, University of Pennsylvania, United States

In innovation tournaments, administrators face a variety of decisions that impact the outcome. We examine the effect of submission transparency by comparing blind and unblind contests using field experiments. We control submission visibility and show individual-level differences in idea quality and uniqueness from the tournament participants - the solvers.

197 Saturday, 12:30 PM - 02:00 PM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: Organizational Learning Issues
Chair(s): Aravind Chandrasekaran

043-0122 Avoiding Capability Trap through Contingent Contracts: Role of cash and knowhow in startups

Sinan Erzurumlu, Assistant Professor, Babson College, United States
Moren Levesque, Professor, York University, Canada
Fehmi Tanrisever, Assistant Professor, Eindhoven University of Technology, Netherlands
Nitin Joglekar, Associate Professor, Boston University, United States

Startup firms must cooperate with the right investor who can meet their needs for cash and knowhow to navigate highly uncertain business prospects. The authors offer insights for managing this issue by examining the terms of a contingent contract for the ownership sharing and cash investment in a two-stage model.

043-0236 Conformance Quality, Experiential Quality and Financial Performance in Professional Service Organizations

Claire Senot, Student, Ohio State University, United States
Aravind Chandrasekaran, Assistant Professor, Ohio State University, United States
Peter Ward, Professor, Ohio State University, United States
Anita Tucker, Associate Professor, Harvard University, United States

Professional service organizations have to combine conformance quality - adherence to technical standards, and experiential quality - ability to adapt the delivery of service to the unique customer. Using a panel data of 7481 hospital years, we find a strong synergy between conformance and experiential quality relative to financial performance.

043-0408 The Impact of Exploration, Exploitation and Learning from Experience on Innovation Success and Failure

Jennifer Bailey, Student, Georgia Institute of Technology, United States
Manpreet Hora, Assistant Professor, Georgia Institute of Technology, United States
Cheryl Gaimon, Professor, Georgia Institute of Technology, United States

We propose a model of learning in the innovation process. We utilize patent data from the biotech industry to examine the impact of exploration, exploitation and learning from experience, as substitutes and complements. Our two-pronged approach examines how an ambidextrous strategy can improve innovation success and mitigate innovation failure.

043-0487 Partial Outsourcing and Linked Learning Processes

Edward Anderson, Associate Professor, University of Texas Austin, United States
Xiaoyue Jiang, Assistant Professor, Tulane University, United States
Geoffrey Parker, Professor, Tulane University, United States

Firms are increasingly outsourcing knowledge work to a worldwide supply base and then re-insourcing it. The key is that outsourcing may hamper integrating outsourced work back into the final product. We build an optimal control theory model to study this problem by leveraging learning curve theory to explain empirical evidence.

198 Saturday, 12:30 PM - 02:00 PM, Matchless — *Track:* Inventory Management
Session: Control of Stock Outs in Inventory Management
Chair(s): Marco Bijvank

043-0810 The value of accounting for demand seasonality in retail inventory management

Joachim Ehrenthal, Analyst, University of St. Gallen, Switzerland
Dorothee Honhon, Assistant Professor, Eindhoven University of Technology, Netherlands
Tom Van Woensel, Professor, Eindhoven University of Technology, Netherlands
Joerg Hofstetter, Assistant Professor, University of St. Gallen, Switzerland

We investigate the value of accounting for demand seasonality in a single-location, single-item periodic-review lost sales inventory problem with seasonal demand. We study how the long run average cost varies with the degree of demand seasonality incorporated in the model and apply our results to a real life dataset.

043-0817 Myopic replenishment policies for inventory systems with lost sales

Marco Bijvank, Assistant Professor, Rotterdam School of Management, Netherlands

We study the control of a single item inventory system with fixed order cost where excess demand is lost. It is impossible to find an optimal replenishment policy due to the course of dimensionality. We propose a myopic policy that can be used when demand is either stationary or non-stationary.

043-1268 Control of Stock Outs via Lateral Transshipment and Pipeline Stock Flexibility

Guangyuan Yang, Student, Erasmus University Rotterdam, Netherlands
Rommert Dekker, Professor, Erasmus University Rotterdam, Netherlands
Adriana Gabor, Associate Professor, Erasmus University Rotterdam, Netherlands
Sven Axsater, Professor, Lund University, Sweden

When transshipment time is not negligible, in case of stock outs, pipeline stock can be a cheaper and faster option than lateral transshipment. We consider this aspect and analyze the effects of these options on service performance. Our results indicate that including pipeline stock flexibility always improves service performance.

043-1568 Asymptotic Optimality of Constant-Order Policies for Lost Sales Inventory Models with Large Lead Times

David Goldberg, Assistant Professor, Georgia Institute of Technology, United States
Dmitriy Katz-Rogozhnikov, Research Staff Member, IBM, United States
Yingdong Lu, Research staff member, IBM, United States
Mayank Sharma, Research Staff Member, IBM, United States
Mark Squillante, Research Staff Member, IBM, United States

Lost sales models with large lead times are notoriously difficult to optimize due to the curse of dimensionality. We show that a very simple constant-order policy is asymptotically optimal due to the significant randomness between order placement and receipt. Our proof combines a random walk suprema coupling and queueing theory.

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Saturday, 12:30 PM - 02:00 PM, Mattie Silks — *Track:* Service Operations
Session: Intersection of Hospitality and Healthcare
Chair(s): Rohit Verma

043-1122 The Intersection of Hospitality and Healthcare: Exploring Lessons for Research and Practice

Rohit Verma, Professor, Cornell University, United States
Kenneth Boyer, Professor, Ohio State University, United States
Craig Froehle, Associate Professor, University of Cincinnati, United States
Srinagesh Gavirneni, Associate Professor, Cornell University, United States
Rachna Shah, Associate Professor, University of Minnesota, United States

Both healthcare and hospitality depends on the core principle of creating a culture of respectful treatment and valuing their stakeholders. Despite obvious differences regarding the purpose, both types of organizations also share many common operational functions. The purpose of this panel discussion is to find areas of research.

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Saturday, 12:30 PM - 02:00 PM, Molly Brown — *Track:* Marketing and Operations Management Interface
Session: Consumer Behavior I
Chair(s): Matthias Holweg

043-1317 On 'Ripple Effect' in Secondary Markets: The Unintended Consequences of Operations Strategy Decisions

Matthias Holweg, Associate Professor, University of Cambridge, United Kingdom
Paul Kattuman, Associate Professor, University of Cambridge, United Kingdom

A key decision in Operations Strategy is how to meet customer orders. One common way is to make products to forecast and use incentives to 'shift product'. We empirically show that such rebate-based 'push' strategies have a significant lagged 'ripple effect' on residual value in the used goods market.

043-1452 The influence of music in consumer behavior

Otávio Freire, Professor, Universidade Nove De Julho, Brazil
Eduardo Santos, Student, Universidade Nove De Julho, Brazil

This article shows that there is influence of music in purchase decision. For obtaining the information, we based this research on literature review in national and international journals, in the period of 2008 and 2012, by the keywords: music behavior, music in retail environment, background music and music consumer.

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Saturday, 12:30 PM - 02:00 PM, Spruce — *Track:* Healthcare Operations Management
Session: Operations Analysis of Health Care
Chair(s): Tinglong Dai Soo-Haeng Cho

043-0322 ICU Admission Control: An Empirical Study of Capacity Allocation and Patient Outcomes

Song-Hee Kim, Student, Columbia University, United States
Carri Chan, Assistant Professor, Columbia University, United States
Marcelo Olivares, Associate Professor, Columbia University, United States
Gabriel Escobar, MD, Kaiser Permanente, United States

We develop an empirical model to explain how admission to an Intensive Care Unit are affected by congestion level, which is estimated using a detailed patient level dataset. This routing model is used to identify the effect of routing decisions on patient outcomes using an Instrumental Variable approach.

043-0223 Simultaneous Location of Trauma Centers and Helicopters for Emergency Medical Service Planning

Soo-Haeng Cho, Assistant Professor, Carnegie Mellon University, United States
Hoon Jang, Student, K A I S T, Korea, Republic of (South Korea)
Taesik Lee, Associate Professor, K A I S T, Korea, Republic of (South Korea)
John Turner, Assistant Professor, University of California Irvine, United States

We study the problem of simultaneously locating trauma centers and helicopters. Our problem poses a unique challenge because the locations of trauma centers affect the demand for helicopters, and vice versa. We apply our MINLP model and solution method to the design of a nationwide trauma care system in Korea.

043-0383 Linking Disaster Preparedness to Outcomes: An Empirical Test Using the 2009 H1N1 Pandemic

Subhashree Sundar, Student, University of Utah, United States
Jeff Stratman, Associate Professor, University of Utah, United States

Considerable resources are expended towards reducing the fallout from mass disasters like influenza pandemics. How disaster preparedness affects outcomes from mass disasters is unclear. Using the 2009 H1N1 influenza pandemic mortality data and disaster preparedness parameters, we propose a disaster preparedness triangle and demonstrate how disaster preparedness influences pandemic outcomes.

043-0162 Contracting for On-Time Delivery in the U.S. Influenza Vaccine Supply Chain

Tinglong Dai, Student, Carnegie Mellon University, United States
Soo-Haeng Cho, Assistant Professor, Carnegie Mellon University, United States
Fuqiang Zhang, Associate Professor, Washington University St Louis, United States

Motivated by the influenza vaccine industry, we consider a supply chain that involves three sources of uncertainties: design, delivery, and demand. Under these settings, we evaluate the performance of several well-know contracts, and propose new coordinating contracts that are reported in practice but not studied in the extant literature.

203 Saturday, 12:30 PM - 02:00 PM, Nat Hill *Track:* Retail Operations Management
Session: Bundling Strategies and/or Vertically Differentiated Products
Chair(s): Xiajun Pan Dorothee Honhon

043-0194 Optimal Bundling under Inventory Limitations

Qingning Cao, Student, University of Texas Dallas, United States
Kathryn Stecke, Professor, University of Texas Dallas, United States
Jun Zhang, Assistant Professor, University of Texas Dallas, United States

This paper examines a retailer's two-product bundling decision when the supply of one product is limited. This paper derives the retailer's optimal prices, stocking levels, and profits under unbundling and bundling. Demonstrating that limited supply can induce the retailer to bundle, this paper highlights a new supply-side rationale for bundling.

043-0397 Assortment Planning for High-Tech Products: Theoretical and Practical Considerations

Saurabh Bansal, Assistant Professor, Penn State University University Park, United States
Sandra Transchel, Associate Professor, Kuehne Logistics University, Germany
Mrinmay Deb, Student, Penn State University University Park, United States

We investigate production systems where the quality of the manufactured units has a large variance. The firms operating such systems create quality buckets or bins, test each unit to determine its bin, and sell all units in a bin at a same price. We determine the optimal assortment of bins.

043-1106 Product design for dual channels

Wenbo Cai, Assistant Professor, New Jersey Inst of Technology, United States
Ying-Ju Chen, Assistant Professor, University of California Berkeley, United States

We study how a seller should design products sold through his direct and indirect channels. Under the revenue sharing scheme, he should provide a high quality product at a premium price in the direct channel only when consumers are insufficiently sensitive. Quality differentiation is eliminated in a profit sharing scheme.

043-0795 Bundling Strategies for Vertically Differentiated Products

Dorothee Honhon, Assistant Professor, Eindhoven University of Technology, Netherlands
Xiajun Pan, Assistant Professor, University of Florida, United States

A firm has to determine the bundling and price strategy for a product category with vertically differentiated products. We show that all bundling strategies (i.e., mixed bundling, pure bundling or pure components) are possible when the firm maximizes profits and/or when there are capacity constraints on the components.

204 Saturday, 12:30 PM - 02:00 PM, Pomeroy *Track:* Operations Management and Economic Models
Session: Services
Chair(s): Shiliang Cui

043-1411 A Model of Rational Retrials in Queues

Shiliang Cui, Student, University of Pennsylvania, United States
Xuanming Su, Associate Professor, University of Pennsylvania, United States
Senthil Veeraraghavan, Associate Professor, University of Pennsylvania, United States

In many service settings, consumers usually have to wait in a queue to obtain the service. We study a single-server system with an observable queue where customers are allowed to retry in the future if the present line is too long. We characterize the equilibrium of such a queueing system.

043-1417 Blind Queues: The Impact of Consumer Beliefs on Revenues and Congestion

Shiliang Cui, Student, University of Pennsylvania, United States
Senthil Veeraraghavan, Associate Professor, University of Pennsylvania, United States

In many service settings, consumers join the queue without being fully aware of the parameters of the service provider. In such "blind" queues, consumers typically make their decisions based on limited service information. We study the impact of consumer beliefs over the service parameters on firm revenues and system congestion.

043-1503 Improving dual bounds in WEEE recollection

Roger Rios-Mercado, Professor, Universidad Autonoma De Nuevo Leon, Mexico
Jonathan Bard, Professor, University of Texas Austin, United States

In this talk, an improved integer-programming framework for the NP-hard problem of assigning recollection points to companies in the recollection of waste electric and electronic equipment is proposed. Extensive empirical assessment showing dramatic positive impact on running times over earlier approaches is presented.

043-1235 A New Fuzzy Method to Assess the Impact of ERP Implementation on Companies' Profitability and Trends

Mahdi Abbasi, Reader, Toyserkan Branch, Islamic Azad University, Toyserkan, Iran, Iran (Islamic Republic of)
Maryam Parsaei, Reader, University of Surrey, United Kingdom, Iran (Islamic Republic of)

This study applied a new Fuzzy method to demonstrate the impact of ERP implementation and its implementation approaches by considering financial information, profitability and business trend on 30 companies during 10 year period. Results provided a ranking inside companies and ERP implementation methods' categories plus, results' validity discussion.

205 Saturday, 12:30 PM - 02:00 PM, Salon E *Track:* Supply Chain Contracting
Session: Topics in Retail Operations
Chair(s): Mumin Kurtulus

043-0432 Timing of Service Investments for Retailers Under Competition and Demand Uncertainty

Olga Perdikaki, Assistant Professor, Texas A&M University College Station, United States
Dimitris Kostamis, Assistant Professor, University of North Carolina Chapel Hill, United States

Jayashankar Swaminathan, Professor, University of North Carolina Chapel Hill, United States

We study how retailers can time their service investments when demand for a product is uncertain and consumers care both about price and service when choosing which retailer to buy from. We model two different examples of service and examine the timing of service investments for two competing retailers.

043-0032 The Role of Manufacturer Competition and Limited Retail Shelfspace on the Emergence of Direct Store Delivery P

Mumin Kurtulus, Assistant Professor, Vanderbilt University, United States
Canan Savaskan, Associate Professor, Southern Methodist University, United States

Direct store delivery (DSD) refers to a business process where the supplier of a product delivers its product directly to the retail stores and replenishes the shelfs at the retail stores. We studies the role of manufacturer competition, limited shelf space and replenishment costs on the emergence of DSD practices.

043-0049 Product Variety and Distribution Channel Structure

Shanshan GUO, Student, Indiana University Bloomington, United States
Hans S Heese, Associate Professor, Indiana University, United States

Capturing the implications of product variety on both customer demand and production efficiencies, we compare a firm's optimal product variety decisions when selling directly to customers as opposed to when selling through an intermediary

043-1143 Competition and diversification: technology choice and resources allocation under technology change

Xiaolu Zuo, Student, City University of Hong Kong, China
John Liu, Professor, City University of Hong Kong, China

This paper studies the impact of the competition and diversification of two products on the choice of technology and resource allocation decision. The market share is affected by the technology level of the products. When technology change occurs new technology is adoptedsubject to the technology choice.

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Saturday, 12:30 PM - 02:00 PM, Salon F *Track:* Scheduling and Logistics
Session: Manpower Planning and Scheduling
Chair(s): Jay Heizer

043-1650 Teaching Scheduling and Logistics with Company Videos

Jay Heizer, Emeritus Professor, Texas Lutheran Univ, United States

Engage your students; make scheduling interesting; supplement a brief written case with a 9-minute video. With cooperation of the Orlando Magic, we have built a Gantt scheduling exercise and manpower table for a case for converting the Amway arena from a rock concert venue (Eagles) to a basketball court overnight.

043-1444 A Spreadsheet-based Model for University Course Scheduling

Rita Kumar, Professor, California State Polytech University Pomona, United States

We present a spreadsheet-based model for university course scheduling. The general problem is known to be NP-hard. We consider a simplified version, and develop a solution approach using Excel Solver. This involves two phases - an initial timetable assigning courses to timeslots, and a subsequent assignment of faculty to courses.

043-1485 Case: Supplier Selection at Kerneos Inc.

Ling Li, Professor, Old Dominion University, United States
Erika Marsillac, Assistant Professor, Old Dominion University, United States
Ted Kosiek, Student, Old Dominion University, United States

The case of Kerneos Inc. subsidiary in the United States will be presented. A number of issues related to supply chain management will be explored, such as the purchasing process at Kerneos Inc., vendor performance evaluation, vendor selection, and the buyer relationship management involved in supply chains.

043-1278 Barge Rotation vs. Barge Shuttle Services

Panagiotis Ypsilantis, Student, Rotterdam School of Management, Netherlands
Rob Zuidwijk, Professor, Erasmus University Rotterdam, Netherlands
Morteza Pourakbar, Assistant Professor, Erasmus University Rotterdam, Netherlands

The problem of a barge operator that serves container transport demand among several terminals is considered. A Markov Decision Process approach is developed to assess the long-run profitability and capacity utilization of barge rotation plans while considering stochastic demand, order due dates and barge delays.

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Saturday, 02:15 PM - 03:45 PM, Salon A
Track: Behavioral Issues in Operations Management
Session: Behavioral Forecasting
Chair(s): Enno Siemsen

043-0295 The effect of information and incentives on judgmental adjustments to statistical demand forecasts

Paul Goodwin, Professor, University of Bath, United Kingdom
Robert Fildes, Professor, Lancaster University, United Kingdom
Dilek Onkal, Professor, Bilkent University, Turkey

Forecasters in supply-chain companies often judgmentally adjustment statistical demand forecasts. This can improve accuracy when special events, like product promotions, are forthcoming, but adjustments are typically overoptimistic. We report experiments on how forecasters use information about imminent promotions when there are rewards for accurate forecasting or above expected demand uplift.

043-0341 What your retail store manager could do if you only asked

Rogelio Oliva, Associate Professor, Texas A&M University College Station, United States
Noel Watson, Founder and Principal, Ops Mend LCC, United States

Automated inventory replenishment systems are used by retailers to drive replenishment decisions. However, no automated system is able to capture it in its entirety the complexity of retail demand and store operations. Human intelligence, through empowered store managers, together with these automatic systems, can achieve higher retail performance.

043-1279 Overcoming the Planning Fallacy

Yael Grushka-Cockayne, Assistant Professor, University of Virginia, United States
Ioannis Fragkos, Student, University College London, United Kingdom
Bert De Reyck, Professor, University College London, United Kingdom
Daniel Read, Professor, University of Warwick, United Kingdom

How an organization manages its projects is critical to its success. Yet, firms routinely experience the Planning Fallacy: projects are delivered late, over-budget, or with reduced scope. We investigate project performance and describe our work with UK Network Rail on how to plan for the planning fallacy.

043-0254 The Anatomy of Newsvendor Order Decisions: Results from a Task Decomposition Experiment

Yun Shin Lee, Assistant Professor, K A I S T, Korea, Republic of (South Korea)
Enno Siemsen, Associate Professor, University of Minnesota, United States

We study the anatomy of a newsvendor order decision by decomposing it into point forecast, distribution forecast and service level decision and take a systematic approach to predict actual order behavior using these components. We also show how to target individual components to improve overall performance.

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Saturday, 02:15 PM - 03:45 PM, Salon C
Track: Sustainable Operations
Session: Standards and Eco-labels in OM
Chair(s): Pavel Castka

043-1129 Do organizations certified to ISO 9000 and ISO 14000 outperform non-certified organizations?

Pavel Castka, Associate Professor, University of Canterbury, New Zealand
Charles Corbett, Professor, University of California Los Angeles, United States

The impact of ISO 9000/14000 has been studied in numerous countries, across multiple industries, at early as well as later stages of standards' diffusion. In this paper, we will discuss the evidence on the impact in terms of financial performance, operational performance, environmental performance, health&safety as well as HR.

043-1186 Auditing Orientation, Auditing Quality, and Firm's Satisfaction with External Certifications

Daniel Prajogo, Associate Professor, Monash University, Australia
Pavel Castka, Associate Professor, University of Canterbury, New Zealand

External certifications are often used to account for hidden attributes of products; such as environmental attributes. In the paper, we demonstrate that firms oriented on continuous improvement focus on choosing reputable auditing firms and in turn gain an insightful audits. Insightful audits than determine the satisfaction with the certification.

043-1316 Impact of LEED Certification in Services: An Empirical Investigation of the US Hotel Industry

Matthew Walsman, Student, Cornell University, United States
Suresh Muthulingam, Assistant Professor, Cornell University, United States
Rohit Verma, Professor, Cornell University, United States

We investigate the impact of adoption of the LEED standards in the service industry. Using financial and operating data on US Hotels that got certified to the LEED standard, and corresponding matched samples of peer properties, we investigate the impact of adopting green building practices on revenues, productivity, and costs.

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Saturday, 02:15 PM - 03:45 PM, Salon D
Track: Sustainable Operations
Session: Supply Chain Sustainability & Product Returns
Chair(s): Gernot Lechner

043-0189 The Impact of Outsourcing on Supply Chain Sustainability and the Antecedents of Firm Insourcing Behavior

Steven Carnovale, Student, Rutgers University, United States
Sengun Yeniyurt, Associate Professor, Rutgers University, United States
Lei Lei, Professor, Rutgers University, United States
Kevin Lyons, Assistant Professor, Rutgers University, United States

Rosa Oppenheim, Professor, Rutgers University, United States

When a firm outsources a function (i.e. outside its ownership-boundaries) there are considerable risks. Particularly, the impact that outsourcing has on the firm's sustainability. When firms bring back outsourced activities it's known as insourcing. We investigate the impact that outsourcing has on sustainability and the antecedents of firm insourcing behavior.

043-1582 Impact of cannibalization on product returns for remanufacturing

Siddhartha Kushwaha, Student, IFHE University, India
Sourabh Bhattacharya, Associate Professor, IMT , India

The study is an effort to understand the impact of cannibalization on product return under various demand scenarios during product life cycle (PLC). A system dynamic (SD) model is used to estimate product return in single product single manufacturer without competition and no product differentiation setting.

043-0623 PAS 141: Goals, Intermediate Necessary Conditions (INCs) and research needs for successful uptake

Joao Quariguasi Frota Neto, Lecturer, University of Manchester, United Kingdom
Andrew Reade, CEO, Create UK, United Kingdom
Azadeh Dindarian, Student, University of Manchester, United Kingdom
Andrew Gibson, Professor, University of Manchester, United Kingdom

In 2011, the British Standards Institute lauched PAS141, a certification for product reuse. PAS141 has set ambitious goals, chiefly among those, to reduce e-waste in the UK. In this paper, we examine the necessary conditions that need to be exist if such goals are to be achieved.

043-0859 Optimal manufacturing/reprocessing-strategies for new production & acquisition/disposition of used products

Gernot Lechner, Student, University of Graz, Austria
Marc Reimann, Professor, University of Graz, Austria

Based on observations in the industry, a closed-loop supply chain with joint manufacturing-acquisition-disposition decisions is studied. The acquisition of used products is effort-dependent, and can therefore be controlled actively. Sales in previous periods limit the quantity of used products to acquire. The objective is to obtain an optimal acquisition-inventory-disposition strategy.

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Saturday, 02:15 PM - 03:45 PM, Salon G — *Track:* Supply Chain Management
Session: Distribution System
Chair(s): Amirhossein Meisami

043-0359 Critical factors of fuel distribution process in Brazil and its relevance to environmental management

Celio Tibes, Engineer, UNIVALI - Universidade do Vale do Itajai, Brazil
Francisco Freires, Associate Professor, Universidade Federal da Bahia, Brazil
Sidnei Marinho, Associate Professor, UNIVALI - Universidade do Vale do Itajai, Brazil

This paper analyzes the process of physical distribution of fuel in Brazil. As a main contribution, this study allowed a diagnosis of the sources that cause environmental impacts and the level of contamination, because the results indicate omission and lack of control regarding the influence and proportion of contamination.

043-0321 Music Supply Chain Management Changes in the Digitization Era

Alan Kuhar, Student, Fundacao Getulio Vargas, Brazil
Luiz Carlos Di Serio, Professor, Fundacao Getulio Vargas, Brazil

At the end of the 20th century, Napster had developed a new system to distribute music. Thenceforward the music production, distribution and sales have changed to a digitization era. Artists, recording companies and the retail needed to reinvent their competencies to meet the new behavioral needs of the music consumer.

043-1356 A Hybrid Genetic Algorithm for Supplier Selection and Network Optimization

Amirhossein Meisami, Student, Texas A&M University College Station, United States
Nima Salehi, Student, Univ of Tehran, Iran (Islamic Republic of)
Aida Khayatian, Student, K. N. Toosi University of Technology, Iran (Islamic Republic of)

The practicality of novel network optimization models based on innovative combination of financial and market-based factors such as price, cost, quality, and supplier's contribution background is irrefutable. In this study a hybrid approach (Fuzzy Analytic Network Process and Genetic Algorithm) is applied to provide more efficiency in the decision-making process.

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Saturday, 02:15 PM - 03:45 PM, Salon H — *Track:* Supply Chain Management
Session: Sourcing Strategy
Chair(s): Rajesh Srivastava

043-0708 Low cost not enough anymore: a sourcing paradox

Wenqing Zhang, Assistant Professor, Solbridge International School of Business, Korea, Republic of (South Korea)
Chung-Yean Chiang, Assistant Professor, Georgia Southern University, United States

This paper studies the sourcing choices in a two-echelon supply chain selling a procure-to-stock product to a price-sensitive and social welfare conscious market. The study is expected to show supports upon why a simple low-cost strategy may lose the competitive edge.

043-1372 Issues in outsourcing an IT/IS system for an SME

Elias Kirche, Associate Professor, Florida Gulf Coast University, United States
Rajesh Srivastava, Professor, Florida Gulf Coast University, United States

This paper presents findings from an SME which needed to update its IT/IS system to maintain a competitive advantage and quality of services as part of a worldwide network of logistics and transportation companies. Findings indicate that economic, human and competitive aspects influenced the firm's decision to outsource it IT/IS function.

043-1156 Quality control in a supply chain: Integrating or outsourcing inspections?

Shiqing Yao, Student, Chinese Univ of Hong Kong, Hong Kong
Kaijie Zhu, Associate Professor, Chinese Univ of Hong Kong, Hong Kong

We investigate two mechanisms, i.e., the buyer's inspections and the third party's inspections, in a supply chain. Through comparing these two mechanisms, we address the following questions: What are their inefficiencies? When should a manager outsource inspections? What characteristics of a third party will affect supply chain performance?

043-1127 The Influence of Trust and Buyer's Knowledge on Managerial Outsourcing Decisions

Qiong Chen, Student, Clemson University, United States
Aleda Roth, Professor, Clemson University, United States
Gulru Ozkan, Assistant Professor, Clemson University, United States
Fred Switzer, Professor, Clemson University, United States

We examine two salient aspects of a firm's production outsourcing strategy for a new product; namely how trust and buyer's knowledge act to systematically influence managers' decision-making to source production either directly or indirectly through an intermediary. We present a behavioral model, constructs and empirically validated measures.

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Saturday, 02:15 PM - 03:45 PM, Salon I — *Track:* Humanitarian Operations and Crisis Management
Session: Humanitarian Operations and Supply Chain Management
Chair(s): Alfonso Pedraza-Martinez

043-0368 Humanitarian Vehicle Supply Chains: Decentralization, Development and Disaster Response and Earmarked Funding

Maria Besiou, Assistant Professor, Kuehne Logistics University, Germany
Alfonso Pedraza-Martinez, Assistant Professor, Indiana University, United States
Luk Van Wassenhove, Professor, INSEAD, France

International humanitarian organizations often implement development programs and disaster response simultaneously, with varying levels of decentralization and earmarked funding. We model vehicle supply chains (VSCs). Our results suggest that the combination of these three factors affect humanitarian VSCs in counterintuitive ways, establishing clear differences with commercial supply chains.

043-1311 Vehicle Supply Chains for Disaster Response in International Humanitarian Organizations

Jon Stauffer, Student, Indiana University, United States
Alfonso Pedraza-Martinez, Assistant Professor, Indiana University, United States
Luk Van Wassenhove, Professor, INSEAD, France

We model the vehicle supply chain of an International Humanitarian Organization and propose the concept of a "temporary hub" in a major disaster area. A "temporary hub" can mitigate the operational constraints due to earmarked funding during disaster response while reducing total logistics costs in years without major disasters.

043-0931 Lexicographical static and dynamic flow models for relief operations

Begona Vitoriano, Associate Professor, Universidad Complutense De Madrid, Spain
Gregorio Tirado, Lecturer, Universidad Complutense De Madrid, Spain
F. Javier Martín-Campo, Lecturer, Universidad Complutense De Madrid, Spain
M. Teresa Ortuno, Associate Professor, Universidad Complutense De Madrid, Spain

A lexicographical dynamic flow model for humanitarian aid distribution planning according to the decision maker's preferences is presented. The model is validated in a realistic case study and a computational study is performed to compare it with a static one previously stated, proposing a coordination to improve their overall performance.

043-0458 Optimal Deployment of Emergency Supply Inventory under a Humanitarian Relief Objective

Yulan Wang, Assistant Professor, Hong Kong Polytechnic Univ, Hong Kong
Fang Liu, Assistant Professor, Nanyang Technological University, Singapore
Pengfei Guo, Assistant Professor, Hong Kong Polytechnic Univ, Hong Kong

We study how a central planner shall preposition a certain amount of emergency supply inventories (ESI) to minimize the total expected number of victim loss. We derive the expected loss function, show that this optimization problem is convex, and provide two algorithms to search for the optimal ESI allocation.

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Saturday, 02:15 PM - 03:45 PM, Suites I — *Track:* General Track
Session: General Topics - Operations Improvement
Chair(s): Surya Pathak

043-1346 Timing it to perfection: Secrets behind successful estimation of resources for ill-defined projects

Surya Pathak, Assistant Professor, University of Washington Bothell, United States
Mohan Tatikonda, Professor, Indiana University, United States
Pete Nye, Associate Professor, University of Washington Bothell, United States

We investigate how PM's estimate resources for software projects with high epistemic uncertainty. We employ the theoretical lens of selectionism and learning and take a grounded, case-based approach. We find that certain key levers are manipulated at critical times during the project life cycle to ensure a successful project launch.

043-0785 Uncertainty in Operations Management: An uncertain construct definition

Fabio Tescari, Student, Fundacao Getulio Vargas, Brazil
Cristiane Villar, Student, Fundacao Getulio Vargas, Brazil
Janaina Siegler, Student, Fundacao Getulio Vargas, Brazil

A central assumption in OM is that predictability within the supply chain brings cost and operational efficiency. Conversely, the study of uncertainty has a lack of consensus. This manuscript addresses a structured literature review over the last 2 decades of uncertainty in OM, its antecedents, moderators and outcomes.

043-1001 Unveiling the process of the implementation of improvements in manufacturing organizations

Darlan Roman, Student, Universidade Federal De Santa Catarina, Brazil
Rolf Erdmann, Professor, Universidade Federal De Santa Catarina, Brazil
Marilei Osinski, Student, Universidade Federal De Santa Catarina, Brazil

The objective is to build a grounded theory that explains the phenomenon of implementation of improvement projects in organizations. The justification is that about 60% of projects are abandoned at an early stage. Expected to present a theory that allows contextualize, explain and connect the important aspects of implementation.

043-0135 Strategic control of Agro-Industrial cooperatives: A strategic map proposal

Reginaldo Barreiros, Professor, UEPG, Brazil
Vilmar Moreira, Professor, Pontifical Catholic University of Parana, Brazil
Luiz Duclós, Professor, Pontifical Catholic University of Parana, Brazil
Roberto Protil, Professor, UFV, Brazil

Using the concepts of Balanced Scorecard and System Dynamics and considering the corporate features of agro-industrial cooperatives, this article proposes a strategic map, which presents up variables that represent critic processes in strategy management for agro-industrial cooperatives, as well as identifying hypothesis of causal relations among the variables.

218 Saturday, 02:15 PM - 03:45 PM, Suites II — *Track:* Production Planning and Scheduling
Session: Supply Chain Management for Post-Sales Support
Chair(s): Mustafa Dogru

043-0046 The Role of Flexibility in Joint Stocking and Sourcing Policy for Repairable Parts

Izack Cohen, Assistant Professor, Technion Israel Institute of Technology, Israel
Morris Cohen, Professor, Penn State University Philadelphia, United States

This paper examines the impact of maintenance sourcing flexibility in the context of multi-echelon repairable part inventory systems. We demonstrate that simultaneous optimization of strategic repair allocation and inventory stocking decisions can improve overall supply chain performance. We develop structural results to construct heuristic solution algorithms

043-1265 Joint spare parts inventory and reliability decisions under a service constraint

Baris Selcuk, Assistant Professor, Bahcesehir University, Turkey
Semra Agrali, Associate Professor, Bahcesehir University, Turkey

We jointly consider reliability and stock levels of spare parts, and develop a model to minimize the sum of holding and emergency shipment costs subject to a reliability improvement budget and a target service level. We provide a heuristic solution procedure and consider various practically relevant service level measures.

043-1428 Spare parts inventory control for an aircraft component repair shop

Rommert Dekker, Professor, Erasmus University Rotterdam, Netherlands
Willem Van Jaarsveld, Student, Erasmus University Rotterdam, Netherlands
Twan Dollevoet, Assistant Professor, Erasmus University Rotterdam, Netherlands

To ensure timely repair of failed components all required parts should be on stock, which is difficult to manage. We present a new analytical method to determine individual part stock levels such that repair service levels can be achieved at minimum cost. Results from a real implementation are presented.

043-1418 Tactical Inventory Planning at Alcatel-Lucent's Repair and Exchange Services

Mustafa Dogru, Member of Technical Staff, Alcatel-Lucent Bell Labs, United States
Ulas Ozen, Researcher, Alcatel-Lucent Bell Labs, Ireland

We study the tactical inventory planning process for spare parts at Alcatel-Lucent -- a global telecommunications equipment manufacturer. We formulate a stochastic optimization model of the system, and propose and test heuristics. Based on our results, we develop a decision support tool that assists the business tendering process.

219 Saturday, 02:15 PM - 03:45 PM, Suites III — *Track:* Supply Chain Management
Session: SCM College Best Student Paper Finalist Presentations
Chair(s): Michael Fry

043-1674 Integrating inventory replenishment and cash payment decisions in supply chains

Wei Luo, Student, Duke University Durham, United States
Kevin Shang, Associate Professor, Duke University Durham, United States

We provide a modeling framework that integrates financial flows into a two-echelon supply chain. We consider different payment schemes and derive joint optimal and near-optimal inventory and cash policies. Our study demonstrates that an effective cash payment policy can mitigate the supply disruption risk and improve the overall chain efficiency.

043-1675 Compensating for Dynamic Supply Disruptions with Backup Flexibility

Soroush Saghafian, Assistant Professor, Arizona State University Tempe, United States
Mark Van Oyen, Associate Professor, University of Michigan Ann Arbor, United States

We study various mechanisms that can increase both resilience and visibility in supply chains. These include (1) contracting with a flexible supplier, and (2) dynamic risk monitoring of suppliers. We model the dynamics of disruptions in a multi-product, multi-supplier setting, and analyze scenarios with or without risk information availability.

043-1678 Contracting for On-Time Delivery in the U.S. Influenza Vaccine Supply Chain

Tinglong Dai, Student, Carnegie Mellon University, United States
Soo-Haeng Cho, Assistant Professor, Carnegie Mellon University, United States
Fuqiang Zhang, Associate Professor, Washington University St Louis, United States

Motivated by the influenza vaccine industry, we consider a supply chain that involves three sources of uncertainties: design, delivery, and demand. Under these settings, we evaluate the performance of several well-know contracts, and propose new coordinating contracts that are reported in practice but not studied in the extant literature.

043-1677 Managing Global Sourcing: Inventory Performance

Nitish Jain, Student, INSEAD, Singapore
Karan Girotra, Assistant Professor, INSEAD, France
Serguei Netessine, Emeritus Professor, INSEAD, France

We study the link between global sourcing practices and inventory investments using a novel firm-level global sourcing data of public U.S. firms. We find that an increase in global sourcing results in an increase in inventory investment and an increase in number of suppliers can mitigate inventory investment increase.

043-1676 The role of cost modeling in competitive bid procurement

Yan Yin, Student, University of Michigan Ann Arbor, United States
Hyun-soo Ahn, Associate Professor, University of Michigan Ann Arbor, United States
Damian Beil, Associate Professor, University of Michigan Ann Arbor, United States

Industrial buyers often create cost models to estimate the costs of potential suppliers. However, in competitive bid procurement, the benefit of cost modeling is not clear since competition among suppliers can itself reveal cost information. We explore the value of cost modeling, to understand if, how and when cost modeling.

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Saturday, 02:15 PM - 03:45 PM, Suites IV *Track:* Empirical Research in Operations Management
Session: Empirical Studies in Knowledge Management and Innovation
Chair(s): Sarah Wu

043-0155 Antecedents to Buyer-Engineer Knowledge Transfer

Zach Zacharia, Assistant Professor, Lehigh University, United States
Scott Ellis, Assistant Professor, University of Kentucky, United States

This research leverages social exchange and organizational knowledge theories to examine the factors that affect inter-functional knowledge transfer. Using matched buyer and engineer survey data we test the relationships amongst top management support, functional congruence, relative functional salience, inter-functional relationship quality and knowledge transfer.

043-0202 Do Late Adopters Lose the Competitive Advantage in Operations?

Sarah Wu, Assistant Professor, Fordham University, United States

Research on administrative innovations has identified three important issues about their adoption. This study evaluates the impacts of timing and customization on a firm's operations performance. The empirical evidence suggests that a firm's customization ability plays a more important role in improving its performance whereas the first-mover advantage is marginal.

043-0532 The effects of proximity on innovation

Ajay Das, Professor, Baruch College, United States

We theorize the effects of R&D center proximity to manufacturing locations, on the nature and speed of innovation at the R&D centers. We hypothesize differential effects of proximity on different varieties of innovation. We discuss the possibility of an 'optimum' level of proximity in different contexts.

043-1075 Supply Chain Sustainability: Drivers, Practices, and Outcomes

Qingyu Zhang, Associate Professor, Arkansas State University, United States
Mei Cao, Associate Professor, University of Wisconsin - Superior, United States
Duong Nguyen, Student, Arkansas State University, United States

The objective of the paper is to propose a framework that relates supply chain sustainability drivers, sustainability practices, supply chain innovation, and triple-bottom-line outcomes. Using case study approaches, the paper empirically test the relationships among these constructs. The research implications, practical insights, and future research directions are discussed.

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Saturday, 02:15 PM - 03:45 PM, Suites V *Track:* Manufacturing Operations
Session: Empirical Investigations in Manufacturing Operations
Chair(s): Anand Nair

043-1321 Supply Network Structure and Product Recalls

Kartik Kalaignanam, Assistant Professor, University of South Carolina, United States
Tarun Kushwaha, Assistant Professor, University of North Carolina Chapel Hill, United States
Anand Nair, Professor, Michigan State University, United States

This study examines the impact of (mis)alignment between buyer-supplier network structure and product architecture (modular versus integral) on product recall frequency. The hypotheses are tested on a combination of archival and primary data from the automotive industry.

043-1323 Performance effects of early versus late adoptions of administrative innovations

Brian Jacobs, Assistant Professor, Michigan State University, United States
Morgan Swink, Professor, Michigan State University, United States
Kevin Linderman, Associate Professor, University of Minnesota, United States

We develop and test hypotheses describing performance effects associated with the adoption timing of adaptable administrative innovations. We use data from an exemplar practice, Six Sigma. We find that late Six Sigma adopters experience greater performance gains than early adopters, and that those advantages are moderated by certain firm characteristics.

043-1328 Innovation in Manufacturing Firms from an Emerging Economy

Adrian Choo, Assistant Professor, Georgia State University, United States
Chinawut Chinaprayoon, Senior Policy Researcher, National Science Technology and Innovation Policy Office (Thailand), Thailand

We examine a theory of R&D investments on product and process innovations in manufacturing. Using data from Thailand's R&D/Innovation surveys from two different years, we test how variables of R&D investments in products and processes affect innovation performance of the manufacturing firms.

043-1335 Are Corporate Social Performance and Lean Operations Complementary? A Shareholder Wealth Perspective

Sachin Modi, Assistant Professor, University of Toledo, United States
Saurabh Mishra, Assistant Professor, Mcgill University, Canada

Existing research provides limited insights into the shareholder wealth implications of corporate social performance (CSP) and lean operations under a common framework. We examine the relationships between CSP, lean operations, and shareholder wealth using secondary data. Results provide some novel research and managerial implications.

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Saturday, 02:15 PM - 03:45 PM, Suites VI — *Track:* Product Innovation and Technology Management
Session: Evaluating processes of innovation
Chair(s): Jeremy Hutchison-Krupat

043-0530 Ambitious Goals and Stretched Resource Allocation: Managerial Biases Under Innovation Uncertainty

Paulo Goncalves, Associate Professor, University of Lugano, Switzerland
Jaime Castaneda, Student, University of Lugano, Switzerland
Nitin Joglekar, Associate Professor, Boston University, United States

We develop a stylized decision model that incorporates the possibility of setting ambitious design targets or stretched resource allocations goals. Experimental tests show that decision makers overreact/underreact when costs and uncertainty call for less/more resources or ambitious scopes and chase uncertainty thresholds of previous innovation efforts, resembling common inventory-ordering biases.

043-1384 Leaps in Innovation

Joel Wooten, Student, University of Pennsylvania, United States

Search for solutions over a landscape of possibilities is central to innovation contests. Here, we look at algorithmic innovation tournaments from Kaggle.com to examine the effect incremental progress has on search. We use submission-level entries in data-driven tournaments to examine whether the innovation horizon inspires additional innovation.

043-1437 New Product Development Evolution: The Search for the Best Alternative

Gulru Ozkan, Assistant Professor, Clemson University, United States
David Hall, Student, Clemson University, United States
Jeremy Hutchison-Krupat, Assistant Professor, University of Virginia, United States
Fred Switzer, Professor, Clemson University, United States

Using a behavioral approach, we examine the strategy of decision makers who search for the best alternative to develop into a new product. The impact of facing a set of radical or incremental alternatives on the evolution of decision makers' performance is analyzed.

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Saturday, 02:15 PM - 03:45 PM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: OM Research in Learning and Knowledge Management
Chair(s): Kevin Linderman Aravind Chandrasekaran

043-1662 Panel on OM Research in Learning and Knowledge Management

Aravind Chandrasekaran, Assistant Professor, Ohio State University, United States
Kevin Linderman, Associate Professor, University of Minnesota, United States
Michael Lapré, Associate Professor, Vanderbilt University, United States
Cheryl Gaimon, Professor, Georgia Institute of Technology, United States
Nitin Joglekar, Associate Professor, Boston University, United States
Roger Bohn, Professor, University of California San Diego, United States

This panel will discuss contemporary research issues in Learning and Knowledge Management in Operations. We will focus primarily on how to do rigorous and relevant research in this area and how evidence from OM research can inform research in strategy and organizational theory.

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Saturday, 02:15 PM - 03:45 PM, Matchless — *Track:* Inventory Management
Session: Inventory Models and Applications
Chair(s): Arnab Bisi

043-0176 Demand Estimation and Ordering under Censoring: Stock-out Timing is (almost) All You Need

Aditya Jain, Assistant Professor, Indian School of Business, India
Nils Rudi, Associate Professor, INSEAD, Singapore
Tong Wang, Assistant Professor, National University of Singapore, Singapore

Retailers learn about demand by observing sales. However, this learning is limited by the amount of inventory. This loss of information due to censoring requires a retailer to carry excess inventory. We propose a new way of learning about demand with significantly simple sufficient statistics.

043-0587 On the Total Business Volume Commitment and Inventory Replenishment

Frank Chen, Professor, City University of Hong Kong, Hong Kong
Phil Kaminsky, Professor, University of California Berkeley, United Kingdom
Quan Yuan, Student, City University of Hong Kong, Hong Kong

We study a supply contract for multiple products that specifies a minimum total business volume over the planning horizon, i.e., the total purchasing dollar amount over the contract duration must be at least the specified volume. The paper establishes an optimal replenishment policy that minimizes the total inventory cost.

043-1231 An Adaptive Method for a Storable Inventory Problem

Arnab Bisi, Associate Professor, Indian Institute of Management Calcutta, India
Karanjit Kalsi, Engineer, Purdue University, United States
Golnaz Abdollahian, Engineer, Purdue University, United States

We determine the stocking quantities for a storable inventory problem with unobserved lost sales. An adaptive method for inventory decisions is proposed based on historical sales data. We establish the convergence rate of our policy for continuous demand distributions, and compare its performance against a benchmark and two existing policies.

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Saturday, 02:15 PM - 03:45 PM, Gold Coin — *Track:* Supply Chain Risk Management
Session: Disruption Risk Management
Chair(s): Kirstin Scholten

043-0093 Study on supply-chain demand disruption caused by rumor spreading

Haifeng Zhao, Associate Professor, Tongji University, China
Bin Lin, Student, Tongji University, China

Rumor spreading is an important factor resulting in supply chain demand disruption. A supply-chain demand change prediction model is developed based on a new rumor spreading model, Susceptible-Infective-Isolated-Immune(SI2I)model.In this model, the impact of rumors on demand can be quantitatively reflected by the proportion of ignorants and immunes in the population.

043-0096 Supply Chain Disruptions due to a climate of crime and violence

Omar Salgado, Professor, EGADE Business School, Mexico

Since North American Free Trade Agreement was signed, there has been an increment in the industrial activity in Mexico and in the levels of crime and violence which may hinder the capacity of companies to move goods efficiently. This article describes a framework for the phenomenon and provides first cases.

043-0854 Building supply chain resilience through learning

Kirstin Scholten, Assistant Professor, University of Groningen, Netherlands
Pamela Sharkey Scott, Senior Lecturer, Dublin Institute of Technology, Ireland
Brian Fynes, Professor, University College Dublin, Ireland

Knowledge created through learning is critical to organizations if they are to survive and recover from supply chain disruptions in the most effective and efficient way. Through case study analysis we identify 6 key learning mechanisms and their enablers that contribute to building supply chain resilience.

043-0211 Coordination in Supply Chains with Uncertain Demand and Disruption Risks: Existence, Analysis, and Insights

Sobhan Asian, Student, Nanyang Technological University (NTU), Singapore
Xiaofeng Nie, Assistant Professor, Nanyang Technological University, Singapore

This paper studies a contracting problem between a retailer and a backup supplier. The backup supplier is perfectly reliable while the retailer faces both supply disruptions and demand uncertainty. After characterizing the channel members' optimal reservation-production policies, we establish a win-win coordination mechanism that is desirable from both members' perspectives.

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Saturday, 02:15 PM - 03:45 PM, Mattie Silks — *Track:* Service Operations
Session: Spa and Wellness Service Management
Chair(s): Jay Kandampully

043-1667 Executive Panel on Spa and Wellness Service Management

Richard Dusseau, President, Trilogy Spa Holdings, United States
Lynne McNees, President, International SPA Association, United States
Ella Stimpson, Chairman, International SPA Association, United States
Lydia Hanks, Assistant Professor, Florida State University, United States
Michael Collins, Associate Professor, Coastal Carolina University, United States
Jay Kandampully , Professor, Ohio State University, United States

To meet the demands of customers in an increasingly competitive market, spa and wellness firms have become highly customer-driven and service-oriented. They have become clearly 'people' focused and have adopted various service management approaches to effectively manage and provide customers with the superior service, value and experience they demand.

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Saturday, 02:15 PM - 03:45 PM, Molly Brown — *Track:* Empirical Research in Operations Management
Session: Empirical Research in Product and Service Quality
Chair(s): Jose Guajardo

043-1425 Effect of component sharing and perceived quality on firm performance during safety recalls

Nah Lee, Student, Georgia Institute of Technology, United States
Manpreet Hora, Assistant Professor, Georgia Institute of Technology, United States
Vinod Singhal, Professor, Georgia Institute of Technology, United States

We collect announcements related to automotive recalls to empirically examine their association with shareholder value. Then we investigate the association between shareholder value and degree of component sharing and perceived quality of the vehicles recalled.

043-1512 Service Competition and Product Quality in the U.S. Automobile Industry

Jose Guajardo, Assistant Professor, University of California Berkeley, United States
Morris Cohen, Professor, University of Pennsylvania, United States
Serguei Netessine, Emeritus Professor, INSEAD, France

We analyze the impact of service attributes on consumer demand in the U.S. automobile industry. Our results indicate that service attributes play a compensatory role with respect to product quality, and that both service metrics are complementary with respect to demand.

043-1520 Product Quality or Service Quality? The Impact of Customer Heterogeneity

Jose Guajardo, Assistant Professor, University of California Berkeley, United States
Morris Cohen, Professor, University of Pennsylvania, United States

We study how customer heterogeneity influences the effect of product quality and service quality perceptions on customer loyalty, in an application in the consumer electronics industry. We find that customer characteristics have a significant moderating effect, and document significant heterogeneity in service-sensitivity in the population.

043-1533 Waiting Patiently: An Empirical Study of Queue Abandonment in an Emergency Department

Robert Batt, Student, University of Pennsylvania, United States
Christian Terwiesch, Professor, University of Pennsylvania, United States

We study abandonment from emergency department queues. We show that abandonment is not purely a function of the wait time. Rather, patients respond to what they observe: census, arrivals, and departures. Further, patients infer the priority of other patients and respond differently to the presence of sicker and healthier patients.

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Saturday, 02:15 PM - 03:45 PM, Spruce — *Track:* Purchasing and Supply Management

Session: Supply and Technology Management

Chair(s): Zhixi Wan

043-0088 New Approach to Analyze a Capacitated Two-Supplier and One-Retailer Supply Chain Problem

Bollapragada Ramesh, Professor, San Francisco State University, United States
Kai LUO, Assistant Professor, Euromed Marseille Ecole De Management, France
Laoucine Kerbache, Professor, Hec Paris, France

We provide a new approach to analyze a multi-period, two-stage, two-product, stochastic demand, two-capacitated-supplier, single-capacitated-retailer problem. We show that in most of the cases, the transformed objective function is L-nature-convex. Bounds of the optimal solutions are discussed and managerial insights are provided.

043-1193 Commitment versus Flexibility in Collaborative Prototyping

Timofey Shalpegin, Student, Hec Paris, France

Manufacturers often involve suppliers to develop innovative components. Suppliers provide manufacturers with several prototypes. We examine two types of contracts: whether manufacturers should (a) commit to a certain target cost level for the component or (b) dynamically change the target cost during the development process.

043-0916 Supplier Integration For New Product Development: Product or Process integration?

Xenophon Koufteros, Associate Professor, Texas A&M University College Station, United States
Anto Verghese, Student, Texas A&M University College Station, United States

Supplier integration achieved at the process level as opposed to at the product level improves new product development capability for the focal firm. Additionally, taking a contingency perspective, we find this effect to be further enhanced by an increase in uncertainty and equivocality concerning the product and process.

043-1063 Antidotes to the Dark Side of Buyer-Supplier Relationships: Prevention Mechanisms and Contextual Factors

Verónica Villena, Assistant Professor, Penn State University University Park, United States
Elena Revilla, Professor, IE Universidad, Spain
Thomas Choi, Professor, Arizona State University Tempe, United States

We examine the mechanisms that can prevent the “dark” side of buyer-supplier relationships. The results confirm that buyers fall prey to the dark side when they have long working history and high expectation to continue, whereas they delay the arrival of the dark side by using detailed contracts, fostering challenging goals, and adopting a policy of rotation.

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Saturday, 02:15 PM - 03:45 PM, Nat Hill — *Track:* Retail Operations Management

Session: Retail Operations - Empirical Studies

Chair(s): Alper Nakkas

043-0050 A Category Role Aided Market Segmentation Approach to Convenience Store Category Management

Yongjie Ye, Student, Xiamen University, China
HAN HUA, Professor, Xiamen University, China

This paper presents an innovative market segmentation model which is driven by category-role, for the first time, to support Category management in chain CVSs. The usefulness and applicability of this study is illustrated by means of an empirical study. The derived results are discussed and compared with the existing works.

043-0836 Together we are stronger. A case study of a network of small retailers in southern Brazil.

Marco Murara, Professor, Catolica de Santa Catarina, Brazil
Ubiratã Tortato, Professor, PUCPR - Assoc. Paranaense de Cultura, Brazil
Edson Ewald, Professor, Catolica de Santa Catarina, Brazil
Ariana Lenz, Professor, Catolica de Santa Catarina, Brazil

The aim of this case study is to describe the process of creating an associative network of small retailers of building materials in southern Brazil. The case study approaches cost reductions in communication, management, standardization of logistic and management procedures, as well as a better negotiation with suppliers.

043-0405 Getting a Second Opinion: The Category Advisors

Alper Nakkas, Assistant Professor, Sungkyunkwan University, Korea, Republic of (South Korea)

Category captainship, which is a common category management implementation in the retailing industry, can have a tremendous impact on the retailer's bottom line performance. We consider the biased incentives of category captains and explore the impact of category advisors, who are simply non-captain manufacturers, on the implementation of category captainship.

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Saturday, 02:15 PM - 03:45 PM, Pomeroy *Track:* Operations Management and Economic Models

Session: Economic Models

Chair(s): Marco Garcia Vargas

043-0067 Evaluation of Competitive Distance Between Companies of Auto Parts Sector

Milton Vieira Junior, Professor, Universidade Nove De Julho, Brazil
Wagner Lucato, Professor, Universidade Nove De Julho, Brazil
José Domingos Filho, Student, Universidade Nove De Julho, Brazil
Odirlei Miranda, Student, Universidade Nove De Julho, Brazil

This paper aims to analyze the competitive distance of 3 of the main auto parts manufacturers acting on the Brazilian automotive market during the period of 2008 to 2010 by means of the competitive profile of each company.

043-0462 Transactional Risk Reduction in Design Outsourcing through Multi-phase Prototyping

Ke Sun, Student, Nanyang Technological University, Singapore
Songlin Chen, Assistant Professor, Nanyang Technological University, Singapore

Prototyping serves as a means of reducing transactional risk in design outsourcing; however, it is extremely expensive in capital intensive industry. In this paper, a Bayesian updating method and a modified real option method are introduced to quantify the risk reduction and value added, respectively, through prototyping.

043-0002 How to determine the cost of Business Process-Aware Software Architecture Flexibility? The Travelsky Case

Sien Chen, Student, Xiamen University, China
Zhenyu Liu, Professor, Xiamen University, China

The paper establishes calculation model of business process-aware software architecture flexibility cost for business process variation and structural complexity. By using travelsky-airline-agent's e-commerce platform as the sample, the paper researches the organization through a flexible strategy make investment decisions, and regression formula of flexibility cost can improve the flexibility.

043-1164 Determining the volume of auto parts to be purchased from suppliers under a Bertrand-Edgeworth competition

Juan Gaytan Iniestra, Emeritus Professor, Instituto Tecnologico y de Estudios Superiores de Monterrey, Mexico
Maria del Pilar Arroyo-Lopez, Professor, Instituto Tecnologico y de Estudios Superiores de Monterrey, Mexico
Marco Garcia Vargas, Student, Instituto Tecnologico y de Estudios Superiores de Monterrey, Mexico

We propose a two phase formulation to determine the production volume of auto parts to be manufactured by external suppliers under a Bertrand-Edgeworth competition with current limited capacity which may be increased overtime. The problem is solved with evolutionary algorithms. Numerical results are presented.

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Saturday, 02:15 PM - 03:45 PM, Salon E *Track:* Product Innovation and Technology Management

Session: Applications and Performance Measurement

Chair(s): Herbert Kimura

043-0326 Integration of the Application of Analogies in an Innovation Management in Logistics

Wolfgang Kersten, Professor, Technische Universitat Hamburg-Harburg, Germany
Nikolaus Wagenstetter, Student, Technische Universitat Hamburg-Harburg, Germany

Innovations are drivers of growth and companies' success. The application of analogies is an established approach to create radical innovations for physical products; successful solutions are transferred from nature or other industries to solve problems. First insights into the adaption of this approach for logistics service providers are presented.

043-0650 Identification of Incremental Innovations' Impact on Customers Satisfaction using Improvement Gap Analysis

Gerson Tontini, Emeritus Professor, Universidade Regional de Blumenau - FURB, Brazil
Jaime Picolo, Professor, Universidade do Extremo Sul de Santa Catarina - UNESC, Brazil

This paper presents how a new method, Improvement Gap Analysis (IGA), has a superior performance of Diagonal Importance Performance Analysis (IPA), proposed by Slack (1994). It evaluates how 24 cell phones' attributes do impact on customers satisfaction if improved or offered, focusing on 6 incremental innovations.

043-1493 The impact of innovation on performance in the Brazilian market

Leonardo Basso, Professor, Universidad Presbiteriana Mackenzie, Brazil
Ullisses Shimizu, Student, Universidad Presbiteriana Mackenzie, Brazil
Herbert Kimura, Associate Professor, Universidad Presbiteriana Mackenzie, Brazil
Eduardo Kayo, Professor, Universidade De Sao Paulo, Brazil

This research brings new results of an ongoing project on the impact of innovation in performance. By creating an innovation construct based on the Oslo Manual, we identify a negligible relationship between output of innovation process and financial performance in a broad sample of firms doing business in Brazil.

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Saturday, 02:15 PM - 03:45 PM, Salon F *Track:* Scheduling and Logistics

Session: Responding to Uncertain Demand and Lead-Time

Chair(s): Thomas Choi

043-0663 Optimal Location, Capacity and Timing of Stockpiles for Improved Hurricane Preparedness

Leo MacDonald, Assistant Professor, Kennesaw State University, United States
Jomon Paul, Associate Professor, KSU, United States

There is limited research involving hurricane preparedness that considers the various aspects of uncertainty, including wind speed, landfall location, as well as associated demand for supplies. In this study, we explicitly model multiple uncertainties and determine the location and capacities of stockpiles, as well as optimal timing for deployment.

043-0561 Issues in Lean Supply Chain Scheduling under Volatile Demand from Multiple Customers

Anurag Agarwal, Associate Professor, University of South Florida, United States
Vaidy Jayaraman, Associate Professor, University of Miami, United States
Anthony Ross, Professor, University of Wisconsin Milwaukee, United States

We model the scheduling problem of a manufacturer in a lean supply chain facing a volatile demand from multiple customers. The manufacturer needs to minimize the resources, minimize penalties for late deliveries and meet the demand. This paper discusses several issues and how to resolve them.

043-0563 Understanding Global Lead Times

Yimin Wang, Assistant Professor, Arizona State University Tempe, United States
Arnold Maltz, Associate Professor, Arizona State University Tempe, United States
Rui Yin, Assistant Professor, Arizona State University Tempe, United States
Thomas Choi, Professor, Arizona State University Tempe, United States

Product delivery lead times are usually assumed to be normally distributed, but violation of this assumption in practice can lead to significant errors. We investigate this assumption using an extensive dataset of shipments from Asia to the United States and innovative Bayesian estimation techniques.

043-0867 Truck Spot Market Impact on Carriers and Shippers Operations

Stephane Collignon, Student, Virginia Polytechnic Institute And State University, United States
Deborah Cook, Professor, Virginia Polytechnic Institute And State University, United States
Tabitha James, Associate Professor, Virginia Polytechnic Institute And State University, United States

Shippers and road carriers seek strategies to help improve their performance. As daily variations in demand often undo anticipated plans, shippers go on the spot market to find extra resources. We investigate how spot market operations impact the performance of shippers and carriers through an Agent-Based Model.

043-0196 Scheduling procurement of items with fuzzy requirement dates and lead times in complex projects

Vijaya Dixit, Student, IIM L, India
Rajiv Srivastava, Professor, Indian Institute of Management Lucknow, India
Atanu Chaudhuri, Assistant Professor, Indian Institute of Management Lucknow, India

This work develops a multi-objective procurement scheduling model for complex projects with fuzzy requirement dates and lead times of items. The proposed model minimizes holding and shortage costs under stage budget constraints. Fuzzy linear programming solution approach has been used which provides crisp ordering dates of items as output.

235 Saturday, 04:00 PM - 05:30 PM, Salon A *Track:* Behavioral Issues in Operations Management
Session: Behavioral Issues in Procurement
Chair(s): Elena Katok

043-0009 An Experimental Investigation of Procurement Auctions with Asymmetric Bidders

John Aloysius, Associate Professor, University of Arkansas, United States
Cary Deck, Professor, University of Arkansas, United States
Li Hao, Assistant Professor, University of Arkansas, United States

Auctions are a widely studied procurement mechanism. However, research has overwhelmingly focused on symmetric auctions where costs are drawn from a common distribution. This paper uses controlled laboratory experiments to investigate bidding behavior when costs are drawn from different distributions as would be expected when different size suppliers compete.

043-0336 A hold-up problem with behavioral considerations

Elena Katok, Professor, University of Texas Dallas, United States
Ernan Haruvy, Associate Professor, University of Texas Dallas, United States
Zhongwen Ma, Student, University of Texas Dallas, United States
Suresh Sethi, Professor, University of Texas Dallas, United States

We model the hold-up problem as a sequential move game with asymmetric information regarding product quality. We propose different models that incorporate psychological factors such as reciprocal motives and nonbinding handshake, and experimentally gauge the value of the analytical predictions in environments with human players.

043-0477 Strategic Consumers, Myopic Retailers

Mirko Kremer, Assistant Professor, Penn State University State College, United States
Benny Mantin, Assistant Professor, University of Waterloo, Canada
Anton Ovchinnikov, Assistant Professor, University of Virginia, United States

We investigate the impact of strategic consumer behavior and loyalty on the dynamic pricing strategies of competing retailers. We present both modeling results as well as the results of behavioral experiments in which subjects played as retailers in either a monopoly or duopoly environments.

043-1338 Collusion in Dynamic Buyer-Determined Reverse Auctions

Elena Katok, Professor, University of Texas Dallas, United States
Achim Wambach , Professor, University of Cologne, Germany
Nicolas Fugger , Student, University of Cologne, Germany

While binding reverse auctions have attracted a lot of interest in the academic literature, in practice dynamic non-binding, buyer-determined auctions, are the norm in procurement. We show both theoretically and experimentally that this bidding format may enable suppliers to collude, thus leading to non-competitive prices.

236 Saturday, 04:00 PM - 05:30 PM, Salon B *Track:* Sustainable Operations
Session: Towards sustainability: Role of incentives, government and optimization
Chair(s): Saed Alizamir

043-1347 Strong but Sporadic OR Soft but Systematic? Operational Inertia & External Triggers for Change

Suvrat Dhanorkar, Student, University of Minnesota, United States
Kevin Linderman, Associate Professor, University of Minnesota, United States

External Institutions and Agencies are set-up in order to monitor, enforce and trigger organizational growth and change. While government regulatory bodies exercise formal authority through legal enforcements, local intermediaries may only exercise informal authority through systematic reminders. We contrast the potential of these two external mechanisms to enhance environmental compliance.

043-1415 Optimal location of discretionary Alternative-Fuel Stations on a Tree Network

Seong Wook Hwang, Student, Penn State University University Park, United States
Sang Jin Kweon, Student, Penn State University University Park, United States
Jose Ventura, Professor, Penn State University University Park, United States

Due to global concerns about environmental sustainability in ground logistics, there has been widespread research into alternative-fuel vehicles. In this research, we propose a mathematical model to determine optimal locations for a pre-determined number of alternative-fuel stations to maximize the traffic flow covered on a tree-network.

043-1592 BigData Computation for Optimal Load Balancing in Smart Electric Grids

Yitao Liu, Student, Georgia Institute of Technology, United States
Roger Jiao, Associate Professor, Georgia Institute of Technology, United States
Bo Hong, Assistant Professor, Georgia Institute of Technology, United States

We approach sustainability with a particular focus on planning and scheduling of smart electric grids. We adopt industrial systems engineering and bigdata computing approaches to total energy management throughout complex electric grids. The goal is to sustainably maintain optimal electricity loadings by balancing consumption demand and power generation.

043-1611 Efficient Feed-In-Tariff Policies for Renewable Energy Technologies

Saed Alizamir, Student, Duke University Durham, U.S. Minor Outlying Islands
Francis De Vericourt, Associate Professor, INSEAD, France
Peng Sun, Associate Professor, Duke University Durham, United States

This paper provides insights and guidance into designing effective and cost-efficient Feed-In-Tariff policies to promote deployment of renewable energies. We propose a dynamic optimization modeling framework with learning and diffusion effects, and characterize the structure of the optimal policy. We show how the structure depends on technology and market characteristics.

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Saturday, 04:00 PM - 05:30 PM, Salon D — *Track:* Sustainable Operations

Session: Outsourcing and purchasing for sustainable supply chains

Chair(s): Tayyab Amjed

043-0705 Sustainable Procurement Model: A strategic tool for responsible decision-making

Tayyab Amjed, Student, Macquarie Graduate School of Management, Australia
Norma Harrison, Professor, Macquarie Graduate School of Management, Australia

Procurement, a key organizational operation, has taken on greater strategic importance in the arena of sustainable development. However, fundamental "procurement elements" covering economic, social and environmental dimensions of sustainability are not well-established. A model is developed and validated using content analysis of literature, industry standards, sustainability frameworks and company reports.

043-0848 Examining an Integrative Model of Green Purchasing: a Korean Perspective

Kogan Tatiana, Student, Yonsei University, Russian Federation
Soonhong Min, Associate Professor, Yonsei University, Korea, Republic of (South Korea)
Subin Im, Associate Professor, Yonsei University, Korea, Republic of (South Korea)
Sumin Lee, Student, Yonsei University, Korea, Republic of (South Korea)

With the growing importance of sustainability for business success, green purchasing is considered a strategic initiative for manufacturers. However, not many studies have examined an integrative model of green purchasing. Using a sample of top 1,000 Korean firms, this study empirically tests firm's internal drivers and outcomes of green purchasing.

043-1403 Streamlined Hotspot Approaches to Procurement and Supply Chain Management

Timothy Smith, Associate Professor, University of Minnesota, United States
Rylie Pelton, Student, University of Minnesota, United States
Holly Lahd, Student, University of Minnesota, United States

More than ever, organizations are working to reduce the environmental footprint of their supply chains. Methods are presented to provide reasonable decision signals for procurement and supply chain managers. Results suggest that a truncation methodology can significantly reduce input data requirements, while capturing over half of total life cycle impact.

043-1226 Analyzing Fuel Consumption Anomalies for Environmentally Sustainable Aviation

Manish Goswami, Student, Indian Institute of Technology Bombay, India
Vineet Kshirsagar, Performance Manager, Jet Airways India Limited, India
Karuna Jain, Professor, Indian Institute of Technology Bombay, India

Airlines are committed to contain climate change by reducing aviation emissions through fuel conservation and optimization methods. We detect anomalies in fuel consumption during cruise phase of the flight and identify a regression model based on aerodynamic principles and flight conditions for providing basic diagnostics to these anomalies.

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Saturday, 04:00 PM - 05:30 PM, Salon G — *Track:* Supply Chain Management

Session: Competition in Supply Chains

Chair(s): Nanqin Liu

043-1596 Pricing and Local-Content Decisions of a Multinational Firm in a Duopoly Market

Nanqin Liu, Student, Lingnan Univ, Hong Kong
Mingming Leng, Associate Professor, Lingnan Univ, Hong Kong
Liping Liang, Assistant Professor, Lingnan Univ, China

We develop and solve a two-stage decision problem to investigate the local content rate and pricing decisions for a multinational firm who competes with a local firm in a market without and with a local content requirement. A number of managerial insights are drawn from our analytical and numerical investigations.

043-0601 Dual-channel price competition in recycling WEEE and research on the effect of government subsidy

Huihui Liu, Student, Peking University, China
Ming Lei, Professor, Peking University, China
Tao Huang, Professor, Peking University, China

Recently, most of waste electrical and electronic equipment (WEEE) have not been recycled in an environment-friendly manner, especially in developing countries. The paper builds a quality-based price competition model in dual-channel recycling market: a regular channel with official qualification for disassembling WEEE and an irregular channel without qualification.

043-0404 The Impact of Supply Chain Structure on the Wholesale Prices

Alper Nakkas, Assistant Professor, Sungkyunkwan University, Korea, Republic of (South Korea)

We represent trade limitations between manufacturers and retailers via a supply chain network and find that similar supply chain structures may lead to different equilibrium outcomes as a result of tension between the bargaining power created by differences in retail valuations and critical supply chain positions.

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Saturday, 04:00 PM - 05:30 PM, Salon H — *Track:* Supply Chain Management

Session: Supplier Selection and Performance

Chair(s): Liang Chen

043-0071 Just-in-time supplier selection: a case study in an automobile assembler in Brazil

Valéria Andrade, Student, Universidade Nove De Julho, Brazil
Rosangela Vanalle, Professor, Universidade Nove De Julho, Brazil
Wagner Lucato, Professor, Universidade Nove De Julho, Brazil

The objective of this paper was to analyze the Just-In-Time supplier development procedures employed by a multinational automobile assembler located in Brazil. For that purpose case study was used as the methodological approach complemented by semi-structured interviews as the data gathering technique. Results enabled a thorough understanding of the process.

043-1639 Understanding the Relationship between Supplier Development Activities and their Outcomes: A Meta-analysis

Liang Chen, Student, University of Kentucky, United States
Scott Ellis, Assistant Professor, University of Kentucky, United States
Clyde Holsapple, Professor, University of Kentucky, United States

Using the meta-analysis approach, this study investigates the relationship between supplier development activities (SDAs) and their outcomes. We find that SDAs positively relate to supply chain performance, but such a relationship is moderated by SDAs' type, performance measures, and research contexts such as data source and industry type.

043-1239 In the Shadow of Dominant Customers: The Effects of Customer Concentration on the Supplier's Performance

Yoon Hee Kim, Assistant Professor, Western University, Canada

This study investigates whether the power of dominant customers measured by customer concentration affect the supplier's ability to create and capture value in the market. Specifically, we are interested in how the suppliers can balance risks and rewards in the relationships with dominant customers.

043-0444 Operational supply chain integration factors and their impact on selection of suppliers in public hospitals

Kabossa Msimangira, Senior Lecturer, Northern Melbourne Institute of TAFE, Australia

This study examines the operational supply chain integration factors and their impact on selection of suppliers in New Zealand public hospitals. We used a survey approach to collect data from procurement and supply personnel, and tested the hypotheses using regression analysis. We discuss the findings and implications of the results.

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Saturday, 04:00 PM - 05:30 PM, Salon I — *Track:* General Track
Session: PANEL on Women in Operations Management: Navigating the Dual Career Lifestyle
Chair(s): Cheryl Gaimon

043-1617 Panel on Women in Operations Management: Navigating the Dual Career Lifestyle

Cheryl Gaimon, Professor, Scheller College of Business, United States
Barbara Flynn, Professor, Indiana University, United States
Deishin Lee, Assistant Professor, Harvard University, United States
Eve Rosenzweig, Associate Professor, Emory University, United States
Rachna Shah, Associate Professor, University of Minnesota, United States
Svenja Sommer, Associate Professor, Hec Paris, France

A panel of women at all ranks of academia will discuss the "dual career lifestyle." Each panel member will reflect on the challenges she faces and THE solutions she pursues to manage her own career along with her spouse's career.

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Saturday, 04:00 PM - 05:30 PM, Salon J — *Track:* Humanitarian Operations and Crisis Management
Session: Routing and Location Challenges
Chair(s): Alabi Soneye

043-0288 Multi-objective location and routing problem for optimized post-disaster relief distribution

Hai-Jun Wang, Associate Professor, Huazhong University of Science & Technology, China
Lijing Du, Student, Huazhong University of Science & Technology, China

The effective distribution of relief in post disaster plays a crucial role for rescue operations. This paper constructs a multi-objective location-routing model for relief distribution problem. Non-dominated sorting differential evolution algorithm is introduced to solve the model. Case studies expound the application of the model and algorithm in practice.

043-0384 Emergency Relief Routing and Temporary Depots Location Problem with considering Roads Restoration

Amirhossein Meisami, Student, Texas A&M University College Station, United States
Ali Torabi, Associate Professor, University of Tehran, Iran (Islamic Republic of)
Milad Baghersad, Student, University of Tehran, Iran (Islamic Republic of)

Natural disasters often damage parts of relief distribution infrastructure (e.g., bridges, roads) and leave immense amounts of debris in affected areas. This paper proposes a novel multi-objective possibilistic model for coordinating relief distribution and road restoration which is solved via weighted augmented e-constraint method. An illustrative example is also provided.

043-1322 The Roadside Healthcare Facility Location Problem

Harwin Vries, Student, Erasmus University Rotterdam, Netherlands
Joris Van de Klundert, Professor, Erasmus University Rotterdam, Netherlands
Albert Wagelmans, Professor, Erasmus University Rotterdam, Netherlands

Providing African truck drivers with adequate access to healthcare is an effective way to reduce the burden and the spread of HIV and other diseases. We propose a mixed-integer programming model to select locations for new roadside healthcare facilities, and to decide for these facilities which health services to provide.

043-0630 A Disaster Relief Inventory Model Based on Transshipment

Pedro Reyes, Associate Professor, Baylor University, United States
Patrick Jaska, Professor, University of Mary Hardin-Baylor, United States
Jianghong Man, Assistant Professor, Shandong University, China

System dynamics simulation is used to compare inventory control and costs in a humanitarian supply chain without transshipment vs. one with transshipment in a disaster relief system. The preliminary results indicate that transshipment can reduce costs and improve service to disaster victims.

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Saturday, 04:00 PM - 05:30 PM, Suites I — *Track:* Humanitarian Operations and Crisis Management

Session: Convergence in Humanitarian Logistics

Chair(s): Miguel Jaller

043-0425 Material Convergence: An Important And Understudied Disaster Phenomenon

Jose Holguin-Veras, Professor, Rensselaer Polytechnic Institute, United States
Miguel Jaller, Student, Rensselaer Polytechnic Institute, United States
Luk Van Wassenhove, Professor, INSEAD, France
Noel Perez, Student, Rensselaer Polytechnic Institute, United States
Tricia Wachtendorf, Associate Professor, University of Delaware, United States

The paper discusses the research on material convergence–which is the spontaneous flow of supplies, equipment, and general donations to the impacted area. The paper reviews empirical evidence, and complements it with the fieldwork conducted by the authors, to identify the problems created by the non-priority component of the material convergence.

043-0361 Resource Allocation Model for Dynamic Control of Material Convergence after Disasters

Miguel Jaller, Student, Rensselaer Polytechnic Institute, United States
Jose Holguin-Veras, Professor, Rensselaer Polytechnic Institute, United States

This paper develops a mathematical formulation for the dynamic control of material convergence, which is the spontaneous flow of supplies and equipment sent by volunteers, relief agencies, regular citizens, and the rest of the civic society to an area impacted by a disaster.

043-1413 Material convergence after Hurricane Sandy

Jose Holguin-Veras, Professor, Rensselaer Polytechnic Institute, United States
Miguel Jaller, Student, Rensselaer Polytechnic Institute, United States
Felipe Aros-Vera, Student, Rensselaer Polytechnic Institute, United States
Johanna Amaya, Student, Rensselaer Polytechnic Institute, United States

This paper describes preliminary findings on the research conducted by the authors on the impact of material convergence on the humanitarian logistics efforts after hurricane Sandy. Using in depth interviews with participants in the relief efforts and data collection, the authors identified lessons and policy implications for future response efforts.

043-0221 Convergent volunteer behavior and scheduling following a large-scale disaster

Emmett Lodree, Associate Professor, University of Alabama Tuscaloosa, United States
Lauren Davis, Associate Professor, North Carolina A&T State University, U.S. Minor Outlying Islands

Volunteer convergence in response to large-scale disasters often overwhelms the agencies responsible for managing relief efforts. Using data collected during the 2011 tornado relief efforts in Tuscaloosa, Alabama, this study characterizes the stochastic behavior of spontaneous volunteers and examines dynamic volunteer scheduling policies in a simulation environment.

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Saturday, 04:00 PM - 05:30 PM, Suites II — *Track:* Production Planning and Scheduling

Session: Resource Allocation and Scheduling in Nontraditional Settings

Chair(s): Norbert Trautmann

043-1116 An optimization approach for quay assignment of ships

Sang-Hyup Lee, principal researcher, Hyundai Heavy Industry Co., Korea, Republic of (South Korea)
Soon-Ik Hong, Researcher, Hyundai Heavy Industry Co., Korea, Republic of (South Korea)
Ji-On Kim, Principal Researcher, Hyundai Heavy Industry Co., Korea, Republic of (South Korea)

This paper is to develop an algorithm for ship-quay assignment problem at the shipyard basic planning. Hungarian method is applied to assign each ship to a quay among its alternative quays. Tabu search algorithm is also used to optimize the assignment sequence of ships in this paper.

043-1111 A study on analysis of effects by realized delays

Sunghoon Kim, Researcher, Hyundai Heavy Industry Co., Korea, Republic of (South Korea)
Soon-Ik Hong, Researcher, Hyundai Heavy Industry Co., Korea, Republic of (South Korea)
Seung Jin Ha, Principal Researcher, Hyundai Heavy Industry Co., Korea, Republic of (South Korea)
Ji-On Kim, Principal Researcher, Hyundai Heavy Industry Co., Korea, Republic of (South Korea)

In this paper, we proposed a solution to analysis of effects on production system by realized delays under big and complex relation constraints. The solution has two major concepts; act group/stage in algorithm part and data structure to organize plan data in implementation part.

043-0015 A hybrid heuristic for operations scheduling of make-and-pack production processes

Philipp Baumann, Student, University of Bern, Switzerland
Norbert Trautmann, Professor, University of Bern, Switzerland

Make-and-pack processes comprise a make stage, a pack stage, and some intermediate-storage facilities. A large number of operations and complex technological constraints characterize the operations-scheduling problem. We present a hybrid MILP-based heuristic consisting of the three phases decomposition, construction, and improvement. We report on computational results for industrial problem instances.

043-0513 Production & Equipment Scheduling in Opencast Mines using Shovel-Truck Allocation & Hourly Dispatching Policy

Krishna Sundar Diatha, Associate Professor, Indian Institute of Management Bangalore, India

A dynamic mining equipment deployment policy ensures timely supply of consistent quality ores from a mine. For Shovel-truck allocation and dispatching policy, this paper presents a two-stage model. Firstly, an optimization model disaggregates short-range excavation plan, in the second stage a simulation model gives hourly allocation of dumpers to shovels.

043-0014 Planning of a continuous production process in the printing industry

Norbert Trautmann, Professor, University of Bern, Switzerland
Philipp Baumann, Student, University of Bern, Switzerland

We consider an offset printing process for the production of napkin pouches with customer-specific designs. The planning problem is to determine a minimum-cost allocation of some printing plate slots to the designs. We present an MILP formulation and a constructive heuristic, and we report on computational results for real-world instances.

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Saturday, 04:00 PM - 05:30 PM, Suites III — *Track:* Empirical Research in Operations Management

Session: Empirical Studies in Logistics

Chair(s): Lorena Mathien

043-1246 Horizontal cooperation among logistics service providers (LSP) and the influence of environmental uncertainty

Gernot Kaiser, Assistant Professor, Ebs Business School, Germany

Cooperation among LSPs is very common in emerging economies due to inefficient infrastructure and unreliable institutions. We develop a framework that incorporates transaction and relational mechanisms and their impact on cooperation's performance. Utilizing 113cases from Africa/ Middle East we found empirical evidence for a strong moderating effect of environmental uncertainty.

043-1288 An Empirical Investigation of the Application of Production Competence Theory to Logistics Outsourcing

Lorena Mathien, Assistant Professor, SUNY College at Buffalo, United States
Nallan Suresh, Professor, Suny At Buffalo, United States

This study examines the research stream on production competence theory of Vickery, and its recent extension to the purchasing domain. We extend this framework to the logistics management domain, specifically to the emerging area of logistics outsourcing decisions. This framework of competence hierarchy is tested empirically for the logistics context.

043-0633 The impact of Logistics clusters on companies and employments

Liliana Rivera, Student, Massachusetts Institute of Technology, United States
Yossi Sheffi, Professor, Massachusetts Institute of Technology, United States

This research analyses the effects of logistics clusters on firms located within them, and on their employees. Interview data suggest companies in clusters experience more collaboration, value added services, and upward mobility for their employees. Using survey data, we test these hypotheses for the case of the Zaragoza Logistics Cluster.

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Saturday, 04:00 PM - 05:30 PM, Suites IV — *Track:* Healthcare Operations Management

Session: College of Healthcare Operations Management Best Paper Competition

Chair(s): Rachna Shah

043-0278 Optimal Intervention Programs in Health Care Systems

Margret Bjarnadottir, Assistant Professor, University of Maryland, United States
Leila Zia, Student, Stanford University, United States

We propose a modeling framework to find the optimal subgroup of patients in the presence of multiple intervention options. The research combines state of the art prediction models with operational optimization. Non-attendance to medical appointments is used as a real world application of the proposed techniques.

043-1368 Doctors Under Load: An Empirical Study of State-Dependent Service Times

Robert Batt, Student, University of Pennsylvania, United States
Christian Terwiesch, Professor, University of Pennsylvania, United States

We study how the service process in an emergency department changes in response to system load. We show that triage nurses order more diagnostic tests per patient when the waiting room is crowded, while physicians order fewer tests. In planning models, ignoring these state-dependencies leads to overestimation of system utilization.

043-0961 Stochastic Modeling and Optimization in a Decision Support System for Phase 1 Clinical Trial Management

Jivan Deglise-Hawkinson, Student, University of Michigan Ann Arbor, United States
Mark Van Oyen, Associate Professor, University of Michigan Ann Arbor, United States
Blake Roessler, Professor, University of Michigan Ann Arbor, United States

This research introduces the CAPacity Planning Tool and INformatics (CAPTAIN) decision support system. It optimizes (1) the most valuable set of research trials to conduct within available resources and (2) the booking plan for the enrolling participants, while limiting staff overtime and participants' time to first available treatment.

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Saturday, 04:00 PM - 05:30 PM, Suites V — *Track:* Manufacturing Operations

Session: Relevance of Lean and Six Sigma for Manufacturing Excellence in the 21st Century

Chair(s): Santosh Mahapatra

043-1569 Relevance of Lean and Six Sigma for Manufacturing Excellence in the 21st century

Yavuz Bozer, Professor, University of Michigan Ann Arbor, United States
Wallace Hopp, Professor, University of Michigan Ann Arbor, United States
Morgan Swink, Professor, Michigan State University, United States
Peter Ward, Professor, Ohio State University, United States

The usefulness of Lean and Six Sigma has often been questioned on grounds such as narrow conceptualization, failure to suggest new product ideas, and overreliance on a set of generic tools/standards. This discussion would explore the relevance of the two of the most popular manufacturing innovations in 21st century.

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Saturday, 04:00 PM - 05:30 PM, Suites VI — *Track:* Product Innovation and Technology Management

Session: New Service Design and Development

Chair(s): Ioannis Bellos

043-0394 Value Co-Creation in Dynamic Environments

Emre Demirezen, Student, Texas A&M University College Station, United States
Subodha Kumar, Associate Professor, Texas A&M University College Station, United States
Bala Shetty, Professor, Texas A&M University College Station, United States

We study a value co-creation environment where the client firm gets utility from the project throughout the collaboration, and the effort levels are not observable but might be monitored. We analyze the performance of different contracts and find the best one for the client firm in diverse settings.

043-0430 The Design of Experiential Services: Optimal Sequencing and Durations

Aparupa Das Gupta, Student, University of California Los Angeles, United States
Uday Karmarkar, Professor, University of California Los Angeles, United States
Guillaume Roels, Assistant Professor, University of California Los Angeles, United States

We address sequencing and duration allocation of activities in a service encounter where customer perceptions of experience are important, as in the hospitality industry. We employ evidence from behavioral studies about how people evaluate past experiences. We model these phenomena parsimoniously and design service processes to maximize ex-post customer satisfaction.

043-0589 The Design of Multi-Stage Service Processes

Ioannis Bellos, Assistant Professor, George Mason University, United States
Stylianos Kavadias, Associate Professor, Georgia Institute of Technology, United States

Motivated by the practices of design firms we build on the customer journey concept, which describes services as multi-stage processes. We develop a parsimonious model and we analyze the provider's decisions on the amount of effort she exerts at each stage of the process and the overall price she charges.

043-1492 Analysis of a Two-Stage Service Process: Coordination of Staffing and Effort

Azin Farzan, Student, University of Washington, United States
Yong-Pin Zhou, Associate Professor, University of Washington, United States

We analyze the joint staffing and effort decisions in a service process with two separate tandem stages. We consider decentralized and outsourcing scenarios and analyze the incentive misalignment and design a mechanism that can coordinate effort and staffing decisions. We further investigate multiple clients when the second stage is pooled.

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Saturday, 04:00 PM - 05:30 PM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: Learning, Cognition and Social Issues in Operations
Chair(s): Gopesh Anand

043-1366 Product Configuration, Ambidexterity and Firm Performance in the Context of Industrial Equipment Manufacturing

Fabrizio Salvador, Professor, Instituto De Empresa, Spain
Aravind Chandrasekaran, Assistant Professor, Ohio State University, United States
Tashfeen Sohail, Associate Professor, IE Business School, Spain

Extant accounts of configure-to-order business models overemphasize exploitation of codified product architectures for efficient configuration. We propose that a complementary focus on exploration of new products and processes may be fostered by systematically analyzing past configuration data. Empirical evidence supports our contention relative to firm sales, but not profitability.

043-0552 Managing Knowledge Creation in NPD Projects at High Technology Organizations

Aravind Chandrasekaran, Assistant Professor, Ohio State University, United States
Kevin Linderman, Associate Professor, University of Minnesota, United States
Gopesh Anand, Assistant Professor, University of Illinois Urbana-Champaign, United States

NPD projects in high technology organizations bring together diverse knowledge domains and quickly integrate them to create new products and processes. This research adopts a multi-method approach to understand knowledge creation in NPD projects. We find that knowledge creation activities in these environments benefit from organizational processes at multiple levels.

043-0059 Does the Rationale for Implementing Quality Management Practices Matter?

Dongli Zhang, Assistant Professor, Fordham University, United States
Kevin Linderman, Associate Professor, University of Minnesota, United States
Roger Schroeder, Retired, Tilburg University, United States

This research investigates the social and rational rationales for implementing quality practices. From social perspective, organizations implement the type of quality practices that will be viewed as legitimate to other firms in their industry or country. From rational perspective, organizations implement quality practices that align with their strategic goals.

043-1109 Varying turnover rates: The impact on individual and collective knowledge and productivity

Edward Anderson, Associate Professor, University of Texas Austin, United States
Kyle Lewis, Associate Professor, University of Texas Austin, United States

We use a validated system dynamics model of interacting individual and collective learning curves to examine how varying rates and proportions of turnover among members of a collective affect learning and productivity. Implications for reorganization, reassignment, and employee retention are discussed.

250

Saturday, 04:00 PM - 05:30 PM, Matchless — *Track:* Inventory Management
Session: Inventory Inaccuracies
Chair(s): Jonnatan Aviles-Gonzalez

043-0043 Identifying Multiple RFID Tags in High interferences Environments

Jonnatan Aviles-Gonzalez, Student, Tecnologico De Monterrey, Mexico
Neale Smith, Associate Professor, Tecnologico De Monterrey, Mexico
Cesar Vargas-Rosales, Professor, Tecnologico De Monterrey, Mexico

Radio Frequency Identification (RFID) plays an important role in Warehouse Management, especially during the automatic identification of items. Unfortunately, a warehouse environment has electromagnetic interferences causing read failures in the RFID system. We propose a method for the identification of multiple RFID tags based on accumulated Hamming distances.

043-0099 The use of Rotary Inventory to reduce stock balance divergences

Geraldo Farias, IT Coordinator, Label Evolution Technology Systems, Brazil

The reduction of stock balance divergences is one of the most important activities of the Stock Management Team. This article presents the Rotary Inventory, a material cyclical counting, used to identify stock divergences and investigate its main reasons, since the planning until the decision-making process, executing the complete PDCA Cycle.

251

Saturday, 04:00 PM - 05:30 PM, Gold Coin *Track:* Supply Chain Risk Management

Session: Theories and Practices in Risk Management

Chair(s): Steve Melnyk

043-1390 Towards an Operational Definition of Resiliency

Steve Melnyk, Professor, Michigan State University, United States
John Macdonald, Assistant Professor, Michigan State University, United States
Stanley Griffis, Associate Professor, Michigan State University, United States
Christopher Zobel, Associate Professor, Virginia Polytechnic Institute And State University, United States

Resilience is critical to risk management but poorly understood. We present a view of resilience that is both proactive and reactive. This view is used to identify four types of resilience. These types are then linked to risk and uncertainty. We then identify and explore how resilience can be developed.

043-0522 Measuring the Warning and Recovery Capabilities within Organizations

Jason Riley, Student, Clemson University, United States
Janis Miller, Professor, Clemson University, United States
V Sridharan, Professor, Clemson University, United States

We develop psychometrically valid measures for two risk management capabilities: warning and recovery. Using a judgment-based sorting process, factor analysis, and survey data, we empirically validate the organizational risk management capabilities. We further identify several antecedent competencies that affect the operationalized risk management capabilities.

043-0177 Connecting the Forward and Reverse Flows of Quality: A Model for Total Quality Delivery

Arturo Osorio, Assistant Professor, Rutgers University, United States
Steven Carnovale, Student, Rutgers University, United States
Maria Corradini, Professor, Rutgers University, United States

Handling practices of intermediaries can diminish the quality of products such that manufactured quality isn't delivered quality. Thus, we advance a model, framed by the knowledge-based-view and social-network-theory, focused on preserving the manufactured quality during product distribution. We suggest theoretically grounded propositions and advance an exemplar for future testing.

252

Saturday, 04:00 PM - 05:30 PM, Mattie Silks *Track:* Service Operations

Session: Service Operations Application 1

Chair(s): Ayham Jaaron

043-0017 Enhancing service organizations resilience through systems thinking

Ayham Jaaron, Assistant Professor, An-Najah National University, Palestinian National Authority
Christopher Backhouse, Professor, Loughborough University, United Kingdom

This paper explores the relationship of applying systems thinking for service delivery design with enhancing organisational resilience. Two case studies were conducted in two British service organisations. Results show that systems thinking operationalized two-dimensional determinants for improving organisational resilience; organically structured organisation, and highly affectively committed employees.

043-0024 Teaching Service Operations Effectively With a Competitive Simulation

Randall Chapman, President, LINKS Simulations, United States

To effectively blend an integrative competitive simulation into a services operations course, pre-course planning and within-course executional elements must be combined to create the environment for a successful instructor/student experience. This presentation reviews best-practice teaching ideas for crafting and managing such a learning experience within a service operations course.

043-0421 New services development (NSD) in higher education: a QCA analysis

Daniel Galelli, Student, Fundacao Getulio Vargas, Brazil
João Mario Csillag, Professor, Fundacao Getulio Vargas, Brazil
Ronaldo Dultra-de-Lima, Student, Fundacao Getulio Vargas, Brazil
Chen Yen-Tsang, Student, Fundacao Getulio Vargas, Brazil
João Luis Quaglia, Student, Fundacao Getulio Vargas, Brazil

The purpose of this study is to analyze which resource combinations are used in the development of new services (NSD) in higher education. Through the use of qualitative comparative analysis (CQA), it was noticed that the formal routines are not being considered in practice, despite being a issue in theory.

043-1459 Applying service operations principles to create grounded learning experiences for operations managers

Jean harvey, Professor, Universite Du Quebec A Montreal, Canada

The challenge: to design and manage an operationally stable, repeatable, and reproducible process for interweaving theory and personal actions in a meaningful business context, while keeping individual and group learning in sync. Such a process, based on much iteration over many years, is presented and analyzed.

253 Saturday, 04:00 PM - 05:30 PM, Molly Brown *Track:* Work Force Planning
Session: New Advances in Workforce Planning 2
Chair(s): Jose Talamo

043-1494 Competence Matrix and workforce flexibility on Brazilian automotive chains
Jose Talamo, Assistant Professor, Universidade Federal do ABC, Brazil
Camila Mota, Student, Universidade Federal do ABC, Brazil

Transformations of Brazilian's automotive chains, stimulated by competition, financial resources from different nationalities and innovation dynamics, improve core competence and integration of automotive chains, reinforcing outsourcing and modular consortia, demanding flexible workforce. Competence Matrixes, based on practical and theoretical training, are fundamental management tool for training processes, essential to flexibility.

043-1442 Logistics and Supply Chain Personnel – Surveying the Market
Manoel Reis, Professor, Eaesp - Fgv, Brazil
Juliana Santos, Student, Lancaster University, Brazil

The survey used two kinds of questionnaires applied to professionals and companies about skills in logistics and supply chain in Brazil. Professionals informed their actual skills and the complementary ones needed. The companies informed the managerial and operational skills needed, and the actual levels of competence of professionals currently employed.

043-0005 Work Allocation in Complex Production Processes: A Methodology for Decision Support
Roberto Marx, Assistant Professor, Universidade De Sao Paulo, Brazil

The purpose of this paper is to describe a method for decision support of work allocation in complex production processes, not based only in time and motion studies, but considering other factors that might impact this decision. The method is based on the generation of alternative scenarios of feasible alternatives.

254 Saturday, 04:00 PM - 05:30 PM, Spruce *Track:* Purchasing and Supply Management
Session: Sustainability in Purchasing
Chair(s): Richard Monroe

043-0977 Sustainable Supply Chain: A Framework for Evaluations
Richard Monroe, Associate Professor, East Carolina University, United States

The objectives of sustainability are to satisfy the triple bottom line – the environment, the economy and society. Initiatives are developed, potential improvements are estimated and outcomes are documented after implementation. This paper offers a framework for alternative tools and evaluation methods to assist with the analysis of sustainable initiatives.

043-0038 Diffusion of Environmental Business Practices: A Network Approach
Wendy Tate, Associate Professor, University of Tennessee Knoxville, United States
Lisa Ellram, Professor, Miami University, United States

The purpose of this research is to build a conceptual foundation that examines network effects on the diffusion of environmental business practices (EBP). Based on existing theory, variation in the level of structural and relational embeddedness affects network diffusion of environmental business practices differently.

043-0037 Do consumers invest in Green Supply Chain Management? An empirical assessment
Dara Schniederjans, Assistant Professor, University of Rhode Island, United States
Chris Starkey, Student, University of Connecticut Storrs, United States

This research investigates what makes consumers more willing to pay for a product developed from green supply chain practices. Using SEM analysis an empirically validated model is developed which shows the impact of moral emotion, self concept, attitude, perceived behavioral control and peer pressure on an individual's intention to purchase.

255 Saturday, 04:00 PM - 05:30 PM, Nat Hill *Track:* Retail Operations Management
Session: Topics in Online Retailing
Chair(s): Nancy Southin

043-0440 Factors Influencing Multichannel Consumers' Intention to Use Online Order/In-store Pickup Service
Lih-Bin Oh, Associate Professor, Xi'an Jiaotong University, China
Yong Su, Student, Xi'an Jiaotong University, China

Online Order/In-store Pickup (OOIP) is becoming a popular order fulfillment service offered by multichannel retailers to allow customers to pick up their online order in the physical store. This study examines the individual and convenience factors that can influence multichannel consumers' intention to use OOIP service.

043-0929 Transactional Level Determinants of Product Returns
Shashank Rao, Assistant Professor, Auburn University, United States
Elliot Rabinovich, Associate Professor, Arizona State University Tempe, United States
A. Knemeyer, Associate Professor, Ohio State University, United States

Pressure continues to build on Internet retailers to squeeze out inefficiencies from their day-to-day operations. One major source of inefficiencies for these retailers is product returns. This session focuses on an exploration of the potential role that operational processes attributes on return rates of online purchases.

043-1550 Return policy composition: Content analysis of e-retailer return policies
Nancy Southin, Student, University of Calgary, Canada
Giovani da Silveira, Professor, University of Calgary, Canada

This paper presents an analysis of the return policies of North American e-retailers. Restrictions in the policies which limit consumers' abilities to return products for refunds demonstrate similarities across product type and firm size. Details of the types ofrestrictions and how they vary will be discussed.

256 Saturday, 04:00 PM - 05:30 PM, Pomeroy *Track:* Operations Management Practice
Session: Linking Supply Chain and Operations Management Practice and Academics - Perspectives of Lean Six Sigma Professionals
Chair(s): Sanjay Ahire

043-1168 LSS Consulting Experiences and Win-Win-Win Proposition

Sanjay Ahire, Professor, University of South Carolina, United States

I will present highlights of successful consulting projects using LSS approach through academic-industry outreach efforts at University of South Carolina and triple wins - for students, for industry partners, and for the school. Validation as a LSS Master Black Belt practitioner will be shared.

043-1466 Why Industry Validation of Academic Program's Value Matters and How To Achieve It?

Keith Holliday, Director Corp. Supply Chain and Operating Excellence, Sonoco Products Company, United States

Industry values graduates from business schools who don't only talk the talk but also can walk the walk. Sonoco has co-developed a Sonoco-USC Lean Six Sigma Green Belt Initiative with USC's Global Supply Chain. As it's co-champion, I will discuss the major strengths & prerequisites for such an industry validation.

043-1631 Why Industry Validation of Academic Program's Value Matters and How to Achieve It

Keith Holliday, Director Corp. Supply Chain and Operating Excellence, Sonoco Products Company, United States

Industry values graduates from business schools who have real world experience applying lean six sigma. Sonoco has co-developed a Sonoco-USC Lean Six Sigma Green Belt Initiative with USC's Global Supply Chain Program. As it's co-champion, I will discuss the major strengths and prerequisites for such an industry validation.

257 Saturday, 04:00 PM - 05:30 PM, Salon E *Track:* Manufacturing Operations
Session: Inventory Management
Chair(s): Jose Humberto Ablanedo Rosas

043-0311 Optimizing Capital Investment Decisions at Intel Corporation

Feryal Erhun, Assistant Professor, Stanford University, United States
Karl Kempf, Fellow, Intel Corporation, United States
Erik Hertzler, Staff Engineer, Intel Corporation, United States
Timothy Rosenberg, Financial Enterprise Services, Intel Corporation, United States
Chen Peng, Researcher, Google Inc., United States

Intel Corporation spends over $5 billion annually on manufacturing equipment. With increasing lead times from equipment suppliers and increasing complexity in forecasting market demand, optimizing capital investment decisions is a significant managerial challenge. We describe a framework that we have developed in response to this challenge.

043-0343 Quantity Discounts under Supply Uncertainty: The Case for Acquiring Cores

Toyin Clottey, Assistant Professor, Iowa State University, United States
WC Benton, Professor, Ohio State University, United States

Current quantity discount formulations assume that the supply from the vendor is certain. In the case of acquiring end-of-use products (i.e., cores) for reuse activities, supply may be uncertain. We extend the formulations for determining an all-units quantity discount schedule to include this case, and investigate conditions for cost minimization.

043-1157 An economic order quantity for perishable food with quality deterioration, and price and profit optimization.

Jaime Sánchez Díaz, Manager, RYC Alimentos, S.A. de C.V., Mexico
José Luis Martínez Flores, Professor, Universidad Popular Autonoma del Esatdo de Puebla, Mexico
Elías Olivares Benítez, Professor, Universidad Popular Autonoma del Estado de Puebla, Mexico
Jose Humberto Ablanedo Rosas, Assistant Professor, University of Texas at El Paso, United States

An EOQ model which assumes an exponential demand is presented. The model is developed for perishable food and optimizes the order quantity and product price (maximizing net profit). Furthermore, the model takes into account the constant speed of product quality degradation of the perishable product along the food marketing chain.

Sunday, 08:00 AM - 09:30 AM

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Sunday, 08:00 AM - 09:30 AM, Salon A
Track: Behavioral Issues in Operations Management
Session: System Dynamics and Systems Thinking
Chair(s): Elliot Bendoly

043-0231 System dynamics Understanding in Projects: Information Sharing, Psychological Safety and Performance Effects

Elliot Bendoly, Associate Professor, Emory University, United States

This study suggests that an individual's understanding of system dynamics (a dimension of systems thinking) as well as the similarity of such understanding to that typical of their team is, in fact, a strong predictor of both feelings of psychological safety and information sharing quality in project work.

043-0266 A system dynamics model of individual and collective learning amid disruption and serial reorganization

Edward Anderson, Associate Professor, University of Texas Austin, United States

Using the methodology of system dynamics, we model the effects of disruptive events on learning and productivity in organizations. We leverage the theory of learning-by-doing and transactive memory system theory to model the underpinnings of learning processes at the collective and individual levels. We simulate the impact of disruptive events.

043-0301 Managerial Behavior and Profit Maximization - A Systems-Dynamics Model

Elliot Bendoly, Professor, Emory University, United States
Kevin Linderman, Associate Professor, University of Minnesota, United States
Paulo Goncalves, Associate Professor, University of Lugano, Switzerland
Rick Hardcopf, Student, University of Minnesota, United States

We use a strategy-oriented system dynamics model to capture managerial preferences for competing operational tactics under profitability-loss pressures. Survey results provide baseline parameterizations of the model. Structured interviews leveraging model simulations provide critical introspection and refined depictions of managerial viewpoints. Our results show distinct often counter-strategic biases in managerial response.

043-0371 Order amplification and behavior response to shortage

Paulo Goncalves, Associate Professor, University of Lugano, Switzerland

When demand exceeds supply, retailers hedge against shortages by placing multiple orders with multiple suppliers. This paper develops a formal mathematical model of the supplier-retailer relationship. Our analysis shows that the time for retailers to perceive supplier's delivery delay is an important leverage in controlling retailers' inflationary ordering behavior.

043-1404 The Efficiency Trap and the Role of Learning by Doing in Process Improvement Dynamics

Brad Morrison, Associate Professor, Brandeis International Business School , United States

The paper develops a system dynamics model of process improvement when the same workers do both production and improvement work. The productivity of improvement work grows with worker experience. Results show managerial policies emphasizing efficiency are unlikely to yield lasting benefits, while policies that foster learning yield sustained superior performance.

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Sunday, 08:00 AM - 09:30 AM, Salon B
Track: Healthcare Operations Management
Session: Models in Healthcare
Chair(s): Claudia Rosales

043-0104 A New Buffer-Sizing Approach to Robust Patient Scheduling

Elham Torabi, Student, University of Cincinnati, United States
Craig Froehle, Associate Professor, University of Cincinnati, United States
Uday Rao, Associate Professor, University of Cincinnati, United States
Michael Magazine, Professor, University of Cincinnati, United States

In complex clinics involving multiple care providers, coping with operational disruptions can be challenging. We develop robust optimization models for patient scheduling with uncertain clinical task durations using a buffer-sizing approach that minimizes the difference between predicted and expected patient waiting, thereby generating a more realistic schedule.

043-0551 Operations Improvement for Tele-ICUs

Michael Fry, Associate Professor, University of Cincinnati, United States
Muer Yang, Assistant Professor, University of St. Thomas, United States
Corey Scurlock, National Medical Director, Advanced ICU Care, United States

A tele-ICU remotely provides additional clinical care to intensive-care units (ICUs) through advanced audio-visual communication systems. We build a simulation model to evaluate the current operations of a large tele-ICU service provider that remotely manages 28 hospital ICUs across the country, and propose new approaches to reduce operational cost.

043-0928 The Implications of Operational Effectiveness on Competition: Evidence from California Hospitals

Wei Wu, Student, University of Tennessee Knoxville, United States
Bogdan Bichescu, Associate Professor, University of Tennessee Knoxville, United States
Randy Bradley, Lecturer, University of Tennessee Knoxville, United States

Hospitals have adopted various competitive strategies to gain market share, attract indispensable resources, and advance their mission. Using hospital-level, secondary data, we investigate the marketing, operational, and financial benefits associated with competing on operational effectiveness, as defined by significant improvements in length of stay and cost per discharge performance.

043-1541 Real-Time Inventory Visibility – Is it Essential to Reduce Hospital Supply Chain Costs?

Claudia Rosales, Assistant Professor, Michigan State University, United States

Michael Magazine, Professor, University of Cincinnati, United States
Uday Rao, Associate Professor, University of Cincinnati, United States

Hospitals using two-bin systems to manage medical supplies can achieve improvements through parameter optimization, using optimal periodic-review policies; or policy improvement, using continuous-review policies enabled by the use of RFID technology. Using hospital data we identify system conditions that favor each option and provide managerial insights for system design considerations.

264 Sunday, 08:00 AM - 09:30 AM, Salon D *Track:* Sustainable Operations
Session: Supply chain coordination and sustainability
Chair(s): Vitor Brock

043-0175 Pricing Services for Storable Goods - Financial and Environmental Impact of Contract Choice

Peter Berling, Associate Professor, Lund University, Sweden
Fredrik Eng-Larsson, Student, Lund University, Sweden

We consider a situation where a service provider sells a service to a buyer who uses the service to produce/distribute a product with stochastic demand that can be stored between periods. We analyze how the cost and demand structures influence the preferred contract and the resulting environmental footprint.

043-1006 The Strategic Supplier Positioning Matrix: A Sustainable Approach to Supplier Management

Vitor Brock, Lecturer, UNISINOS, Brazil
Iuri Gavronski, Assistant Professor, UNISINOS, Brazil

Supplier management activities play a strategic role and because of external pressures focal-firms are also responsible for supplier's environmental incidents. Managers face the challenge to broadly assess supplier's strategic relevance, operational and environmental performance. In this case study we present a practical approach to integrate sustainability into strategic supply-chain decisions.

043-1131 Indicators and strategic management: a contribution to the sustainable operations

Juliana Egea, Student, Unesp Universidade Estadual Paulista, Brazil
Flávia Marchesano, Student, Unesp Universidade Estadual Paulista, Brazil
Allanna Dos Santos, Student, Sao Paulo State University - UNESP , Brazil

The instruments used to manage operations have to add to sustainable. The aim is to analyze aspects of sustainability when are considered in formulating organizational strategy while good operating practices.In the research, discusses the theory and actual practices of organizations on strategy and sustainable operations through a literature review.

043-0246 Management for Sustainability and Business Performance in the Mineral Industry

Clandia Gomes, Professor, Santa Maria Federal University, Brazil
Isak Kruglianskas, Professor, University of Sã£O Paulo, Brazil
Jordana Kneipp, Student, Santa Maria Federal University, Brazil
Roberto Bichueti, Student, Santa Maria Federal University, Brazil
Luciana Aparecida Barbieri, Student, Santa Maria Federal University, Brazil

This study has examined how management for sustainability may affect the performance of companies in the mining industry of Brazil. Main results of the survey have shown that there is a positive relationship between some of the factors related to sustainable management practices and business performance.

265 Sunday, 08:00 AM - 09:30 AM, Salon G *Track:* Supply Chain Management
Session: Demand Planning
Chair(s): Xun Xu

043-1394 Supply chain performance: The effects of random and structural demand patterns on total supply chain costs and customer stock-outs

Laird Burns, Assistant Professor, University of Alabama in Huntsville, United States
Fan Tseng, Professor, University of Alabama Huntsville, United States

Supply chain performance depends on demand patterns, cost structures, and supply chain design. We extend prior work on random demand patterns to include effects on total supply chain costs and customer stock-outs from structural demand patterns under conditions of capacity constraints and surges in customer demand.

043-1422 Coordinating a Tourism Supply Chain using Cooperative Advertising under Various Channel Power Structures

Xun Xu, Student, Washington State University Pullman, United States
Charles Munson, Professor, Washington State University Pullman, United States

We analyze a tourism supply chain containing a theme park, local hotels, and multiple travel agents using a game theoretic approach in three scenarios: Nash equilibrium, Stackelberg equilibrium, and full cooperation. We find that a vertical cooperative advertising strategy is particularly effective in increasing customer demand.

043-0374 Impact of Returns on the Bullwhip Effect

Dean Chatfield, Assistant Professor, Old Dominion University, United States

We seek to determine if returns impact the level of bullwhip effect observed in a multi-stage supply chain. We build a hybrid agent/discrete-event simulation model and execute it under various conditions of demand variance, lead-time variance, information sharing, and return allowance. We find permitting returns significantly increases the bullwhip effect.

043-0112 Supply Chain Responsiveness: A Relational Capability Perspective

Santanu Mandal, Student, Oklahoma State University, United States
Rathin Sarathy, Professor, Oklahoma State University, United States
Vishal Mishra, Assistant Professor, IBS, Hyderabad, India
Sourabh Bhattacharya, Associate Professor, IMT, Hyderabad, India
Surojit Ghosh Dastidar, Associate Professor, IMT, Hyderabad, India

Developing supply chain responsiveness in a global context mandates presence of several relational attributes.Based on RBV, dynamic capability and commitment-trust theory, the study conceptually explores trust, commitment, communication, co-operation,adaptation and interdependence as relational resources in developing supply chain responsiveness and suggests several suitable outcomes.

266 Sunday, 08:00 AM - 09:30 AM, Salon H — *Track:* Supply Chain Management
Session: Supply Chain Coordination
Chair(s): Guwen Shen

043-0125 The Coordination of Service Supply Chain Based on Option and Spot Market in Emergency

Haifeng Zhao, Associate Professor, Tongji University, China
Wanqing Mao, Student, Tongji University, China

A coordination model of service supply chain is built to analyze the optimal decision based on the combination of option contracts and spot market. Also, It is applied into the emergency circumstance, when demand, price as well as cost may be influenced. The new coordination strategy is also discussed.

043-0021 A research on price intervening measures and supply chain coordination in unconventional emergencies

Guwen Shen, Student, Huazhong University of Science & Technology, China
Xianhao Xu, Professor, Huazhong University of Science & Technology, China

This paper investigates an one-supplier- one-retailer supply chain that experiences an increasing demand after unconventional emergencies happened.We give the government's control strategy in order to ensure the supply of the products and modify the original revenue sharing contract to make sure the supply chain can be coordinated.

268 Sunday, 08:00 AM - 09:30 AM, Salon J — *Track:* Humanitarian Operations and Crisis Management
Session: Journal Editors' Perspective on the Future of HOCM Research
Chair(s): Nezih Altay

043-1663 Editors Panel

Lisa Ellram, Professor, Miami University, United States
Craig Carter, Associate Professor, Arizona State University Tempe, United States
Gyongyi Kovacs, Professor, Hanken Svenska handelshögskolan, Finland
Irmak renda-tanali, Professor, University of Maryland, United States

A panel discussion with the editors of relevant journals on the future of HOCM research.

270 Sunday, 08:00 AM - 09:30 AM, Suites II — *Track:* Production Planning and Scheduling
Session: Process Restructuring and ERP Applications
Chair(s): Suri Gurumurthi

043-1506 Collaborative Resource Planning (CRP): An Alternative to ERP for Collaborative Environments

Suri Gurumurthi, Lecturer, University of North Carolina Chapel Hill, United States

Planning models within ERP are designed to work within the confines of the firm. When resources have to be allocated within a decentralized and collaborative context, the main benefits of ERP are diminished. We provide a collaborative framework where different firms can develop joint resource schedules through negotiation and bargaining.

043-1486 Internationalization of a network: An evolution of Uppsala Model

Linduarte da Silva, Professor, Instituto Mauá de Tecnologia, Brazil
Suzana Souza Santos, Professor, Universidade De Sao Paulo, Brazil

This article aims to study the Uppsala Model, which describes the steps that constitute theinternationalization process of an organization. Through a case study on the automotive segment of Latin-American's industry, it is intended to demonstrate the need for creation of a new stage in the companies' process of internationalization can be aggregated to the Uppsala Model.

043-1194 Restructuring of Production vs. Continuous Improvement Processes - How to Increase Production Performance

Günther Schuh, Professor, Aachen University, Germany
Till Potente, Assistant Professor, Aachen University, Germany
Carlo Hausberg, Student, Rwth Aachen University, Germany

The approach presented in this paper helps companies to systematically evaluate whether a restructuring of a production is desirable or the optimization of the production processes in the current structure should be preferred. Based on the results the companies decision for or against restructuring the production will be facilitated.

043-0423 A Hybrid Metaheuristic For Resource Cost Minimization In Multi Mode Resource Constrained Project Scheduling Problem

Vijay Bilolikar, Student, Indian Institute of Technology Bombay, India
Karuna Jain, Professor, Indian Institute of Technology Bombay, India

This paper presents a hybrid metaheuristic solution procedure using genetic algorithm for global and simulated annealing for local search, for minimizing resource investment cost for a multi mode resource constrained project scheduling problem (MRCPSP). Detailed computational experiments are performed on set of standard test instances with randomly generated resource costs.

271 Sunday, 08:00 AM - 09:30 AM, Suites III — *Track:* Empirical Research in Operations Management
Session: Empirical Studies in Operations Strategy I
Chair(s): Andrew Kach

043-0161 The Effects of Business Environment on an Integrated Supply Chain Strategy and Operational Flexibility: An ana

Wantao Yu, Senior Lecturer, University of East Anglia, United Kingdom
Mark Jacobs, Assistant Professor, Universtity of Dayton, United States
Roberto Chavez, Student, Esade Business School, Spain

Drawing upon contingency and resource dependency theories, this study investigates the relationships among business environment, integrated supply chain strategies, and operational flexibility. Empirical results suggest business cost and environmental dynamism significantly impact internal integration, and that competitive hostility has a significant positive effect on both customer and supplier integration.

043-0364 The combined role of Manufacturing Strategy and Strategic Orientation: Achieving Innovative Excellence

Andrew Kach, Assistant Professor, Department of Management, Technology, and Economics, Switzerland
Christoph Bode, Assistant Professor, Department of Management, Technology, and Economics, Switzerland

Research has provided different approaches towards understanding manufacturing strategy, yet little has been done to assess the effects from interplay between business-level strategic orientations and internal manufacturing environments on innovativeness. This study seeks to understand how firms can bolster internal innovativeness by appropriately aligning their manufacturing and business-level strategic orientations.

043-1082 Formulating operations strategy: An Alternative methodology

Kalinga Jagoda, Associate Professor, Mount Royal University, Canada
Cassandra Bianchini, Student, Mount Royal University, Canada
BENJAMIN HO, Student, Mount Royal University, Canada

This study investigates the relationship between operational strategy and organizational performance. Multiple case studies in the Canadian oil and gas sector were completed and used to identify patterns in operations strategy formulation and progression. In addition, the influence of the contextual factors on those patterns is also investigated.

043-0314 Survival of status: Empirical evidence

Ingmar Zanger, Student, Swiss Federal Institute of Technology Zurich, Switzerland
Stephan Wagner, Professor, Swiss Federal Institute of Technology Zurich, Switzerland
Sidhartha Padhi, Senior Lecturer, Swiss Federal Institute of Technology Zurich, Switzerland

To build lasting operations models for companies is a developing research field. High company status plays an important role to gain both sales and cost advantages. An analytical model of factors and dynamics of status is derived and validated based on empirical data of large manufacturing corporations (US, Japan, Europe).

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Sunday, 08:00 AM - 09:30 AM, Suites IV — *Track:* General Track
Session: Practice Leaders Forum: Healthcare and Operations
Chair(s): Christopher Tang

043-1682 Facing an Uncertain Future: Mayo Clinic's Center for the Science of Health Care Delivery

Thomas Rohleder, Professor, Mayo Clinic, United States

Mayo Clinic desires to maintain its leadership position as a patient-centered health care organization in the face of significant pressures to reduce its overall cost structure. A key strategic component to achieve this goal is the newly formed Center for the Science of Health Care Delivery. This presentation will discuss

043-1683 Advancing From Product Development to Product Lifecycle Management within Operations at Amgen

Kimberly Clemenson, Director Global Operation, Amgen, United States

Developing a biologic drug, including the manufacturing processes and quality systems to support it, spans many years. As a result of long development times, patient needs, market demands, and design requirements must be projected years in advance of the product launch. Furthermore optimizing the product or manufacturing processes

043-1684 Next Generation Supply Chains: Efficient, Fast, and Tailored

Dirk de Waart, Partner, Pricewaterhousecoopers, United States

Results of PwC's Global Supply Chain Survey 2013. This year's global supply chain survey by PwC shows how Leaders are moving ahead of the pack. They're tailoring their supply chains to customer needs and investing in next-generation capabilities while keeping the focus on supply chains that are both fast and

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Sunday, 08:00 AM - 09:30 AM, Suites V — *Track:* Manufacturing Operations
Session: Product and Process Innovation
Chair(s): Kai Kreisköther

043-1160 Innovation, Product Success and Firm performance: Empirical Evidence from the Automobile Industry

Younsuk Lee, Student, Sogang University, Korea, Republic of (South Korea)
Hojung Shin, Associate Professor, Korea University, Korea, Republic of (South Korea)

Innovative activities such as R&D and patenting have been considered essential for a firm's sustainable financial performance. However, anecdotal evidence shows that these activities do not always pay off. We examine how the product success mitigates the association between innovation and firm performance, using the data from the automobile industry.

043-1636 A Methodology for Integrated Process Simulation in the Industry

Luis Felipe Camargo, Student, UNISINOS, Brazil
Luis Rodrigues, Professor, Unisinos, Brazil
Daniel Lacerda, Professor, Unisinos, Brazil

This paper proposes a Methodology for Integrated Process Simulation (MIPS), to support investment decisions in the mining industry, which considers the dynamic, stochastic and systemic characteristics of mining operations. The MIPS supports the development of a simulation model that considers product quality, process productivity and production costs.

043-0092 A re-examination of single-pass heuristics for balancing U-lines

Jaydeep Balakrishnan, Professor, University of Calgary, Canada

Chun-Hung Cheng, Associate Professor, Chinese Univ of Hong Kong, Hong Kong
Kin-Chuen Ho, Lecturer, VTC School of Business and Information Systems, Hong Kong

Single-pass heuristics have been widely used for the balancing problem in straight-lines. In this work, we examine the same heuristics for U-lines. An extensive computational study is used to show the effectiveness of these heuristics. Further, we also consider how these heuristics perform in a general operating environment.

043-0363 Value-oriented layout planning using the Virtual Production Intelligence (VPI)

Achim Kampker, Associate Professor, WZL at RWTH Aachen University, Germany
Sabina Jeschke, Professor, IMA at RWTH Aachen University, Germany
Peter Burggräf, Lecturer, WZL at RWTH Aachen University, Germany
Alexander Meckelnborg, Student, WZL at RWTH Aachen University, Germany
Kai Kreisköther, Student, WZL at RWTH Aachen University, Germany
Moritz Krunke, Student, WZL at RWTH Aachen University, Germany
Max Hoffmann, Student, IMA at RWTH Aachen University, Germany

Due to increasing cost pressure, factory planning has to focus on value-adding activities. Layout planning plays a significant role in factory planning, as it must integrate the previous planning results. In order to realize a value-oriented layout planning, a layout assessment approach using the virtual production intelligence platform is presented.

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Sunday, 08:00 AM - 09:30 AM, Suites VI — *Track:* Product Innovation and Technology Management
Session: Innovation in Services, Biopharma and Hitech Industries
Chair(s): CHERRY SINGHAL

043-1120 Clinical Trials and New Drug Development: Optimal Investment Policies and Application

Zhili Tian, Assistant Professor, Towson University, United States
Panos Kouvelis, Professor, Washington University St Louis, United States
Joseph Milner, Associate Professor, University of Toronto, Canada

Firms conduct Phase III drug trials by enrolling and treating hundreds or thousands of patients. Finding these patients is expensive and time consuming, with uncertainty. We consider how firms should determine their investment policy. This must be done recognizing that there is also uncertainty in the outcome of a trial.

043-1025 Meta-analytic test of the relationship between technological innovation and firm performance

CHERRY SINGHAL, Student, University of South Carolina, United States

Extant literature has employed various innovation measures to examine the relationship between technological innovation and firm's performance leading to largely inconsistent conclusions. This paper employs a meta-analysis methodology (Lipsey and Wilson, 2001) to quantitatively compile the results of these focal studies. The impact of possible moderators is also discussed.

043-1498 Network effects and Vertical Integration

Wei Wang, Student, Peking University, China
Tianxiao Gong, Student, Peking University, China
Lihua Chen, Professor, Peking University, China

Microsoft became a competitor of its downstream partners (e.g. Acer, Lenovo, HP etc.) after introducing its own tablet, the Surface. Why did it adopt the vertical integration strategy? A possible explanation is that its product exhibits network effects and vertical integration can help it establish a larger user base quickly.

043-1379 Antecedents of Service Innovations - An Entrepreneurship Perspective

Sidhartha Das, Associate Professor, George Mason University, United States
Maheshkumar Joshi, Associate Professor, George Mason University, United States
Nacef Mouri, Assistant Professor, George Mason University, United States

We study the effects of proactiveness, risk-taking and formality on service innovations in the context of technology services firms. Results show that while risk-taking is directly related to service innovativeness, proactiveness has an inverted-U relationship with it; and that formality moderates this curvilinear relationship.

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Sunday, 08:00 AM - 09:30 AM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: Knowledge Creation in Health Care
Chair(s): Kenneth Boyer

043-0467 Trends in Hospital Information Technology (HIT) Strategy Choices

Christopher McDermott, Associate Professor, Rensselaer Polytechnic Institute, United States
Kenneth Boyer, Professor, Ohio State University, United States
Luv Sharma, Student, Ohio University, United States

This study looks at evolutionary patterns in HIT strategies using longitudinal data combined from 3 secondary sources: HIMSS, TREO and CMS for the years 2005-09. Preliminary results indicate the existence of 4 investment strategies that evolve over time with hospitals migrating toward the high performance strategy over time.

043-1620 Do Two Rights Make a Wrong? The Clash of CPOE and Safety Culture in Healthcare Quality Improvement

Sarv Devaraj, Professor, University of Notre Dame, United States
Carrie Queenan, Assistant Professor, University of South Carolina, United States
Thomas Kull, Assistant Professor, Arizona State University Tempe, United States

US hospitals have a well-documented safety problem. Many have advocated two approaches to improving safety: using CPOE and improving patient safety culture. Using Organizational Information Processing Theory, we argue that these approaches can clash, having less than optimal impact on safety outcomes. We test our hypotheses using data from 280.

043-0119 Electronic medical records, hospital focus, and performance: A longitudinal analysis of U.S

Xin Ding, Assistant Professor, University of Houston, United States
Xiaosong (David) Peng, Assistant Professor, University of Houston, United States

Drawing on the resource-based view of the firm and the notion of "focused factory", this study examines the longitudinal impacts of EMR capabilities on hospital performance and whether these impacts differ across hospitals with varying levels of focus, defined as the level to which a hospital's operations are concentrated on certain clinical areas.

276 Sunday, 08:00 AM - 09:30 AM, Matchless *Track:* Inventory Management
Session: Collaborative Forecasting and Other Topics in Inventory Management
Chair(s): Burcu Aydin

043-0081 Optimal Periodic Flexible Policies for Two-stage Serial Supply Chains

Fang Liu, Assistant Professor, Nanyang Technological University, Singapore
Srinagesh Gavirneni, Associate Professor, Cornell University, United States

Periodic Flexible (PF) policies can reduce the inefficiency due to decentralization by as much as 43%. Existing literature has mostly used ad-hoc periodic flexible policies while we characterize the optimal periodic flexible policies and show that they can further reduce the supply chain cost by about 13%.

043-1342 Forecast and Response Networks in Collaborative Inventory Management

Burcu Aydin, Research Scientist, Hp Labs, United States
J.S. Marron, Professor, University of North Carolina Chapel Hill, United States

Collaborative forecasting involves exchanging information by buyers and sellers on the upcoming demand and supply, often with frequent updates. The structure can be modeled as an information network. This talk introduces a novel Gaussian Graphical Model technique to analyze and visualize the flow of information in this network.

043-0163 Impact of Stockout Substitution on Retailer's Inventory

Chirag Surti, Assistant Professor, University of Ontario Institute of Technology, Canada
Prakash Abad, Professor, Mcmaster University, Canada
Elkafi Hassini, Associate Professor, Mcmaster University, Canada

Customers unwilling to switch stores upon stockout of their preferred product, switch to a competing substitute. Initially this appears to be beneficial to the retailer, however she may be worse off due to "inventory-cannibalization". We demonstrate this using a price-setting newsvendor model for two substitute products with linear demand.

043-1580 Planning Production and Inventories with Uncertain Demand and Congestion

CIGDEM GURGUR, Associate Professor, Purdue University, United States

We develop insights into the influence of supply and demand uncertainty and ways to mitigate their effects in the context of multi-product and multi-stage systems. We introduce new stochastic integer programming models and new decomposition based approximations for solving these computationally challenging problems which involve logistical transit and para-transit operations.

043-0022 Bayesian Design of Stochastic Inventory Systems

Tapan Bagchi, Retired, NMIMS Mumbai, India

This paper re-visits the Bayesian approach to test its efficacy in optimally designing the classical (s, Q) inventory model. A heuristic search of the unstructured (s, Q) decision space finds that one can indeed make a decent start by the Bayesian approach–and keep total cost nearly optimally low.

277 Sunday, 08:00 AM - 09:30 AM, Gold Coin *Track:* Supply Chain Risk Management
Session: Resilient Supply Risk Management
Chair(s): Hannes Hofmann

043-1228 Measuring supply chain resilience based on biological cell elasticity theory

Qingyi Fei, Student, Southeast University, China
Lindu Zhao, Professor, Southeast University, China
Xinping Wang, Student, Southeast University, China

This paper proposes a quantitative measurement of supply chain resilience based on biological cell elasticity theory. A model for the supply chain system with a retailer and a supplier is established. The results provide effective decision-making for managers to reduce the impact of risks and recover from the performance loss.

043-0880 Determinants for Supply Chain Sustainability Risks

Hannes Hofmann, Student, Institute for Supply Chain Management, Procurement and Logistics, Germany

Increasingly, firms are associated with their suppliers' misconduct on social and ecological issues resulting in adverse stakeholder actions. We challenge the apparent universal validity of that conception. Advancing research on supply chain sustainability risks, we apply qualitative explorative methodology to identify contextual factors for the alternating severity of those risks.

043-0434 Measuring Risk in Supply Chain Networks: An Analytical Perspective

Myles Garvey, Student, Rutgers University, United States
Steven Carnovale, Student, Rutgers University, United States
Sengun Yeniyurt, Associate Professor, Rutgers University, United States

Risk and risk-management is critical in the planning of supply-chains. Yet, current literature doesn't consider risk in a quantifiably-intricate enough way to prevent it. Hence, we propose an analytically rigorous framework leveraging a network-based structure considering causal dependencies of risk. We conclude with measures of risk derived from our framework.

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Sunday, 08:00 AM - 09:30 AM, Molly Brown
Track: Work Force Planning
Session: New Models for Strategic Workforce Planning
Chair(s): Marco Better

043-1679 Tutorial: Combining Simulation and Optimization for Strategic Workforce Planning

Marco Better, Director, Customer Solutions, Optek Systems, Inc., United States

Strategic workforce planning (SWP) has been identified as a top business challenge and a high priority in order to produce organizations that are capable of performing more effectively. In this tutorial we'll demonstrate a state of the art combination of simulation and optimization that enables organizations to optimize workforce readiness.

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Sunday, 08:00 AM - 09:30 AM, Spruce
Track: Purchasing and Supply Management
Session: Socially and Environmentally Responsible Sourcing
Chair(s): Robin Von Haartman

043-0786 Combining Operations and Ethics - Conceptual Considerations on Exploiting Suppliers

Martin C. Schleper, Student, European Business School, Germany
David Wuttke, Student, European Business School, Germany
Constantin Blome, Assistant Professor, Universitã© Catholique De Louvain, Belgium

Public attention is increasingly attached to corporations using their superior power as buyers to gain unfair benefits from their suppliers. In this study we investigate antecedents - power imbalance and ethical climate - of supplier exploitation and develop a conceptual framework to understand the impact of supplier exploitation on operations.

043-0607 Global Sourcing: Vile or Virtue?

Robin Von Haartman, Associate Professor, University of Gävle, Sweden
Lars Bengtsson, Professor, University of Gävle, Sweden

Firms doing global sourcing has been accused of committing, supporting or just turning a blind eye towards a number environmental and social problems. Based on an international survey of 680 firms' purchasing departments, this paper provides empirical evidence on global sourcing's actual contribution to social and environmental sustainability.

043-1378 Motivating Suppliers' Environmental Performance via Pollution Abatement Investments

Qinqin Zhang, Student, Stanford University, United States
Warren Hausman, Professor, Stanford University, United States

We study the impact of a buyer's demand allocation mechanism on her suppliers' pollution abatement investment decisions and their corresponding environmental performance when the suppliers have heterogeneous abatement investment opportunities. We obtain Nash equilibria demonstrating a first-mover advantage regarding such investment abatement decisions.

043-1027 How much supplier squeezing is too much?

David Wuttke, Student, Ebs Business School, Germany
Constantin Blome, Assistant Professor, Universitã© Catholique De Louvain, Belgium
Philippe Chevalier, Professor, Universitã© Catholique De Louvain, Belgium

Powerful buyers face a fundamental trade-off in negotiations: using too little power leads to lost savings, using too much power leads to supplier default costs. In our model we identify the optimal use of power and account for decisions of further powerful buyers. We also study suppliers' potential squeezing-avoidance strategies.

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Sunday, 08:00 AM - 09:30 AM, Nat Hill
Track: Supply Chain Contracting
Session: Forecasting Capabilities and Suppy Risk
Chair(s): Thunyarat (Bam) Amornpetchkul

043-0253 Mechanisms to Induce Buyer Forecasting: Do Suppliers Always Benefit from Better Forecasting?

Thunyarat Amornpetchkul, Student, University of Michigan Ann Arbor, United States
Izak Duenyas, Professor, University of Michigan Ann Arbor, United States
Ozge Sahin, Assistant Professor, Johns Hopkins University, United States

We consider a supplier's contract offerings to a buyer who may obtain more accurate demand forecasts closer to the selling season. We investigate optimal contract types both when the supplier is certain and uncertain of the buyer's forecasting capability. We propose new mechanisms which perform better than conventional contract types.

043-0593 Incentive Alignment and Coordination of Project Supply Chains

Shi Chen, Student, Management Science and Engineering Department, United States
Hau Lee, Professor, The Graduate School of Business, United States

This study focuses on coordinating the supplier delivery schedules in supply chains for customized capital projects, such as what one would find in the construction or aerospace industries. The study suggests that one should focus more on accurate estimate of the variability than the average of the supply lead times.

043-0265 Impact of Reseller's and Sales Agent's Forecasting Accuracy in a Multi-layer supply chain

Ling-Chieh Kung, Assistant Professor, National Taiwan University, Taiwan, Republic of China
Ying-Ju Chen, Assistant Professor, UC Berkeley, United States

We consider a three-layer supply chain with a manufacturer, a reseller, and a sales agent. Under this framework with two levels of adverse selection intertwined with moral hazard, we study the impact of the reseller's and the sales agent's forecasting accuracy.

043-1340 Supply Diagnostic Incentives in New Product Development

Mohammad Nikoofal, Student, Mcgill University, Canada
Mehmet Gumus, Assistant Professor, Mcgill University, Canada

In launching new products, the newness of the production leads to unexpected reliability issues on supply side. The adverse effect of supply risk can be mitigated via pilot production. We explore how such a diagnostic technology investment may affect both incentive and information asymmetries across channel partners.

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Sunday, 08:00 AM - 09:30 AM, Pomeroy *Track:* Healthcare Operations Management
Session: Healthcare Facility Location and Design
Chair(s): Debra Thompson

043-1223 A GIS-based model for hospital location planning in Singapore

Kok Choon TAN, Associate Professor, National University of Singapore, Singapore

We describe a hospital location analysis model, comprising an integrated database and decision support system, which was developed using a GIS platform. We show that the model can be used to evaluate hospital performance measures such as bed occupancy rates at the specialty level and at an aggregated hospital level.

043-1294 Optimal Decentralization of Early Infant Diagnosis of HIV in Resource-Limited Settings

Milind Sohoni, Associate Professor, Indian School of Business, India
Sarang Deo, Assistant Professor, Indian School of Business, India

Several point-of-care devices are being developed to improve access in resource-constrained healthcare networks for early detection of infant HIV. We show that the decision of which facilities should receive these devices (the placement plan) is critical to maximizing their public health impact in the presence of tight budget constraints.

043-1603 How Many handicapped parking Spaces Should there be?

Lawrence Robinson, Professor, Cornell University, United States
Naser Nikandish, Student, Cornell University, United States
Andrea Muchinsky, Consultant, Arizona State University Phoenix, United States

We determine the number of handicapped parking spaces that minimizes the weighted average of distance walked by handicapped and non-handicapped drivers. Using Monte Carlo Simulation, we evaluate the effect of the number of handicapped parking spaces on the average travelled distance by the handicapped and non-handicapped drivers.

043-0575 Meaningful Facility Redesign: A Lean Approach to Enhance Care Delivery

Debra Thompson, Assistant Professor, University of Pittsburg, United States
Margaret Falbo, Assistant Professor, Carnegie Mellon University, United States

Facility redesign is increasing in healthcare to address aging facilities and changing patient expectations. Lean provides an effective mechanism to add value while reducing waste. We will discuss a model for facility redesign while improving current services. Examples include a master facilities plan and an immigration healthcare processing center.

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Sunday, 09:45 AM - 11:15 AM, Salon A
Track: Behavioral Issues in Operations Management
Session: Teamwork and Organizational Learning
Chair(s): Wout Van Wezel

043-0294 The role of consultants in organizational learning

Qing Hu, Student, Cardiff University, United Kingdom
Pauline Found, Retired, Cardiff University, United Kingdom
Sharon Williams, Lecturer, Cardiff University, United Kingdom
Robert Mason, Senior Lecturer, Cardiff University, United Kingdom

This paper aims to find out how the consultants' roles affect organizational learning processes (i.e. 4I model) and activities. Through the case study of a Chinese SME which implemented a consultancy-led lean project, it is found that the importance and content of each process can be largely affected.

043-1262 The lingering effects of Collective Psychological Ownership on Team Work

Wout Van Wezel, Assistant Professor, University of Groningen, Netherlands
Elliot Bendoly, Professor, Emory University, United States
Michael Sacks, Associate Professor, Emory University, United States

Psychological Ownership explains the relationship between feelings of possession and behavior. Both individual and collective psychological ownership have been researched, but not the interaction and dynamics between those two levels. Therefore, we experimentally investigate the effect of collective psychological ownership on individual organizational citizenship behavior in a scheduling context.

043-1327 Operational strategies and repetitive work

Joao Camarotto, Professor, Universidade Federal de São Carlos, Brazil
Juliana Goncalves, Student, Federal University fo Sao Carlos-UFSCar, Brazil

The study examined the welder's perception in the plated jewelry plant in Brazil that the physical demands prevail in work activities, but they acted on the organization, a collective work and flexibility to change operating mode, adjusting their work.

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Sunday, 09:45 AM - 11:15 AM, Salon B
Track: Healthcare Operations Management
Session: Medical Treatment Planning
Chair(s): John Birge

043-1646 The Engine of Health Information Exchange

Neera Bhansali, Lecturer, Florida International University, United States
Sushil Gupta, Professor, Florida International University, United States

We discuss barriers to implementation of Health Information Exchange (HIE). The focus is on operational aspects of HIE to improve the process of sharing electronic health-related information among various organizations. Various topics include: strategy development, project management, architecture and infrastructure management.

043-1299 Optimal Resource Allocation for Multi-Level Preventive Care: Fighting Type 2 Diabetes

Karca Aral, Student, INSEAD, France
Stephen Chick, Professor, INSEAD, France

We propose a mathematical model for T2 Diabetes that comprehends the interactions of multiple interventions including screening, primary, secondary, and tertiary prevention. We use the model to design an optimal preventive care policy. We compare the model outcomes with real-life recommendations, and provide insights on multi-level chronic disease prevention.

043-0410 Regional variation in medication usage and patient outcomes: Evidence from the U.S. Dep't of Veteran Affairs

Vishal Ahuja, Student, University of Chicago, United States
John Birge, Professor, University of Chicago, United States
Elbert Huang, Associate Professor, University of Chicago, United States
Min-Woong Sohn, Assistant Professor, Northwestern University, United States

Using data from the Veterans Health Administration, we analyze dynamic patterns of anti-diabetic therapies and observed patient outcomes. We document observed variation and identify factors that affect individual and organizational learning. The paper uses econometric methods to address confounding measures such as physician bias and other unobservable patient characteristics.

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Sunday, 09:45 AM - 11:15 AM, Salon C
Track: Sustainable Operations
Session: Closing the loop: Barriers and opportunities
Chair(s): Hamid Faramarzi

043-0472 Role of Consumers in Closed Loop Supply Chain: A Literature Review

Siddhartha Kushwaha, Student, IFHE University, India
Gensheng Liu, Associate Professor, University of Memphis, United States
Surajit Ghoshdastidar, Assistant Professor, IMT , India

The paper is an effort to explore recent closed loop supply chain (CLSC) research, to classify the available CLSC literature into broad themes, and to help understanding existing CLSC practices and theories. The literature review steers us to research avenues of significance with consumers at its core.

043-0235 Sustainable Operations in Reverse Supply Chain of Shipbuilding Business

Joshin John, Student, Indian Institute of Management Lucknow, India
Sushil Kumar, Professor, Indian Institute of Management Lucknow, India
Kashi Singh, Professor, Indian Institute of Management Lucknow, India
Rajiv Srivastava, Professor, Indian Institute of Management Lucknow, India

Sustainable operations have become vital for survival of present day shipbuilding business wherein triple bottom-line criteria needs to be satisfied. This paper discusses about recapturing value at the end-of-life of a ship and reintroducing it to the value chain through reverse supply chain channel, therby also benefitting humans and ecology.

043-1612 The Impact of Demand Uncertainty and Vertical Differentiation on the Optimal Reverse Channel Choice

Hamid Faramarzi, Assistant Professor, Wilfrid Laurier University, Canada
Ignacio Castillo, Professor, Wilfrid Laurier University, Canada

We consider centralized and decentralized core collection structures for a firm that produces both new and remanufactured products. We aim to jointly determine the optimal prices and lot sizes. We also investigate the impact of the competition between products, the quality of returns and demand uncertainties on the optimal solutions.

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Sunday, 09:45 AM - 11:15 AM, Salon D — *Track:* Sustainable Operations
Session: Sustainability in industrial operations and processes
Chair(s): Rosane Aparecida Battistelle

043-0228 Environmentally Conscious Operations Management in Indian Fertilizer Industry

Rajiv Srivastava, Professor, Indian Institute of Management Lucknow, India

In this work we explore the adoption of Environmentally Conscious Operations Management practices by the Indian Fertilizer industry. The methodology adopted includes first-hand observations and interactions with industry officials, supplemented by study of published materials. We identify some initiatives common across multiple firms, as well as some context-specific actions.

043-0244 Strategic Implications of Water usage: An analysis of industries in the mineral companies

Clandia Gomes, Professor, Santa Maria Federal University, Brazil
Isak Kruglianskas, Professor, University of Sã£O Paulo, Brazil
Roberto Bichueti, Student, Santa Maria Federal University, Brazil
Jordana Kneipp, Student, Santa Maria Federal University, Brazil
João Fernando Zamberlan, Student, Santa Maria Federal University, Brazil

This study aims to identify the practices of water use management and business performance, in economic, social and environmental terms in industries in the mineral sector. To this end, a descriptive and quantitative study was developed, using the survey method, in industries associated with the Brazilian Mining Institute.

043-0476 Operation of Composting Process of Sewage Sludge Through The Respirometer with Hermetic Rotary Reactor

Edvaldo José Scoton, Student, Unesp Universidade Estadual Paulista, Brazil
Rosane Aparecida Battistelle, Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Adilson Renofio, Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Jorge Akutsu, Assistant Professor, Universidade Federal de Sao Carlos, Brazil
João Eduardo Perea Martins, Assistant Professor, Unesp Universidade Estadual Paulista, Brazil
Juliana Egea, Student, Unesp Universidade Estadual Paulista, Brazil
Gilberto Castilho Filho, Student, Unesp Universidade Estadual Paulista, Brazil

Our study evaluates the operation of the sewage sludge composting process measured in the gas phase, using of an automated respirometer with hermetic rotary reactor, determining the temporal evolution of O2 consumption and CO2 production during the process, obtaining data lines 1440/day, with the advantage of greater representativeness accuracy.

043-1124 Aplication of reverse manufacturing in Brazil with electronic equipment

Juliana Egea, Student, Unesp Universidade Estadual Paulista, Brazil
Vagner Cavenaghi, Emeritus Professor, Unesp Universidade Estadual Paulista, Brazil
Rosane Aparecida Battistelle, Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Edvaldo José Scoton, Student, Unesp Universidade Estadual Paulista, Brazil
Allanna Dos Santos, Student, Sao Paulo State University - UNESP , Brazil

Seeks to analyze the demand for reverse manufacturing in Brazil, considering economy, technology and higher production capacity of electronics. The study came after checking high global rate of production of electronic waste, leading to a review of the literature and cases; evaluating positive actions implemented and propose best sustainable.

043-1348 Use of Waste Plastic and Wood Flour in the Production of Composite

Rosane Aparecida Battistelle, Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Natalia Viola, Student, Sao Paulo State University - UNESP , Brazil
Ivaldo Valarelli, Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Susan Casarin, Student, Universidade Federal De Sã£O Carlos, Brazil

This study aimed to the production and analysis of composite polypropylene recycled and pine wood flour. Test results and application of the composite attested to the possibility of using recycled materials in the production of objects of wood-plastic composites without the use of ligands additives.

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Sunday, 09:45 AM - 11:15 AM, Salon G — *Track:* Supply Chain Management
Session: Procurement and Negotiation in Supply Chains
Chair(s): Lauren Xiaoyuan Lu Guoming Lai

043-0167 Dynamic Bargaining in a Supply Chain with Asymmetric Demand Information

Qi Feng, Associate Professor, Purdue University, United States
Guoming Lai, Assistant Professor, University of Texas Austin, United States
Lauren Xiaoyuan Lu, Assistant Professor, University of North Carolina Chapel Hill, United States

We study supply contracting with dynamic bargaining under asymmetric information, where the buyer knows the demand state, while the seller knows only the prior. We characterize a unique equilibrium and discuss the managerial implications. We also apply our model to study the effect of demand forecasting accuracy on firm profitability.

043-0262 Supply Chain Contracting under Competition: Bilateral Bargaining vs. Stackelberg

Qi Feng, Associate Professor, Purdue University, United States
Guoming Lai, Assistant Professor, University of Texas Austin, United States
Lauren Xiaoyuan Lu, Assistant Professor, University of North Carolina Chapel Hill, United States

We analyze contracting behaviors in a two-tier supply chain system consisting of competing manufacturers and competing retailers. We contrast the contracting outcome of a Stackelberg game with that of a bargaining game.

043-1447 Procurement Contracting under Product Recall Risk

Gang Wang, Student, University of North Carolina Chapel Hill, United States
Lauren Xiaoyuan Lu, Assistant Professor, University of North Carolina Chapel Hill, United States
Jayashankar Swaminathan, Professor, University of North Carolina Chapel Hill, United States

We examine a procurement contracting setting where a manufacturer and a supplier share product recall cost. We characterize the optimal contract that the manufacture should offer and the optimal quality and capacity decisions that the supplier would take under the contract.

292 Sunday, 09:45 AM - 11:15 AM, Salon H — *Track:* Supply Chain Management
Session: Supply Chain Networks and Innovation
Chair(s): Melissa Robles

043-1564 Innovation and Business Development in Logistics Sector in Panama

Zoila Castillo, Professor, Universidad Tecnologica de Panama, Panama
Melissa Robles, Student, University of Duisburg-Essen, Germany

The development of products, especially high technology ones, has relatively not been an important activity on Latin America. The paper will contribute to the body of knowledge in service innovation on the sector of Supply Chain Management. Given that little knowledge is published about experiences in Latin America.

043-0184 Supply Chain Innovation: A Dynamic Capability Perspective

Santanu Mandal, Student, Oklahoma State University, United States
Surojit Ghosh Dastidar, Associate Professor, IMT, Hyderabad, India
Sourabh Bhattacharya, Associate Professor, IMT, Hyderabad, India

New products and processes along with improvement in existing ones are the key features of an innovative supply chain.Using theoretical lenses of RBV and dynamic capabilities, the study formulates a conceptual framework for antecedents and consequences of supply chain innovation from a firm perspective.

043-1416 Distributed manufacturing system in a multi-agent approach

Francisco Freires, Associate Professor, Universidade Federal da Bahia, Brazil
Ana Tanajura, Engineer, SENAI - CIMATEC, Brazil

Multi-agent systems have been successfully used to represent distributed manufacturing systems. A model to manage distributed manufacturing is proposed and applied to on-shore oil fields. The distributed characteristics of oil field units - such as wells, collecting stations, compressing stations, supplies - suggest that they should cooperate to reach production.

043-0186 A Network Wide Transaction Cost Theory Approach in Subcontracting Industry

Outi Kettunen, Research Scientist, Vtt Technical Research Centre of Finland, Finland

The paper presents a model to estimate transaction costs in a network of subcontractors and their customers, and their level of TC. The research questions are 1) what factors have a significant effect on TC in a network and 2) can the TC be divided into positive and negative costs.

293 Sunday, 09:45 AM - 11:15 AM, Salon I — *Track:* Humanitarian Operations and Crisis Management
Session: Mitigation and prevention
Chair(s): Willard Price

043-0386 Performance Measurement in Humanitarian Relief Chains: A Combined Fuzzy DEMATEL and Fuzzy ANP

Ali Torabi, Associate Professor, University of Tehran, Iran (Islamic Republic of)
Mohsen Aghabeglou, Student, University of Tehran, Iran (Islamic Republic of)
Amirhossein Meisami, Student, Texas A&M University College Station, United States

Given a competition among humanitarian organizations, this paper proposes a systematic framework for measuring humanitarian relief chain's performance. After categorizing some performance indicators, a hybrid method combining fuzzy DEMATEL and fuzzy ANP is developed. An illustrative example is also provided to show how the framework can be implemented in practice.

043-1593 POM Meta Modeling for Humanitarian Operations and Disaster Management

Martin Starr, Emeritus Professor, Rollins College, United States
Sushil Gupta, Professor, Florida International University, United States

Hurricane and earthquake preparations are inadequate because of misconceptions about what can be done before a disaster to prepare for it and actions after a disaster to mitigate its severity. Meta modeling may be useful across the boards but it is absolutely essential for POM to deal with humanitarian disasters.

043-1461 A Theory of Prevention v. Response: Application to Fukushima-Daiichi Event

Willard Price, Professor, University of Pacific, United States

This case is based on a theory of Prevention v. Response facing potential natural and/or human caused disasters. A model of inquiry is used to examine failure to prevent disastrous consequences. Academic case studies using the model seek to understand whether prevention strategies were neglected, illogical, irrational or inadequate.

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Sunday, 09:45 AM - 11:15 AM, Salon J
Track: Humanitarian Operations and Crisis Management
Session: Disaster Preparation
Chair(s): Miguel Jaller

043-1429 A Decision-Theoretic Model for Hurricane Inventory Planning

Douglas Morrice, Professor, University of Texas Austin, United States
Fehmi Tanrisever, Assistant Professor, Eindhoven University of Technology, Netherlands
John Butler, Lecturer, University of Texas Austin, United States
Paul Cronin, Student, University of Texas Austin, United States

As a hurricane nears the coast, consumers stock up. Inventory allocation is challenging for retailers in the region. We use an econometric model to estimate demand using actual purchase data and NOAA data from 2003-2008. A stochastic inventory model is used to investigate the timing and level of inventory allocation.

043-0362 Locating points of distribution in large urban disasters

Miguel Jaller, Student, Rensselaer Polytechnic Institute, United States
Jose Holguin-Veras, Professor, Rensselaer Polytechnic Institute, United States

This paper proposes an approximate mathematical formulation as a planning tool to estimate the number of points of distribution (PODs), their capacities, and the frequency of distribution strategy required for large urban disasters. The POD configuration is obtained as the one that minimizes the total social costs.

043-0565 Hurricane Sandy and the New York Subway System: An Example of Quantifying Resilience

Josey Chacko, Student, Virginia Polytechnic Institute And State University, United States
Roberta Russell, Professor, Virginia Polytechnic Institute And State University, United States
Loren Rees, Professor, Virginia Polytechnic Institute And State University, United States
Christopher Zobel, Associate Professor, Virginia Polytechnic Institute And State University, United States

Disaster management decisions based on traditional probabilities of occurrence can be misleading. We use published data to build a model for evaluating options in recovery and resilience of the NYC subway system in response to Hurricane Sandy, and in the process, illustrate how to quantify resilience and make informed decisions.

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Sunday, 09:45 AM - 11:15 AM, Suites I
Track: General Track
Session: General Topics _ OM Studies in Brazil
Chair(s): Philip Kazemersky

043-0958 A Small Business: An Operations and Production Application with Student Experience

Philip Kazemersky, Professor, University of Tennessee Chattanooga, United States

The project executed a system view of the production processes, transactional and non-transactional flows, and standardized procedures for specific assembly steps, workstation design, and production line arrangement. Operation modifications are suggested to reduce labor requirements, cycle time, material movements, and reduce the safety concern and improved cost performance.

043-1472 Measuring the productivity growth of U.S. motor carriers using a global Malmquist-Luenberger index

Rodrigo Britto, Assistant Professor, Universidad De Los Andes, Colombia

This study computes a global Malmquist-Luenberger productivity index (GML) index to measure the productivity growth of the motor carrier industry during the years 1999-2003 when undesirable outcomes are included. A Tobit regression with random effects is also used to explain the variation in the efficiency scores of the motor carriers.

043-1219 Services quality in technology supported education: Brazilian case

Daielly Nassif Mantovani, Student, University of Sã£O Paulo, Brazil
Maria Gouvea, Associate Professor, University of Sã£O Paulo, Brazil

This article aims to measure students' perceptions of distance education quality, through a services quality model. For this, students from a distance Public Management undergraduate course in Brazilian universities were interviewed, totalizing a 593 sample. Data showed favorable perceptions of distance education quality and offered further information for strategic decisions.

043-0667 Post-Modern Quality - A Panel Discussion

Daniel Heiser, Associate Professor, Depaul University, United States
Paul Schikora, Professor, Indiana State University, United States
Morgan Swink, Professor, Michigan State University, United States

In Out of Crisis (1982), Deming warned that it is a “hazard to copy”. Naturally, we have come to mimic Motorola’s Six Sigma and Toyota’s lean models as the correct path to quality - with little regard to context. This discussion will challenge prevailing assumptions about how “quality” is taught.

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Sunday, 09:45 AM - 11:15 AM, Suites II
Track: Production Planning and Scheduling
Session: Machine and Equipment Scheduling
Chair(s): J N D Gupta

043-0612 Identical Parallel-Machine Scheduling with Fixed Delivery Dates to Minimize Total Tardiness

Arne Mensendiek, Student, Bielefeld University, Germany
J N D Gupta, Professor, University of Alabama Huntsville, United States
Jan Herrmann, Manager, BrainNet Supply Management Consultants AG, Switzerland

We consider the NP-hard problem of scheduling jobs to minimize total tardiness on identical parallel machines where job deliveries can only take place at certain fixed delivery dates due to the fixed timetable of a logistics service provider. A Branch-and-Bound algorithm and heuristic solution procedures are proposed and empirically evaluated.

043-0681 Parallel Machine Scheduling to Minimize Overtime and Waste Costs

Nickolas Freeman, Student, University of Alabama Tuscaloosa, United States
Sharif Melouk, Assistant Professor, University of Alabama Tuscaloosa, United States
John Mittenthal, Professor, University of Alabama Tuscaloosa, United States

We consider a parallel machine scheduling problem with sequence dependent setups, where processing time and waste depend on machine assignments. We develop an MIP formulation and two heuristic approaches to minimize overtime and waste costs. Experiments show our formulation outperforms more traditional scheduling objectives with respect to the costs considered.

043-0581 A hybrid heuristic algorithm for the no-wait flowshop problem with sequence-dependent setup times

J N D Gupta, Professor, University of Alabama Huntsville, United States
Zhanbin Wu, Student, Southeast University, China
Xia Zhu, Lecturer, Southeast University, China
Xiaoping Li, Professor, Southeast University, China

We consider the NP-hard no-wait flowshop scheduling problem with sequence-dependent setup times to minimize makespan. We propose a hybrid heuristic which combines the iterated greedy process with local search method based block swap operator. Experimental results show that the proposed heuristic algorithm is comparatively more effective than the existing metaheuristics.

043-0582 Hybrid Search Method for Integrated Scheduling Problem of Container-handling Systems

J N D Gupta, Professor, University of Alabama Huntsville, United States
Feifei Cui, Student, Southeast University, China
Xiaoping Li, Professor, Southeast University, China

We investigate the integrated scheduling problem of different types of handling equipment in a container terminal to minimize the total service time of a set of ships. By converting this problem to a hybrid bi-directional flowshop scheduling problem with additional constraints, a hybrid search algorithm is proposed and empirically evaluated.

043-0141 Scheduling a single machine subject to job ready times and sequence dependent setup times

Miguel Rojas-Santiago, Assistant Professor, Universidad del Norte, Colombia
Laura Martinez-Buelvas, Student, Universidad del Norte, Colombia
Mario Velez-Gallego, Associate Professor, Universidad EAFIT, Colombia
Jairo Montoya-Torres, Associate Professor, Universidad de La Sabana, Colombia

In this work a single machine scheduling problem under job ready times and sequence-dependent setup times is considered with the objective of makespan minimization. As the problem is NP-hard, a lagrangean relaxation (LR) heuristic is proposed. Extensive computational experiments showed that the proposed heuristic is effective.

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Sunday, 09:45 AM - 11:15 AM, Suites III — *Track:* Empirical Research in Operations Management

Session: Empirical Research in Retail Operations

Chair(s): Saravanan Kesavan

043-0110 An Empirical Signal Processing Model of the Supply Chain

Robert Bray, Assistant Professor, Kellogg School of Management, United States
Haim Mendelson, Professor, Stanford University, United States

We present a structural econometric framework of supply chain information flows. We analyze supply chain black boxes by measuring how input demand signals transform into output order signals. We use our framework to measure the degree to which sharing information and improving demand forecasts reduces supply chain uncertainty.

043-0293 Linking Process Quality, Hospital Structure and Resource Usage: An Empirical Analysis

Christopher Tang, Professor, University of California Los Angeles, United States
Dimitrios Andritsos, Assistant Professor, Hec Paris, France

Motivated by the process-oriented pay-for-performance (P4P) programs that reward hospitals for adhering to established medical guidelines, we use data from US hospitals on the treatment of heart attack and heart failure to examine whether P4P programs are likely to drive changes to a hospital's resource usage.

043-0230 Do high and low inventory turnover retailers respond differently to demand shocks?

Saravanan Kesavan, Assistant Professor, University of North Carolina Chapel Hill, United States
Tarun Kushwaha, Assistant Professor, University of North Carolina Chapel Hill, United States
Vishal Gaur, Associate Professor, Cornell University, United States

In this paper, we examine how high and low inventory turnover retailers use price and quantity response as mediating mechanisms to respond to demand shocks. We structurally estimate the lead time of these retailers and then test if their behavior is consistent with theoretical predictions.

043-1602 What Goes Wrong in The Supply Chain that Make a Product Expire on The Retail Shelf?

Arzum Akkas, Student, Massachusetts Institute of Technology, United States
David Simchi-Levi, Professor, Massachusetts Institute of Technology, United States

This study examines the root causes of product expiration at retail stores in the consumer packaged goods industry. We use binomial regression under generalized estimating equation framework for our analysis where we predict the volume of product returns from retail stores that are results of expiration.

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Sunday, 09:45 AM - 11:15 AM, Suites IV — *Track:* General Track

Session: Practice Leaders Forum: Supply Chain Management

Chair(s): Christopher Tang

043-1685 Managing Supply Chain Risk at Dell

Ashlie Wallace, Director, Dell, United States

Continuity of supply (COS) is a top priority for Dell. COS issues create a challenging environment that drive long cycle time, which impacts customer experience and ultimately profitability. Dell Procurement has implemented an analytical approach to assess risk throughout the entire supply chain with the ultimate goal of driving

043-1686 Supply Chain Planning in the Semiconductor: Facing the Complex Challenge

Alex Brown, VP, Supply Chain, xilinx, United States

This talk will review basic supply chain planning in the semiconductor industry, from forecasting through production planning & scheduling. The talk will focus on the challenges brought on by innovation in the product & process that is driving dramatically increased planning complexity.

043-1687 Building SCM Capability at a 110 Year Old Packaging Company

Keith Holliday, Director Corp. Supply Chain and Operating Excellence, Sonoco, United States

Sonoco has reliably met customer needs, often through heroic intervention. I will share the journey toward supply chain excellence which has been building the processes, systems, and people capability to reduce the need for heroic intervention while delivering perfect order/ inventory performance in the top quartile of the packaging industry.

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Sunday, 09:45 AM - 11:15 AM, Suites V *Track:* Empirical Research in Operations Management

Session: Empirical Research on Outsourcing and Offshoring

Chair(s): John Gray

043-0342 Managing quality in a heterogeneous contract manufacturing environment

Sean Handley, Assistant Professor, University of Notre Dame, United States
John Gray, Assistant Professor, Ohio State University, United States

Numerous examples of quality issues originating with contract manufacturers have been covered in the popular press. These issues have been insufficiently studied in the quality literature. We examine the quality implications of outsourcing production into a heterogeneous manufacturing environment and the practices customer organizations can employ to address these implications.

043-0428 Current factors affecting the manufacturing location decision

Lisa Ellram, Professor, Miami University, United States
Wendy Tate, Associate Professor, University of Tennessee Knoxville, United States

The media is full of anecdotes about companies' moving their manufacturing back to the U.S. This section reports the results of a survey that explored the factors that have the greatest influence on reshoring to the U.S., as well as factors perceived as most influential in the manufacturing location decision.

043-0679 A Study of the Impact of an Open Standard on a Software Procurement Ecosystem

Sandra Slaughter, Professor, Georgia Institute of Technology, United States
Mike Frutiger, Professor, Georgia Institute of Technology, United States
Sridhar Narasimhan, Professor, Georgia Institute of Technology, United States

Costs of avionics software in the U.S. defense industry rise while defense spending faces increased budget pressure. Current procurement involves custom development by proprietary vendors, with long lead times and platform-specific architecture. This study investigates impacts of an open standard supporting portability and reuse of software components across avionics suppliers.

043-1210 A Multi-theory Approach for Understanding the BPO Decision

Martina Gerbl, Student, University of Ulster, United Kingdom
Ronan McIvor, Professor, University of Ulster, United Kingdom

This paper proposes a prescriptive business process outsourcing (BPO) framework, which was developed from integrating variables from transaction cost economics, the resource-based view, and location theory, and undertaking in-depth case study analysis of a number of companies that have been involved in extensive BPO.

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Sunday, 09:45 AM - 11:15 AM, Suites VI *Track:* Product Innovation and Technology Management

Session: Incentives, Contracts, and New Product Development Projects

Chair(s): Jeremy Kovach

043-0075 Licensing Contracts: Control Rights and Options

Pascale Crama, Assistant Professor, Singapore Management University, Singapore
Bert De Reyck, Professor, University College London, United Kingdom
Niyazi Taneri, Assistant Professor, Singapore University of Technology and Design, Singapore

In many high tech industries, R&D collaborations have become common. R&D collaborations are challenging to manage because of their high uncertainty. We investigate how contract terms affect the R&D collaboration. We jointly optimize the payment terms with control rights or options, to offer correct incentives to the innovator and marketer.

043-0526 Who Kills Electricity Car? - A social-political perspective of project abandonment

Zhijian Cui, Assistant Professor, Instituto De Empresa, Spain

Abandoning a promising project is a cost of social warefare and it is a consequence all involved parties do not prefer. This research gives two social-political explanations of the reasons driving project abandonment: technology uncertainty and the incentive to represent information as well as the lack of trust among stakeholders.

043-0646 Broadband Internet Adoption Challenge: An Investigation of Broadband Utilization in the United States

Kayvan Lavassani, Assistant Professor, North Carolina Central University, United States
Bahar Movahedi, Student, Carleton University, Canada

There seems to be a consensus about the role of broadband internet in gaining competitive advantage. Few studies have explored broadband adoption and the potential utilization benchmarks. Based on the Internet utilization data in a number of states across the US, adoption models are developed using exploratory factor analysis.

043-0047 Project Scope and Incentives in New Product Development

Jeremy Kovach, Student, Georgia Institute of Technology, United States
Stylianos Kavadias, Associate Professor, Georgia Institute of Technology, United States

We investigate the incentives required to induce effort from multiple functional stakeholders who strategically interact to create product value. In managing these strategic interactions, we find conditions where a broad project scope may require lower powered incentives than a narrow project scope to facilitate stakeholder commitment.

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Sunday, 09:45 AM - 11:15 AM, Silverton *Track:* Learning and Knowledge Management in OM
Session: Learning and Experience
Chair(s): Michael Lapré

043-0090 Vendor Quality Performance and the Role of Learning and Forgetting – An empirical investigation

Anupam Agrawal, Assistant Professor, University of Illinois Urbana-Champaign, United States
Suresh Muthulingam, Assistant Professor, Cornell University, United States

Quality knowledge at vendors is a critical source of competitive advantage for manufacturing firms. This research examines how learning facilitates development of quality knowledge at supply chain partners and whether forgetting leads to the depreciation of such knowledge. We highlight which type of improvement efforts lead to sustained quality improvement.

043-0473 The Impact of Learning-Curve Heterogeneity, Team Familiarity, and Workload on Orthopedic Procedure Times

Michael Lapré, Associate Professor, Vanderbilt University, United States
David Moore, Fellow, Stanford School of Medicine, United States

We study orthopedic procedure times. We find (1) learning-curve heterogeneity exists for both individual and team experience; (2) learning from team experience depends on familiarity between team members who have to closely coordinate tasks; (3) when we allow for learning-curve heterogeneity for individuals and teams, organizational experiences is not significant.

043-0483 A longitudinal analysis of operating profitability in the U.S. airline industry, 1988-2011

Michael Lapré, Associate Professor, Vanderbilt University, United States
Gary Scudder, Professor, Vanderbilt University, United States

In a longitudinal analysis of profitability (operating profit over operating revenue) in the U.S. airline industry, we examine drivers such as loadfactor, fleet utilization, fuel cost, flight length, plane size, on-time performance, and complaints. We contrast legacy carriers with focused carriers. We also contrast operating models before and after 9/11.

043-0541 Types of Team Leader Experience: Disentangling the Effects on Quality Improvement Project Success

George Easton, Associate Professor, Emory University, United States
Eve Rosenzweig, Associate Professor, Emory University, United States

Prior research suggests that team leader experience is an important predictor of quality improvement project team success. Using six years of archival data from a Fortune 500 consumer products manufacturer with multiple business groups, we disentangle various aspects of team leader experience and their relationship to six sigma project success.

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Sunday, 09:45 AM - 11:15 AM, Matchless *Track:* Inventory Management
Session: Inventory Costs and Objectives
Chair(s): Peter Berling Samuel Conceicao

043-0011 Heuristic to allocate intermediate buffer storage capacities in a production line subject to machine breakdown

Mario Velez-Gallego, Associate Professor, Universidad Eafit, Colombia
Jhull Jaramillo, Student, Universidad Eafit, Colombia

In this research proposal we consider a production line subject to random failures at each workstation. Every time a workstation fails, a corrective maintenance activity is triggered. To palliate the effect of the random failures in the performance of the system, intermediate buffers are placed in-between workstations.

043-1051 Differentiation of service-levels optimal solution and ABC-classification

Peter Berling, Senior Lecturer, Linnaeus University, Sweden

A total target service level can be obtained with less inventory by differentiating the service level between products. Focus so far has typically been on cycle service rather than fill-rate constraints and this paper thus complements earlier research. Optimal method for differentiating products and a scheme for ABC-classification are presented.

043-1529 Contrasting Inventory Stratification Strategies - A Total Cost Comparison

Anudeep Kuppampati, Student, Texas A&M University College Station, United States
William Sawaya, Assistant Professor, Bowling Green State University, United States
S. Jayanty, Logistics Planning Analyst, Anheuser-Busch, United States

The right inventory stratification strategy can produce dramatic cost savings in most distribution settings. There are a variety of strategies for both producing inventory stratification and using the results in reorder policies. This research compares a variety of strategies using empirical demand data and compares their cost and service performance.

043-0475 The order Penetration Point in the Steel Industry: a Hybrid Optimization-Simulation Approach.

Samuel Conceicao, Professor, Univ Federal Do Minas Gerais, Brazil
Eguinaldo Souza, , ArcelorMittal, Brazil
Eliane Wolff, Dr., WW Consultoria Ambiental, Brazil

Based on the concept of order penetration point we propose three different manufacturing approaches to optimize semi-finished inventories in a large steel industry in Brazil. We´ve developed a hybrid optimization-simulation model to evaluate the system´s performance. The results shows that we can achieve shorter lead times and production efficiency.

303 Sunday, 09:45 AM - 11:15 AM, Gold Coin *Track:* Supply Chain Risk Management
Session: Supply Risk Mitigation Strategies
Chair(s): Mark Goh

043-0494 Managing and Mitigating Shippers' Dyadic Risk under INCOTERMS: Navigating Rough Waters

Drew Stapleton, Professor, University of Wisconsin, United States
Uzay Damali, Assistant Professor, University of Victoria, Canada

Recent changes to INCOTERMS are reviewed. Graphical illustrations are utilized to identify critical points of risk and cost curves' dyadic transfer. Impact to shippers' supply chains and risk mitigation and management strategies are illustrated. Gaps in theory and practice are identified and potential theoretical underpinnings are proffered for future research.

043-1343 How To (and How Not To) Manage a Supplier's Process Improvement: Incentives or Audit

Mohammad Nikoofal, Student, Mcgill University, Canada
Mehmet Gumus, Assistant Professor, Mcgill University, Canada

Besides the benefits of outsourcing, firms are concerned about the lack of information regarding their suppliers. Moreover, suppliers may take certain actions that affect their supply risks without informing their buyers. We study the effectiveness of incentive- and audit-based contracts in dealing with such suppliers.

043-1600 Supply chain risk management in the mango exportation chain

Josue Ferreira Neto, Student, Fundacao Getulio Vargas, Brazil
Susana Pereira, Professor, Fundacao Getulio Vargas, Brazil

The study presents an analysis of the main risks associated with the mango exportation chain between Brazil and USA. Interviews were carried out with specialists from this chain. Main results indicate despite production technology and favorable climate conditions, product´s characteristics and management issues pose serious threats to this chain competitiveness.

043-1221 Modeling the propagation of delay risks in a supply chain

Rong Zhou, Reader, National University of Singapore, Singapore
Mark Goh, Associate Professor, National University of Singapore, Singapore
Robert de Souza, Professor, National University of Singapore, Singapore

We model the propagation of the supply delay risk in a supply chain to determine the delay occurring time and duration in the subsequent node. The analysis of several scenarios demonstrates that inventory levels, lead times, and risk duration are key factors determining the behavior of risk propagation.

305 Sunday, 09:45 AM - 11:15 AM, Molly Brown *Track:* Work Force Planning
Session: New Advances in Workforce Planning 1
Chair(s): Subhamoy Ganguly

043-1147 Solution methods for non-linear workforce planning models with learning

Mike Hewitt, Assistant Professor, Rochester Institute of Technology, United States
Barrett Thomas, Associate Professor, University of Iowa, United States
Scott Grasman, Professor, Rochester Institute of Technology, United States

The academic literature suggests that quantitative, descriptive models of human learning are non-linear. As a result, prescriptive planning models that manage workforce development through task assignment are difficult to solve. We present solution methods that are significantly faster than existing methods and managerial insights derived from realistically-sized instances.

043-0668 On-Call Workforce: How many are needed and when to call

Subhamoy Ganguly, Student, University of Colorado Boulder, United States
Stephen Lawrence, Associate Professor, University of Colorado Boulder, United States

Businesses with stochastic demand often have on-call employees who can be summoned at short notice to fulfill unforeseen surge in demand. Using a newsvendor model, we derive the appropriate mix of regularly scheduled and on-call employees, and determine the threshold for summoning an on-call employee.

043-1361 Sales Force Deployment and Territory Partitioning with Multiple Objectives

Elias Olivares Benítez, Professor, UPAEP University, Mexico
Sonia Garcia Bañuelos, Student, UPAEP University, Mexico
María Beatriz Bernabe Loranca, Professor, BUAP, Mexico
Jose Humberto Ablanedo Rosas, Assistant Professor, UTEP, United States
José Luis Martínez Flores, Professor, Universidad Popular Autonoma del Estado de Puebla, Mexico

This research arises from a project for a Mexican company with near 3800 customers grouped in zones and assigned to salesmen. A new partitioning is required in each zone affecting the sales force deployment. The problem is addressed as an optimization problem with geographic, workload, and sales turnover objectives.

306 Sunday, 09:45 AM - 11:15 AM, Spruce *Track:* Revenue Management and Pricing
Session: Revenue Management and Pricing - 3
Chair(s): Benny Mantin

043-1197 Customer Segmentation for Customized Pricing

Tudor bodea, Assistant Professor, University of Groningen, Netherlands
Mark Ferguson, Professor, University of South Carolina, United States

We show that the segmentation techniques routinely used for customized pricing are often unable to provide legitimate price responses. To address this shortcoming, we introduce a model-based recursive partitioning algorithm that provides a sound theoretical framework for segmenting customers based on a parametric model that attends to customer price sensitivity.

043-1446 Revenue Management with Ancillary Products

John Wilson, Professor, Ivey School of Business, Canada
Fredrik Odegaard, Assistant Professor, University of Western Ontario, Canada

Revenue from ancillary services such as baggage fees are of great and growing importance to airlines. We provide analytical results and an algorithm to enable the seller to find the optimal inventory and optimal capacity prices of the primary and ancillary items.

043-1280 Why Charge for Bags? Segmentation versus Changing Customer Behavior

Gad Allon, Associate Professor, Northwestern University, United States
Achal Bassamboo, Associate Professor, Northwestern University, United States
Martin Lariviere, Professor, Kellogg School of Management, United States

Why should firms unbundle ancillary services (transporting bags) from primary services (transporting passengers)? Customer segmentation is a frequently cited reason for ancillary service fees, but we show that the resulting fee structures are very different from what one sees in practice. We propose shaping consumer behavior as an alternative explanation.

043-0625 On the Impact of Strategic Consumer Behavior: Evidence from the Airline Industry

Benny Mantin, Assistant Professor, University of Waterloo, Canada
Eran Rubin, Assistant Professor, Holon Institute of Technology, Israel

Online decision support systems that provide consumers with information about future distributions of prices can facilitate strategic consumer behavior. We empirically demonstrate the magnitude effects of strategic consumer behavior in the context of the airline industry. We find that the availability of such information is associated with lower transacted airfares.

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Sunday, 09:45 AM - 11:15 AM, Nat Hill — *Track:* Supply Chain Contracting
Session: Contracting and Supply Chain Competition
Chair(s): Anupam Agrawal

043-1563 Competing Through Cooperatives

Sudheer Gupta, Associate Professor, Simon Fraser University, Canada
Omkar Palsule-Desai, Assistant Professor, IIM Indore, India

We analyze a model where several small producers form a cooperative and delegate decisions to a marketing agent to compete with a dominant producer. The agent offers a contract, secures quantities, sets prices and distributes the product. We show how different contracts affect size of the network and equilibrium outcomes.

043-0004 Quality and Supply Chain Investment

Anupam Agrawal, Assistant Professor, University of Illinois Urbana-Champaign, United States

We explore the conditions under which suppliers, with the same technology, supplying similar components to different buyers, price the components differently. We show that differential pricing under shared sourcing can depend upon (a) the existing quality at the suppliers, (b) accuracy of the buyers' in-house inspection and (c) supplier capability

043-1497 Outsourcing to a high-cost supplier

Jie Gao, Associate Professor, Xi'An Jiaotong University, China
Gangshu Cai, Associate Professor, Santa Clara University, United States
Andy Tsay, Associate Professor, Santa Clara University, United States

In this study, we consider a two-tier supply chain consisting of two competing manufacturers. The conditions under which the manufacturers will outsource to high-cost suppliers are investigated. We also analyze the impact of contractual forms and supply chain structures on the outsourcing decision and the manufacturer's profitability.

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Sunday, 09:45 AM - 11:15 AM, Pomeroy — *Track:* Healthcare Operations Management
Session: Long Term Care and Patient Flow
Chair(s): Ying Fan

043-0402 Streamlining Patient Flow: Models for Emergency Department Patient Destination Prediction

Shanshan Qiu, Student, Wayne State University, United States
Ratna Chinnam, Professor, Wayne State University, United States
ALPER MURAT, Associate Professor, Wayne State University, United States

Binary prediction models are available in the literature to predict the likelihood of patient admission right upon patient arrival to the emergency department (ED). However, they lack the ability to predict the target department for admission to facilitate coordination. We propose effective multi-class classification models for ED patient destination prediction.

043-0080 Impact of external pressure on employees and operational strategic planning

Hui-chuan Chen, , University of Texas Arlington, United States

Most of the long-term care studies are focused on quality improvement and reduced deficiencies. This study provides a different view on how external pressure affects strategic planning in employees learning to benefit operations and supply chain management for long-term care providers. The normative behavior has an important effect on workforce.

043-0911 Patient Navigation Program Effectiveness: Antecedents, Patient Satisfaction and Outcomes

Ying Fan, Assistant Professor, University of Colorado Colorado Springs, United States
Gregory Stock, Professor, University of Colorado Colorado Springs, United States

Patient navigation programs have been developed nationwide to guide cancer patients through the fragmented health care system. We investigate the roles and responsibilities of patient navigators through multiple case studies. We explore rigorous measures for the program effectiveness. Furthermore, we identify critical factors for program success.

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Sunday, 02:45 PM - 04:15 PM, Salon A
Track: Behavioral Issues in Operations Management
Session: Motivation and Rewards at the Workplace
Chair(s): Elmira Marandi

043-0375 Understanding the concept of servant behavior from public employees

Kleber Nobrega, Professor, Universidade Potiguar, Brazil
Cristina Maria Santos, Senior Lecturer, Universidade Potiguar, Brazil
Patricia Whebber, Professor, Universidade Potiguar, Brazil

In Brazil, public employees are known as servers. This paper investigates the comprehension of these professionals about their job, confronting with the attributes defined in servant behavior researches. First results suggest a common sense for responsibility and desire to help, but not much association with initiative, resign and utility.

043-0606 Quality of life management at work: a strategic program for improved operations performance in small business

Hamilton Pozo, Associate Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil
Takeshy Tachizawa, Associate Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil
Roselaine Pozo, Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil

This paper investigates the human resources management practices focused on quality work of life (QWL), in a context of small business operations. The research demonstrated that it is possible to correlate strategic action and QWL programs for personnel well-being to obtain better performance in operations and a competitive advantage.

043-1565 Motivation factors of Blue collar workers verses White collar workers in Herzberg's "Two Factors Theory"

Elmira Marandi, Student, Engineering department, United States
Ehsan Moghaddas, Student, California State University East Bay, United States

Herzberg et al. (1959) developed “Two Factors theory” to focus on working conditions necessary for employees to be motivated. Since Herzberg examined only white collars in his research, this article reviews later studies on motivation factors of blue collar workers verses white collars and suggests some hypothesis for further researches.

314

Sunday, 02:45 PM - 04:15 PM, Salon B
Track: Healthcare Operations Management
Session: Inventory Management in Healthcare
Chair(s): Gilbert Nyaga

043-0132 Demand forecast and inventory management: sizing inventory of blood products in a blood bank at Brazil.

Breno Carmo, Assistant Professor, Universidade Federal Rural do Semi Árido, Brazil
Julia Gurgel, Student, Universidade Federal Rural do Semi Árido, Brazil
Abraao Saraiva Junior, Assistant Professor, Universidade Federal Rural do Semi Árido, Brazil
David Sena, Assistant Professor, Universidade Federal Rural do Semi Árido, Brazil

The management of stocks of products derived from blood is a major problem for healthcare services in Brazil. This study aims to evaluate the demand for these products and establish parameters to control their stocks. This can increase the availability, as it intends to reduce blood shortages and wastages.

043-0464 Hurry Up and Wait: Differential Impacts of Congestion, Bottleneck Pressure, and Predictability

Jillian Berry Jaeker, Student, Harvard University, United States
Anita Tucker, Associate Professor, Harvard University, United States

High load, from high inventory, impacts processing times, but prior OM studies have found conflicting results regarding direction. We quantify the magnitudes and directions of processing time changes due to in-process (congestion) and incoming inventory load, decomposing the latter into bottleneck pressure and predictability, to predict a priori load effects.

043-1476 What drives inventory performance in hospital supply chains?

Gilbert Nyaga, Assistant Professor, Northeastern University, United States
Gary Young, Professor, Northeastern University, United States

Supply chain related expenses account for about 30% of hospital costs. We examined >300 hospitals in California to determine the effect of clinical integration, level of innovation, and financial considerations on hospital’s inventory and supply chain performance. Results show significant variation in inventory cost and performance across different hospitals types.

315

Sunday, 02:45 PM - 04:15 PM, Salon C
Track: Sustainable Operations
Session: Corporate social responsibility
Chair(s): Martin Stößlein

043-0439 An Analysis on Corporate Sustainability Reports in China based on the Sustainability Reporting Guidelines (G3)

ZHIDUAN XU, Professor, Xiamen University, China
DANXIA GUO, Associate Professor, Xiamen University, China

We collected 1195 Corporate Sustainability Reports published voluntarily by 695 domestic enterprises in China. According to the G3 version released by Global Reporting Initiative in 2006, this paper makes assessments on 87 sample reports using content analysis. Some key factors which impact on sustainable development of China enterprises are identified.

043-0655 Risk management and corporate sustainability in the Canadian Oil and Gas Industry

Patrick Wojcik, Student, Mount Royal University, Canada
Kalinga Jagoda, Associate Professor, Mount Royal University, Canada

Under pressures from various stakeholder groups, Canadian oil and gas firms have taken steps to incorporate CSR initiatives in order to reduce financial and social risks. This paper proposes a framework for effectively managing risks associated with oil and gas operations by integrating the concepts of innovation and sustainability.

043-1289 Which Corporate Sustainability Announcements Do Really Matter? State-of-the-Art and Further Exploration

Martin Stößlein, Assistant Professor, Technische Universitat Munchen, Germany

Many companies are excited to announce their commitment to sustainable operations. However, which ones do really matter? Besides a review of sustainability-related event studies, we explored the impact on firm performance with a multi-national longitudinal analysis.

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Sunday, 02:45 PM - 04:15 PM, Salon D — *Track:* Sustainable Operations

Session: Sustainability issues in emerging and rural markets

Chair(s): Muhammad Abdulrahman

043-0042 Water footprint and sustainability analysis in emerging markets: colombian case

Vivian Rangel, Researcher, Center for Latin-American Logistics Innovation (CLI), Colombia
David Hidalgo, Researcher, Center for Latin-American Logistics Innovation (CLI), Colombia

Existing information related to water footprint in emerging markets like Colombia is scarce. This project aims to contextualize to the Colombian case the Water Footprint Network´s methodology. A Colombian company was examined and the parameters of the calculation model for the local context of three industrials centers were defined.

043-0095 Sustainability indicators along the coffee value chain: A comparative study between Mexican & Colombian retail

Camilo Peña, Student, Itesm, Mexico
Omar Salgado, Professor, Itesm, Mexico

There's no consensus on sustainability indicators measuring companies' performance along the value chain, nor measurement of consumers' influence on supply chain's configuration, aiming to improve such indicators. A framework to obtain sustainability indicators along the coffee value chain based on a comparative study between Mexican and Colombian retailers is described.

043-0324 Simultaneous effect of drivers and barriers on the Chinese manufacturers' performance outcome

Muhammad Abdulrahman, Assistant Professor, The University of Nottingham Ningbo, Nottingham University Business School China, China
Nachiappan Subramanian, Associate Professor, The University of Nottingham Ningbo China, Nottingham University Business School, China
Jayanth Jayaram, Professor, University of South Carolina, United States
Keah-Choon Tan, Professor, University of Nevada, United States

The independent effects of the drivers of and barriers to reverse logistics (RL) implementation have reported in developing countries. Using structural equation modelling approach, this study empirically examines the simultaneous impact of established RL drivers and barriers on key performance indicators in a sample of 167 local Chinese manufacturing firms.

043-0305 Sustainable Initiatives In Three Industries in the Context of Anthropogenic Climate Change.

Sergio Ruggiero, Professor, Anhanguera, Brazil
Luis Zulietti, Professor, Anhanguera, Brazil
Joao Zaleski , Professor, Anhanguera, Brazil
Christiano Farias, Professor, Anhanguera, Brazil
Getulio Akabane, Student, Anhanguera/CEETEPS, Brazil

With 51 variables whith five scenarios aims to identify, compare, document and disseminate the best sustainable practices of three leading corporations from: beverage sector, painting sector and food sector in Brazil. It can contribute with a bottom-up approach to the new post-carbon economy, through the fourth industrial clean-up revolution.

043-0900 Environmental Impacts in Rural Areas: Proposal of a Model of Rural Sustainable Production

Rosane Aparecida Battistelle, Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Leite Antonio, Student, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Rosani Castro, Associate Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil

This article has the main objective to propose a model of sustainable rural production, which contributes both to the effectiveness of rural activity with economic gains, but mainly to provide the basis for the mitigation of environmental damage within the context and reality of agriculture in Brazil.

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Sunday, 02:45 PM - 04:15 PM, Salon G — *Track:* Supply Chain Management

Session: Empirical Analysis of Supply Chain

Chair(s): Herbert Kimura

043-1609 Alignment between strategies and capabilities in the supply chain of Brazilian firms

Giovana Gavioli, Student, Universidad Presbiteriana Mackenzie, Brazil
Roberto Moori, Professor, Universidad Presbiteriana Mackenzie, Brazil
Herbert Kimura, Associate Professor, Universidad Presbiteriana Mackenzie, Brazil

The research, based on a questionnaire sent to a sample of Brazilian companies, used structural equation modeling and identified an alignment between strategies and capabilities that are related to the improvement of the cycle and the rate of delivery as well as the reduction of production problems and product returns.

043-1561 The Role of Relational Architecture in Developing Relational Capability: Organizational Levers to Support Stra

Gregory Magnan, Professor, Seattle University, United States
Marc Day, Professor, University of Reading, United Kingdom
Stanley Fawcett, Professor, Weber State University, United States

In this paper we specify and evaluate internal and external elements of relational architecture and empirically test their influence on relational capability and relationship quality. We find significant relationships between both internal and external relational architecture and relational capability and between relational capability and relational quality.

043-0333 The effect of material and information decoupling points on supply chain collaboration

Artur Swierczek, Associate Professor, University of Economics, Poland

The paper seeks to investigate the effect of the location of material and information decoupling points on the nature of supply chain collaboration. The theoretical considerations regarding these two constructs are evidenced by cross-sector findings of the empirical study conducted in supply chains.

043-0124 Sourcing Networks and Joint Venture Formations: A social network approach

Steven Carnovale, Student, Rutgers Business School, United States
Sengun Yeniyurt, Associate Professor, Rutgers Business School, United States

This paper develops a network-theory-based framework of manufacturing-equity-based partnership formations and provides an empirical analysis in the automotive industry. A time-series-panel dataset with 3,249,051 observations containing the joint-venture information of 1,158 automotive firms collectively engaging in 589 manufacturing joint-ventures over 19 years is utilized to test various network-theoretic hypotheses.

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Sunday, 02:45 PM - 04:15 PM, Salon H — *Track:* Operations Management Practice
Session: Practitioner Issues in OSM
Chair(s): Roberta Russell

043-1648 Practitioner Issues in Operations and Supply Chain Management

Roberta Russell, Professor, Virginia Polytechnic Institute And State University, United States
Sharon Rice, Executive Director, APICS Foundastion, United States
Bhaskar Majee, Director of Sales Planning and Operations, Philips, United States
Shari Ruelas, Value Chain Optimization Coordinator, Chevron, United States
Gustavo Ugarte, Sustainability Manager, MillerCoors, United States

Industry practitioners discuss the most pressing issues in global operations and supply chain management. From the use of big data and business analytics to addressing problems in the extended supply chain, this session provides a window into the corporate balancing act of risk and reward in an age of uncertainty.

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Sunday, 02:45 PM - 04:15 PM, Salon I — *Track:* Humanitarian Operations and Crisis Management
Session: Stakeholders and Management
Chair(s): Mohammad Nikoofal

043-1344 What would you know about the next terrorist attack? Target information vs. rationality of the attacker

Mohammad Nikoofal, Student, Mcgill University, Canada
Mehmet Gumus, Assistant Professor, Mcgill University, Canada

The ability to understand and predict the sequence of events leading to a terrorist attack is one of the main issues in developing pre-emptive defense strategies for homeland security. We fully characterize the government's equilibrium allocation strategy, and explore the value of terrorist's private information on government's defense allocation decision.

043-1516 Delicate Diplomacy: Solving the Front-Back Door Paradox in Humanitarian Supply Chains

Christopher Fleming, Assistant Professor, University of West Florida, United States
Michael Dwyer, Student, University of West Florida, United States
Stephen LeMay, Professor, University of West Florida, United States

Humanitarian Aid Supply Chains (HASCs) frequently struggle with the "front-back door" paradox: a non-profit competes with other non-profits for funds (front door) but often works in collaboration with those same non-profits (back door). This paper uses qualitative interviews to uncover suggestions on how non-profits can diplomatically succeed with both goals.

043-1306 Integration and Coordination during Disaster: Learning from Hurricane Katrina and the Haiti Earthquake

Geoffrey Parker, Professor, Tulane University, United States
Ekundayo Shittu, Assistant Professor, Tulane University, United States
Nancy Mock, Associate Professor, Tulane University, United States

Using primary data collected immediately after Katrina and the Haiti earthquake, we develop two cases of systemic failure to illustrate theory to improve coordination between parties in humanitarian operations. We argue that failures are unsurprising, because response organizations operate independently. We discuss possible adaptive solutions that include boundary spanning investments.

043-0102 Stakeholder Salience in Humanitarian Supply Chain Management

Sarah Schiffling, Student, Heriot-Watt University, United Kingdom

Mitchell et al. (1997) developed a framework for assessing the salience of stakeholder groups based on their power, urgency and the legitimacy of their claim. This has been applied to illustrate the complexities of stakeholder interactions in humanitarian supply chains and to provide insights for their management and further research.

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Sunday, 02:45 PM - 04:15 PM, Salon J — *Track:* Empirical Research in Operations Management
Session: Empirical Studies on Methods
Chair(s): Tonya Boone

043-0926 The Benefits and Challenges of Image-Elicitation in Operations Management Research: A Case Study

Tonya Boone, Associate Professor, College of William & Mary, United States
Rishtee Batra, Assistant Professor, Indian School of Business, India

Social scientists have long used image-elicitation approaches as an investigative tool (e.g. Collier 1957). Images surface meanings otherwise invisible to researchers; they facilitate access to respondents' perceptions, interpretations, and motives; and they allow for collection of more detailed and complex data (Buchanan 2001; Harper 2002; Ray and Smith 2012). Despite the benefits, management researchers, particularly operations management scholars, have been slow to adopt image based methods. This paper identifies the potential benefits of image-elicitation approaches to operations management research - as well as the challenges. We outline a methodological process for using images in operations management research. We conclude by describing a recent project that benefited from image-elicitation methodology.

043-1504 Simple Selection Scheme (SSS) for Regression Variables

Ser Aik Quek, Professor, National University of Singapore, Singapore

Traditional regression variables selection uses a threshold for the p-value of an X variable, some rule for "F-to-enter", or the adjusted R-square. These criteria tend to result in a model with too many variables. Using the F-statistic p-value is almost always more parsimonious, even compared to yet other methods.

043-0183 Using fuzzy-set Qualitative Comparative Analysis to measure contract rules in complex project operations

Maria Kapsali, Associate Professor, Umea School of Business, Sweden
Jens Roehrich, Assistant Professor, University of Bath, United Kingdom

An example of how we can use analytic induction and fuzzy-set Qualitative Comparative Analysis to measure the effectiveness of contract rules in complex program operations. fsQCA is useful to simultaneously explore deductively causal complexity of configurations of variables in complex operations and exploit the richness of in-depth qualitative data.

321 Sunday, 02:45 PM - 04:15 PM, Suites I — *Track:* Service Operations
Session: Service Analytics 3
Chair(s): Sanjeev Bordoloi

043-0399 Performance Evaluation of Professional Sports Teams

Sanjeev Bordoloi, Associate Professor, University of St. Thomas, United States
Joshua Langlie, Student, University of St. Thomas, United States

Business operations of professional sports are gaining relevance and are increasingly dependent on quantitative analysis. Sports such as NFL, MLB and NBA generate wealth of data that can be analyzed using operations management tools. We use data envelopment analysis to evaluate efficiency of professional teams and offer scopes for improvement.

043-0491 Data Envelopment Analysis: Identifying the Dual Optimal between Resource Optimization and Human Satisfaction

Susanna Duecker, Student, Illinois Institute of Technology, United States
Joel Goldhar, Professor, Illinois Institute of Technology, United States

Considerable anecdotal evidence supports the observation that Service and Factory Operations are converging in the pursuit of competitive advantage. We offer a Data Envelopment Analysis (DEA) based model to analytically define the efficient frontier that yields a dual optimal between resource optimization and human satisfaction.

043-1383 Routing to Minimize Waiting and Callbacks in Large Call Centers

Amy Ward, Associate Professor, University of Southern California, United States
Dongyuan Zhan, Student, University of Southern California, United States

We consider a call center with heterogeneous agents differentiated by their service speed and quality, measured by the percentage of call-backs after service. We propose a threshold routing policy to trade-off minimizing wait time and minimizing call-backs based on the diffusion control problem in Halfin-Whitt regime and verified by simulation.

322 Sunday, 02:45 PM - 04:15 PM, Suites II — *Track:* Production Planning and Scheduling
Session: Flexibility and Issues in Supply Chain Management
Chair(s): Jens Hartmann

043-0677 Process flexibility design considering multiple flow percentiles

Geoffrey Bryan Chua, Assistant Professor, Nanyang Technological University, Singapore
Chien-Ming Chen, Assistant Professor, Nanyang Technological University, Singapore

Traditionally, design and selection of process flexibility relies on maximizing the expected flow under demand uncertainty. This approach implicitly assumes that the manager is risk-neutral and hence may provide sub-optimal solutions to risk-averse managers. This paper considers multiple percentiles of the distribution of flows under different demand scenarios.

043-0670 The value of flexibility in baseball roster construction

Timothy Chan, Assistant Professor, Mechanical and Industrial Engineering, Canada
Douglas Fearing, Assistant Professor, Technology and Operations Management, United States

Drawing from the theory of production flexibility, we provide the first optimization-based analysis of the value of positional flexibility for a major league baseball team in the presence of injury risk. We find that flexibility was expected to create from 3% (White Sox) to 15% (Cubs) of the team's value.

043-1202 Removing Bullwhip from Lexmark's Toner Operations

Stephen Disney, Professor, Cardiff University, United Kingdom
Lance Hoshiko, Toner Engineering Manager, Lexmark, United States
Lorin Polley, General Manager, Lexmark, United States
Courtney Weigel, Toner Product Engineer, Lexmark, United States

Lexmark's existing planning system, that controls the production of printer toner, created a bullwhip effect of 5.4:1. Inventory variability, measured as a ratio to the demand variance, was 27:1. We describe a project where, since 2011, we have been able to reduce bullwhip to 1.65:1 and inventory variability to 9.5:1.

043-0291 A framework for the control of integrated production and transport systems by combining evolutionary schedulin

Bernd Scholz-Reiter, Professor, Universitat Bremen, Germany
Jens Hartmann, Student, Universitat Bremen, Germany
Carlos Fries, Student, Universidade Federal De Santa Catarina, Brazil

This paper presents a framework for the control of integrated production and transport systems by combining integrated scheduling with fault detection and analysis methods. A framework for the interplay of the scheduling with signal based fault detection and analysis methods is given by a simulation model of the supply chain.

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Sunday, 02:45 PM - 04:15 PM, Suites III — *Track:* General Track

Session: Teaching OM by Playing an Award-Winning Online Game

Chair(s): Sam Wood

043-1671 Play an award-winning online game used to teach Operations Management

Sam Wood, President, Responsive Learning Technologies, United States

In 2004 POMS awarded the Wickham Skinner Award for Teaching Innovation for the development of a competitive online simulation-based assignment named Littlefield Technologies. In this highly interactive session, participants will play an actual game compressed to 45 minutes. Although not required, participants are encouraged to bring a laptop.

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Sunday, 02:45 PM - 04:15 PM, Suites IV — *Track:* General Track

Session: Practice Leaders Forum: Business Analytics

Chair(s): Christopher Tang

043-1688 Information Analytics at HP Labs

Shailendra Jain, N/A, Hp Labs, United States

HP Labs has a long history of innovation in applied analytics driven by HP enterprise needs for strategic and operational decisions. More recently, HP is gearing towards providing business services to manage big data and information optimization solutions for our enterprise customers. This talk will highlight select successful applications of

043-1689 Big Data Problems are Sexy, but Small Data Problems are Beautiful

Thomas Olavson, Director, Operations Decision Support, Google, United States

HBR says that the Data Scientist is the sexiest job of the 21st century. Data scientists work on Big Data problems -- mostly analysis of logs data from internet users. Many problems that quants have faced for years in operations, finance, and strategic planning are quite different, but

043-1690 Business Analytics – A Nestlé's Way

Robert Wang, Sr. Business Analyst, Nestle, United States

The Decision Support Group of Nestlé's Logistic Division, is often regarded as the company's think tank, or internal consulting. Each year it delivers millions of savings through various projects in its supply chain. The group is known for its ability to focus and deliver measurable results in a very short

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Sunday, 02:45 PM - 04:15 PM, Suites V — *Track:* Manufacturing Operations

Session: Advanced Manufacturing Practices

Chair(s): Dominik Eckstein

043-1253 Faster or better? Operations capabilities development as a competitive weapon

Jalba Miniussi, Student, Fundacao Getulio Vargas, Brazil
João Mario Csillag, Professor, Fundacao Getulio Vargas, Brazil

This research aims to contribute to the debate about tradeoffs on Operations Strategy. The results, drawn from a multiple case study, provide evidences that tradeoffs might occur in the selection of the strategic choices. Leading firms are developing higher flexibility and on-time delivery capabilities as a response to competitive pressures.

043-1605 The impact of supply chain agility and adaptability on performance: The role of product characteristics

Constantin Blome, Assistant Professor, Universitã© Catholique De Louvain, Belgium
Dominik Eckstein, Student, Ebs Business School, Germany
Vaidy Jayaraman, Associate Professor, University of Miami, United States
Antony Paulraj, Associate Professor, University of North Florida, United States

Based on organizational theory this paper investigates supply chain agility and adaptability as distinctive dynamic capabilities to improve performance. We further include product characteristics as contingencies to our regression model impacting the performance relationship. Empirical results are based on a dataset consisting of 143 European firms.

043-0400 The impact of organizational context on quality management and innovation performance

Jing Zeng, Student, Yokohama National University, Japan
Phan Anh, Lecturer, University of Economics and Business - Vietnam National University, Hanoi, Vietnam
Yoshiki Matsui, Professor, Yokohama National University, Japan

This paper empirically examines the impact of centralization of authority and integration between functions on hard/soft QM, speed of new product introduction, and product innovativeness. The results suggest the significant effect of contextual factors on hard/soft QM and the existence of distinct paths towards the two aspects of innovation performance.

043-1398 On the selective use of dispatching rules in flexible manufacturing

Carlos Ernani Fries, Associate Professor, Federal University of Santa Catarina, Brazil
Mônica Maria Luna, Associate Professor, Federal University of Santa Catarina, Brazil

This study examines the potential of the selective assignment of dispatching rules in flexible manufacturing. Results obtained through simulation show that, in a context-dependent and multi-criteria environment, the selective use leads to better results than those observed with individual and continuous appointment of dispatching rules.

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Sunday, 02:45 PM - 04:15 PM, Suites VI — *Track:* Product Innovation and Technology Management

Session: Technology Diffusion

Chair(s): Wenli Xiao

043-0018 An empirical analysis of diffusion and impact of business analytics in the UK retail sector

Ramakrishnan Ramanathan, Professor, University of Bedfordshire, United Kingdom
Yanqing Duan, Professor, University of Bedfordshire, United Kingdom
Guangming Cao, Reader, University of Bedfordshire, United Kingdom
Elaine Philpott, Senior Lecturer, University of Bedfordshire, United Kingdom

We develop a theoretical framework to help understand how the new business analytics technologies and validate using interviews with organizations representing eight retail UK companies. Our preliminary findings identify the importance of leadership and governance in successful implementation and the catalytic nature of the adoption of on-line trading.

043-1068 Analysis of Knowledge Transfer from a New Product Development Project to an Existing Product

Wenli Xiao, Assistant Professor, University of San Diego, United States
Cheryl Gaimon, Professor, Georgia Institute of Technology, United States

We introduce a dynamic model to explore a manager's pursuit of an existing product improvement project and a new product development project. A key feature of the model is the characterization of the knowledge transfer process from the new product development project to the existing product improvement project.

043-0172 Fostering New Technology Adoptions

Ozgen Karaer, Assistant Professor, Middle East Technical University, Turkey
Feryal Erhun, Assistant Professor, Stanford University, United States
Hau Lee, Professor, Stanford University, United States

Potential adopters of a new technology (e.g. RFID) must account for various factors, such as uncertainties, steep starting costs, and network effects, while making the investment decision, and hence may be hesitant. Here we address these dynamics by studying the interaction between a technology vendor and potential adopters.

043-0600 Decision methodology for the acquisition of new technologies

Achim Kampker, Associate Professor, Aachen University, Germany
Peter Burggräf, Senior Lecturer, Aachen University, Germany
Danuta Wowreczko, Lecturer, Aachen University, Germany

Due to the electrification of the power train, automobile manufacturers/suppliers need a methodology to decide on how know-how/skills have to be developed for new production techniques/processes. We want to provide a systematically structured method to help companies in taking decisions in an objective way, while reducing costs and time.

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Sunday, 02:45 PM - 04:15 PM, Silverton *Track:* Learning and Knowledge Management in OM
Session: Knowledge Transfer and Learning in Distributed Project Settings
Chair(s): Saikat Chaudhuri

043-0691 Capability Development Across Firm Boundaries: Comparing Offshore Outsourcing of R&D vs. IT Services

Saikat Chaudhuri, Assistant Professor, University of Pennsylvania, United States

Motivated by globally disaggregating firms, we compare the performance drivers in the offshore outsourcing of more routinized, codified IT services with less routinized and codifiable R&D work, to identify the conditions under which more central tasks can be located outside. Our analysis of a sample of such projects by a leading vendor suggests that capability creation across firm boundaries is fruitful under certain organizational designs, bearing implications for notions of core vs. periphery.

043-1619 IT Services Outsourcing with Observable Performance and Different Outcome Verification Cost

Ravi Aron, Associate Professor, Jonkoping University, United States
Ying Liu, Assistant Professor, Hamburg University of Technology, United States

IT Service Outsourcing is unable to achieve cost savings without assurance of work performance. We develop a game theoretical model to investigate how performance observability and resulted different verification cost structures affect the strategies of providers and client of service outsourcing. Implications for management and social welfare are also discussed.

043-1008 Protecting the Confidentiality of Shared Information: Evidence from the Video Game Industry

Brett Massimino, Student, Ohio State University, United States
John Gray, Assistant Professor, Ohio State University, United States
Kenneth Boyer, Professor, Ohio State University, United States

We examine the effects of location-related factors on the confidentiality of project-level information which is shared among supply chain members. Here, we introduce a novel measure of information confidentiality which leverages data from black-market distribution channels. We relate our findings to information security, knowledge management, and industrial agglomeration literatures.

043-1176 The Architecture of Multi-partner Alliances in R&D Projects: The Impact of Scale and Scope

Anant Mishra, Assistant Professor, George Mason University, United States
Aravind Chandrasekaran, Assistant Professor, Ohio State University, United States
Alan MacCormack, Associate Professor, Harvard University, United States

How should firms design partnering alliances in R&D projects that involve multiple partners? Using primary data on multi-partner alliances across 147 R&D projects, we develop and test hypotheses that examine the interrelationship between the different elements of partnering architecture and partnering performance in an R&D project.

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Sunday, 02:45 PM - 04:15 PM, Matchless *Track:* Sustainable Operations
Session: Topics in sustainable supply chain management - 2
Chair(s): Amir Hossein Ansaripoor

043-0243 Closing the Loop: A Case Study of Sustainability in Clothing Supply Chains

Alison Ashby, Lecturer, Plymouth University, United Kingdom

This paper examines Sustainable Supply Chain implementation; relevant literature is reviewed and a case study of a clothing SME undertaken to gain insight into sustainability practice. The findings illustrate the importance of shared commitment and that sustainability is achievable when innovative, considered products are aligned with a coordinated supply chain.

043-0401 A Multi-Stage Stochastic Programming Model of the Sustainable Fleet Replacement Problem

Amir Hossein Ansaripoor, Student, Essec Business School, Singapore
Fernando Oliveira, Professor, Essec Business School, Singapore

We study the problem faced by a firm for managing the portfolio of vehicles used in its fleet. This article contributes to the literature on fleet replacement and sustainable operations using multi-stage stochastic programming and CVaR to account for uncertainties. We validate the results with a real world case study.

043-0420 Coordinate product design and supply chain management to achieve economic and sustainability goals

Jack C. P. Su, Assistant Professor, University of New Mexico, United States
C. H. Chu, Professor, National Tsing Hua University, Taiwan, Republic of China
Yih-Long Chang, Professor, Georgia Institute of Technology, United States

Researchers in product design have adopted environment friendly material and manufacturing process to reduce environmental impact. However, if the designer ignore the impacts caused by the supply chain, the effort could be compromised. In this research we seek to combine decisions of PD and SCM using a real world case.

043-0752 Is a dense supply chain network more environment-friendly?

Mark Goh, Associate Professor, National University of Singapore, Singapore
Rohit Nishant, Student, National University of Singapore, Singapore

Moving beyond a single organizational view, with the help of a corporate database, we investigate the supply chain network of major manufacturers in aviation sector to address the above question. Specifically, we apply network characteristics to empirically determine attributes that are salient for environmental sustainability within a supply chain network.

043-0518 The impact of Urban Logistics Services on emerging market megacities – a traffic flow model

Matthias Winkenbach, Student, Whu - Otto Beisheim School of Management, Germany
Stefan Spinler, Professor, Whu - Otto Beisheim School of Management, Germany
Edgar Blanco, Professor, Massachusetts Institute of Technology, United States

We present a queuing theory based traffic flow model representing private and commercial vehicular traffic in emerging market megacities. Based on this model we analyze the potential impact of implementing an Urban Logistics coordination and consolidation platform for thitherto highly fragmented retail store supply on congestion, emissions and fuel consumption.

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Sunday, 02:45 PM - 04:15 PM, Gold Coin — *Track:* Operations Management Practice
Session: Lean in Practice
Chair(s): Richard Franza

043-0053 Lean Implementation Using Soft Systems Methodology (SSM)

Richard Franza, Professor, Kennesaw State University, United States
Satya Chakravorty, Professor, Kennesaw State University, United States
Douglas Hales, Associate Professor, University of Rhode Island, United States

Lean implementations strive to eliminate all forms of waste in processes. This study discusses a successful Lean/Waste Elimination initiative of a building products company using Soft Systems Methodology (SSM), a systematic approach to problem solving. While we provide future directions of research, the lessons learned are primarily for practicing managers.

043-0947 Lean Implementations in Hungary

Istvan Rendesi, Manager, Audi Hungaria Motor Kft, Hungary
Zoltan Kovacs, Professor, University of Pannonia, Hungary
Zoltan Szegedi, Professor, University of Pannonia, Hungary
Gyula Vastag, Professor, University of Pannonia, Hungary

Using a survey of 65 respondents and a series of case studies in Hungary, the paper analyzes the motivations leading to lean implementations and the results of these projects. Based on the sampling frame, the results can be generalized to medium-large manufacturing companies worldwide.

043-1465 A systems approach to customizing lean six sigma implementations

Richard Orme, Student, Aston University Birmingham, United Kingdom
Ben Clegg, Associate Professor, Aston University Birmingham, United Kingdom
Chris Rees, , ,
Mike Titchen, , ,

Contemporary research questions the universal applicability of a commoditized lean six sigma approach to organizational improvement. This paper empirically investigates how organizations customize lean six sigma programs; presenting new quantitative and qualitative systemic models describing organizational processes and dynamic behavior in terms of improvement program maturity and cost of quality.

043-0345 Lean and Performance: The Impact of Organizational Culture

Rachna Shah, Associate Professor, University of Minnesota, United States
Rick Hardcopf, Student, University of Minnesota, United States

Almost all manufacturing operations in industrialized economies leverage, or have leveraged, some aspect of lean. Unfortunately, success from using lean has been mixed. This study evaluates the role of organizational culture in realizing performance benefits from lean. We build a moderation model to test the role of four different organizational cultures in delivering manufacturing performance, as measured by cost, quality, delivery and flexibility.

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Sunday, 02:45 PM - 04:15 PM, Molly Brown *Track:* Work Force Planning
Session: Round Table on Modern Workforce Planning and Modeling
Chair(s): Jay April

043-1672 Panel: Round Table on Modern Workforce Planning and Modeling

Jay April, Chief Development Officer, Optek Systems, Inc., United States

Modern Workforce Planning and Modeling must identify workforce requirements that achieve higher revenues and lower costs, guide optimal decisions to maximize readiness, and enable efficient recruitment, retention, and career planning. We will identify and discuss appropriate technologies for fulfilling these expectations.

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Sunday, 02:45 PM - 04:15 PM, Spruce *Track:* Revenue Management and Pricing
Session: Teaching Revenue Management and Pricing
Chair(s): John Turner

043-1643 Teaching Panel: Revenue Management and Pricing

Itir Karaesmen, Assistant Professor, American University, United States
John Turner, Assistant Professor, University of California Irvine, United States
John Birge, Professor, University of Chicago, United States
Mark Ferguson, Professor, University of South Carolina, United States
Dan Zhang, Assistant Professor, University of Colorado Boulder, United States

This is a panel on Teaching Revenue Management and Pricing (RMP). Panelists will share their experiences in introducing RMP courses to business curriculum, designing courses at graduate and/or undergraduate levels, and teaching RMP topics as part of core courses or other electives.

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Sunday, 02:45 PM - 04:15 PM, Nat Hill *Track:* Supply Chain Contracting
Session: Information Sharing and Collaboration in Supply Chains
Chair(s): Albert Ha

043-0127 Information Sharing in Competing Supply Chains with Cost Reduction Efforts

Albert Ha, Professor, Hong Kong University of Science & Tech, Hong Kong
Quan Tian , Student, Hong Kong University of Science & Tech, Hong Kong

We investigate the incentive for vertical information sharing in two competing supply chains where the manufacturers can take efforts to reduce production costs. The retailers have private demand information and engage in Cournot or Bertrand competition. We characterize the equilibrium information sharing outcome and conduct sensitivity analysis.

043-0131 Supplier Encroachment Under Asymmetric Information

Zhuoxin Li, Student, University of Texas Austin, United States
Guoming Lai, Assistant Professor, University of Texas Austin, United States
Steve Gilbert, Professor, University of Texas Austin, United States

We explore the implications of supplier encroachment into a reseller's market when the reseller may be better informed about market size, and show how this can affect the conditions under which the supplier and/or the reseller can benefit from encroachment. We also explore the implications for information management.

043-0133 Public forecast information sharing in a market with competing supply chains

Hyoduk Shin, Assistant Professor, University of California San Diego, United States
Noam Shamir, , Northwestern University, United States

Studying the operational motivation of a retailer to publicly announce his forecast, we show that by making forecast information publicly available to both his manufacturer and to the competitor, a retailer can credibly share his forecast. Moreover, the retailer even prefers public forecast announcement to advance purchase contract.

043-1432 Alliances of Complementary Suppliers Selling Durable Components

Yuhong He, Student, University of California Irvine, United States
Saibal Ray, Associate Professor, Mcgill University, Canada
Shuya Yin, Associate Professor, University of California Irvine, United States

Suppliers of complementary components often form contractual alliances when selling their components to customers. This paper studies how product durability (measured by the strength of the used goods market)and customers' behavior affect such coordinating incentives.

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Sunday, 02:45 PM - 04:15 PM, Pomeroy *Track:* Healthcare Operations Management
Session: Research Hospitals, Radiology and Scheduling
Chair(s): Darwin Davis

043-1464 An Empirical Analysis of the Effect of Residents on Emergency Department Treatment Times

David Anderson, Student, University of Maryland, United States
John Silberholz, Student, Massachusetts Institute of Technology, United States
Bruce Golden, Professor, University of Maryland, United States

The residency teaching model is often cited as a possible source of inefficiency in hospitals. In this paper, we examine data from patients in the emergency department at the University of Maryland Medical Center. We compare treatment times from when residents were present to when they were absent,

043-0062 Cyclic Scheduling in Specialty Clinics in Academic Medical Centers

Chester Chambers, Assistant Professor, Johns Hopkins University, United States

Outpatient scheduling research has under-performed in at least three ways. First, issues particular to Academic Medical Centers are typically ignored. Second, steady state results are too often reported. Third, research rarely reports on actual implementation. This work develops exact results for this complex environment and reports on actual implementation.

043-1572 A preliminary investigation of work management policies for radiology report editing

Darwin Davis, Associate Professor, University of Delaware, United States
Kert Anzilotti, Medical Director, Imaging Services , Christiana Care Health System, United States

Speech recognition software is commonly used to create written reports as a Radiologist dictates. This report requires editing, either by the radiologist or by a transcriptionist. We present a preliminary investigation of radiology work management policies and performance implications such as cost, turnaround time, and capacity utilization.

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Sunday, 04:30 PM - 06:00 PM, Salon A — *Track:* Behavioral Issues in Operations Management

Session: Bargaining and Purchasing in Supply Chains

Chair(s): Roberto Marx

043-1259 Inter-Functional Integration and Effects on Purchasing and Supply Management – A Social Exchange Perspective

Gernot Kaiser, Assistant Professor, Ebs Business School, Germany

We take a group-behavioral approach to evaluate the relationship between purchasing integration and other corporate functions and the resulting operational performance. Utilizing an empirical study of 247 cases we show that a trustful atmosphere, based on social and behavioral influences, moderates the integration-performance relation.

043-0006 Automotive Industry Transformations and Work Relations in Brazil. What is the next step?

Roberto Marx, Associate Professor, Universidade De Sao Paulo, Brazil
Adriana Mello, Assistant Professor, Universidade De Sao Paulo, Brazil

The aim of this paper is to discuss this issue, by analysing the transformations that took (andare taking) place in the automotive industry that operates in Brazil since the beginning of the21st Century and their impact in the work organization, labor unions and forms of firm-levelinterest representation.

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Sunday, 04:30 PM - 06:00 PM, Salon B — *Track:* Healthcare Operations Management

Session: Managing Emergency Departments

Chair(s): Yann Ferrand

043-0590 A Methodology for Forecasting Emergency Department Demand

João Chang Junior, Associate Professor, Centro Universitario Da Fei, Brazil
Domenico Caruso, Student, Centro Universitario Da Fei, Brazil

The demand for Brazilian healthcare services has increased significantly. From 2007 to 2011 there was an increase of 87.2% in the number of hospitalized patients. The objective of this paper is to develop a methodology for predicting the emergency demand for hospitals. A time series database from two major Brazilian hospitals was evaluated by econometrics methods.

043-1579 Simulation for Process and Performance Improvement: Healthcare Resource Management

CIGDEM GURGUR, Associate Professor, Purdue University, United States

To study the tradeoffs in patient satisfaction and system efficiency, a patient flow simulation model is developed for an Emergency Department of a major hospitalwith the incorporation of patient classification, blocking effects, and time dependent arrival patterns. The simulation model helps in capacity management decisions.

043-1153 Supertrack in the Emergency Department

Yann Ferrand, Assistant Professor, Clemson University, United States
Michael Magazine, Professor, University of Cincinnati, United States
Uday Rao, Associate Professor, University of Cincinnati, United States
Todd Glass, Division Chief, Emergency Medicine, Nemours Children's Hospital, United States

We investigate the trade-off between flexible and focused resources to tackle issues of capacity imbalances and long patient wait time in an emergency department. We use discrete event simulation to evaluate different ways to organize resources under various input conditions in terms of patient wait time and length of stay.

341

Sunday, 04:30 PM - 06:00 PM, Salon C — *Track:* Sustainable Operations

Session: Lean initiatives and human resources concerns in sustainable business management

Chair(s): João Amato Neto

043-0213 Human rights in sustainable supply chains: towards corporate constitutionalization?

Lucas Amato, Student, University of São Paulo (USP), Brazil
João Amato Neto, Professor, University of São Paulo (USP), Brazil

This paper aims at discussing, in the light of a transdisciplinary bibliographic review, the possibilities and practices related to corporate human rights obligations, in the systemic approach of sustainable supply chains and subcontracting networks. International and national law obligations are focused, besides the institutional and procedural structures designed in self-regulation.

043-0287 Causes and performance outcomes of health and safety incidences

Frank Wiengarten, Assistant Professor, Esade Business School, Spain
Mark Pagell, Professor, University College Dublin, Ireland
Paul Humphreys, Professor, University of Ulster, United Kingdom
Antony Upward, Student, York University, Canada
Chris Lo, Assistant Professor, Hong Kong Polytechnic Univ, Hong Kong

The objective of this present research is to investigate the causes and financial and operational performance outcomes of health and safety incidences. To analyze these relationships a longitudinal secondary database was complied and utilized. The database consists of 648 firms based in the UK.

043-0597 Is lean green and safe? An empirical examination of the relationship between lean production and sustainability

Annachiara Longoni, Student, Politecnico Di Milano, Italy
Raffaella Cagliano, Professor, Politecnico Di Milano, Italy

Empirical results from an international survey aims to clarify the complex relationship between lean production and environmental and social sustainability, through the investigation of lean impacts on sustainability performance and its interaction with sustainability action programs and the organization for sustainability (organizational responsibility and worker commitment).

043-1185 Lean methods and environment problems: investment's self-sustainability

Lumbidi Kupanhy, Professor, Wakayama University, Japan

The Lean Initiative of United States Environment Protection Agency promotes the application of lean thinking to deal with manufacturing-generated environmental problems. In this paper we present the new concept of "self-sustainability" for investments geared towards solving environmental problems in manufacturing while economic and competitive advantages are also leveraged.

043-0962 A Multi-criteria Decision Model to Balance Economy, Environment, and Safety in Cleaning Solvent Choices

Thomas Sloan, Associate Professor, University of Massachusetts Lowell, United States
Joseph Sarkis, Professor, Clark University, United States

Many businesses struggle to balance financial, environmental, and safety performance. UMass Lowell's Toxics Use Reduction Institute has evaluated numerous cleaning solvents with respect to these criteria, with the aim of promoting greener, safer alternatives. We develop a multi-criteria optimization model using the CleanerSolutions database to analyze trade-offs.

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Sunday, 04:30 PM - 06:00 PM, Salon G — *Track:* Supply Chain Management

Session: Flexibility & Agility in Supply Chains

Chair(s): Manoj Malhotra

043-1421 Understanding Agility in the Context of Supply Chain

Khawaja Saeed, Associate Professor, Wichita State University, United States
Sue Abdinnour, Professor, Decision Sciences, United States
Manoj Malhotra, Professor, University of South Carolina, United States

A literature review revealed a variety of approaches to define and measure agility in the supply chain, but the concept remains ambiguous. A key challenge is to distinguish agility from flexibility. We provide such a distinction and propose a conceptual structure for agility in the context of the supply chain.

043-0446 Introducing Supply Chain Segmentation Procedures into Flexibility Management

Dominik Pfeiffer, Lecturer, Westfälische Wilhelms-Universität Münster, Germany
Sebastian Terlunen, Lecturer, Westfälische Wilhelms-Universität Münster, Germany
Jan-Hendrik Fischer, Lecturer, Westfälische Wilhelms-Universität Münster, Germany
Bernd Hellingrath, Professor, Westfälische Wilhelms-Universität Münster, Germany

Flexibility measures are an effective means to cope with a volatile business environment. This paper proposes a procedure for the identification of product-customer-segments and application of appropriate flexibility measures, hence allowing for proper treatment of heterogeneous product-customer groups' requirements. The concept is evaluated using DES in an industrial scenario.

043-0257 How efforts to achieve resiliency fit with lean and agile practices

Maryam Lotfi, Student, Cass Business School, United Kingdom
ManMohan Sodhi, Professor, Cass Business School, United Kingdom
Canan Kocabasoglu Hillmer, Senior Lecturer, Cass Business School, United Kingdom

Regarding today's volatile and turbulent markets, becoming resilient has become crucially important. While many researchers seek to identify factors that can help firms (and their supply chains) achieve resilience, questions regarding how resilience fits with leanness and agility remain unanswered. This paper aims to answer this question.

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Sunday, 04:30 PM - 06:00 PM, Salon H — *Track:* Supply Chain Management

Session: Supply Chain Risk Management

Chair(s): Philippe Chevalier

043-1163 Managing the unreliable client

Philippe Chevalier, Professor, Universitã© Catholique De Louvain, Belgium
Wenli Peng, Student, Universitã© Catholique De Louvain, Belgium

We analyze the relationship between a supplier and its clients. In a context of long term capacity allocation with short term order adjustment, we study how the impact of the quality of the forecasts made by the client on the agility of the supply chain.

043-1518 Counterfeit Vulnerability in Supply Chains

Jillian Watson, Student, Department of Management, United States
Aleda Roth, Professor, Clemson University, United States

This research explores the antecedents and outcomes of deceptive counterfeit vulnerability in firms and proposes that the Six T's framework can be used as a countermeasures strategy to mitigate the performance impacts related to deceptive counterfeit vulnerability in supply chains.

043-0152 Cash Flow Management and Retail Firm Performance

James Kroes, Assistant Professor, Boise State University, United States
Andrew Manikas, Assistant Professor, University of Louisville, United States

Our study investigates and compares the relationship between two cash flow metrics (the Cash Conversion Cycle and the Operating Cash Cycle) and the firm market performance of retailers in an effort to identify improved cash flow management strategies for the retail industry.

043-1451 Management of risk in supply chains using simulation

Lina Wang, Student, University of Nebraska Lincoln, United States
Demet Batur, Assistant Professor, University of Nebraska Lincoln, United States
F. Fred Choobineh, Professor, University of Nebraska Lincoln, United States

Because of the complexity and randomness of supply chains, simulation is a viable tool for modeling and analysis. Maximization of expected profit is the standard objective in the literature. However, this objective is not justifiable because of high uncertainty. A mean-variance tradeoff analysis via simulation is proposed for supply chains.

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Sunday, 04:30 PM - 06:00 PM, Salon I
Track: Behavioral Issues in Operations Management
Session: Operations and Cultural Change
Chair(s): Torbjørn Netland

043-1330 Operation of mechanical sugarcane harvesters: an ergonomic approach

Joao Camarotto, Professor, Universidade Federal de São Carlos, Brazil
Lidiane Narimoto, Student, Federal University fo Sao Carlos-UFSCar, Brazil

This article demonstrated the role of the operators' competences in carrying out task and performance at Brazilian plants. Through the application of the ergonomic principles, the activity in real work situation was analyzed the main competences required for satisfactory operation were identified.

043-0325 Green competence framework: Evidence from China

Muhammad Abdulrahman, Assistant Professor, The University of Nottingham Ningbo, Nottingham University Businees School China, China
Nachiappan Subramanian, Associate Professor, The University of Nottingham Ningbo China, Nottingham Business School China, China
Wu LIN, Student, The University of Nottingham Ningbo, China

Green cities are not only more environmentally friendly but also guarantees increased quality of life and simultaneously cut costs of living. People's green competencies that enhance cities' greenness have not been captured. Using Robert's competencies framework, we propose and empirically validates people's green competence framework in two Chinese cities.

043-1606 Cultural change in IT department: exploratory case study in a telecommunications' company

Cristiane Anacleto, Student, Universidade Federal De Santa Catarina, Brazil
Crishna Irion , Professor, INATEL, Brazil
Edson Paladini, Associate Professor, University Federal Of Santa Catarina, Brazil

This work proposes a model for the conduct of cultural change in the IT department of a company in the telecommunications industry. The model consists of five steps and we conclude that a receptive environment, employees not only understand why the changes are necessary.

043-0142 Implementing company-specific production systems in global networks: What can managers do?

Torbjørn Netland, Student, NTNU, Norway
Kasra Ferdows, Professor, Georgetown University, United States

We investigate which exact managerial actions affect the successful implementation of a company-specific production system (XPS). We analyze the implementation of XPSs in two multinational companies–together comprising 100 plants in over 30 countries. We identify different bundles of actions that are more effective in different stages of XPS implementation.

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Sunday, 04:30 PM - 06:00 PM, Suites I
Track: Service Operations
Session: Service Operations Theory 1
Chair(s): Amitkumar Kakkad

043-0366 Analysis of competitiveness in accountability companies through the use of services offer

Kleber Nobrega, Professor, Universidade Potiguar, Brazil
Marla Teciana Gurgel, Student, Universidade Potiguar, Brazil
Tereza Souza, Professor, Universidade Potiguar, Brazil

Competitiveness may be analyzed through what services companies deliver to their customers, and how they deliver these services. This paper analyses the degree of competitiveness of accountability companies, by classifying a list of usual delivered services in central, complementary and supplementary, according to service concept model

043-0520 Service Business Development in Manufacturing Industry SMEs – A Service-Dominant Logic Approach

Jukka Hemilä, Senior Scientist, Vtt Technical Research Centre of Finland, Finland

We present the European manufacturing SMEs transfer from the product- or technology-orientation to the service orientation. We have defined a framework for the industrial service business development. We analyze service business development framework by using the theoretical Service-Dominant logic approach and its ten Foundational Premises.

043-0546 Proposing a business-to-business service model: a systematic literature review and future directions

Daniel Auler, Student, UNISINOS, Brazil
Rafael Teixeira, Associate Professor, UNISINOS, Brazil

The objective of our paper is twofold. First, we review overall service management models and propose a comprehensive business-to-business service model. Second, based on this model, we make a systematic literature review of service operations journals to provide an overview of papers published and point future research directions.

043-1196 Service recovery when the firm has not failed to deliver

Amitkumar Kakkad, Assistant Professor, University of San Diego, United States

This paper reviews the extant literature on service recovery, and proposes a framework for a distinct category of service failures that the current literature does not address adequately: recovering from service failures when the firm has not failed to deliver.

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Sunday, 04:30 PM - 06:00 PM, Suites III
Track: Empirical Research in Operations Management
Session: Empirical Studies in Process Management
Chair(s): Kayvan Lavassani

043-0649 Process Orientation Measurement and Effectiveness: A Study of Canadian and US Organizations at Intra- and Inter-Organizational Levels

Bahar Movahedi, Student, Carleton University, Canada
Kayvan Lavassani, Assistant Professor, North Carolina Central University, United States
Uma Kumar, Professor, Carleton University, Canada

While the benefits of process orientation have been studies in various contexts, previous studies have not explored the effect of process orientation at intra- and inter-organizational levels, on organizational competitiveness. The results of this empirical-study provide benchmarks for organizations to gain competitive advantage through better management or their business processes.

043-0648 An Empirical Investigation of the Role of Process Improvements in Organizational Supply Chain Performance

Kayvan Lavassani, Assistant Professor, North Carolina Central University, United States
Bahar Movahedi, Student, Carleton University, Canada
Vinod Kumar, Professor, Carleton University, Canada

Process view of supply chain management is investigated in this paper. This study explores the measurement of process orientation with respect to core forward supply chain processes as well as the effects of process orientation on various aspects of supply chain performance.

043-1207 Quality management approach in construction equipment manufacturing

Elisabeth Adams, Student, Nottingham Trent University, United Kingdom
Ehsan Sabet, Senior Lecturer, Nottingham Trent University, United Kingdom
Baback Yazdani, Professor, Nottingham Trent University, United Kingdom

Quality management practices have been documented extensively, with concepts often being termed as the latest management fad. Conducting a primary research on one of the largest European construction machinery producers, along with a critical literature review, this study tackles a traditional debate: is Total Quality Management (TQM) a 'management fad'?

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Sunday, 04:30 PM - 06:00 PM, Suites V — *Track:* Manufacturing Operations
Session: TQM and Six sigma
Chair(s): Run Niu

043-1137 Relationship between ISO 9000 implementation and business performance in Vietnamese manufacturing companies

Anh Phan, Lecturer, University of Economics and Business, Vietnam National University, Hanoi, Vietnam
Yoshiki Matsui, Professor, Yokohama National University, Japan

This study focuses on the relationship between the implementation of ISO 9000 and the improvement in different perspectives of business performance. The results of questionnaire survey on 200 Vietnamese manufacturing companies during 2012 indicate that the certified companies have the significant improvement on product quality and customer satisfaction.

043-0353 Effectiveness of Increasing Span of Control on Operational Performance Variables: A Case Study

Raed EL-Khalil, Assistant Professor, Lebanese American University , Lebanon

The following paper utilize design of experiment in order to investigates the impact of increasing the span of control post 2009 at the Big Three (GM, Ford, and Chrysler LLC) automotive production facilities in North America on selected operational performance variables (Jobs per Hour Lost, Quality rejects, and absenteeism).

043-0377 Implementation of quantity management programs in China

Run Niu, Assistant Professor, Webster University, United States
Ying Fan, Assistant Professor, University of Colorado Colorado Springs, United States

Quality of Chinese production has received growing attention around the world thanks to globalization and outsourcing. We investigate the motivation, implementation and values of quality management programs by conducting in-depth interviews with over 30 managers at various quality-related positions in different businesses in China.

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Sunday, 04:30 PM - 06:00 PM, Suites VI — *Track:* Product Innovation and Technology Management
Session: Complex Systems and Outsourcing
Chair(s): Feng Zhou

043-0503 Offshoring Product Development Tasks for Complex Engineered Systems

Anshuman Tripathy, Associate Professor, Indian Institute of Management Bangalore, India

As firms develop PD centers globally (for efficiencies), they are challenged in the selection of (and related efforts) the tasks to offshore. We show that rather than modularity, firms need to prioritize those tasks for offshoring that help in developing the competence at the offshoring location for future development activities.

043-1591 An Affective-Cognitive Foundation of User Experience Design in Complex Product-Service Ecosystems

Roger Jiao, Associate Professor, Georgia Institute of Technology, United States
Feng Zhou, Student, Georgia Institute of Technology, United States

This presentation reviews the theoretical foundation of user experience design. The focus is to develop mathematical models of affective-cognitive decisions for the quantification, evaluation and reasoning of user experience. It will introduce a variety of new methods for understanding human users' subjective experience and affective predication under uncertainty.

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Sunday, 04:30 PM - 06:00 PM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: Track Showcase Speaker: Roger Bohn
Chair(s): Michael Lapré

043-1670 How the Art of Flying Became (Mostly) a Science

Roger Bohn, Professor, University of California San Diego, United States

I address an important gap in OM, with a descriptive and predictive framework for high-skilled services. I use a longitudinal analysis of flying technology, which improved from "learning by dying" to present methods 1000x better. Surgery today is roughly the level of flying in 1939.

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Sunday, 04:30 PM - 06:00 PM, Matchless

Track: Marketing and Operations Management Interface

Session: Providing Variety: New Issues and Perspectives

Chair(s): Karthik Ramachandran

043-0391 Assortment Planning of a Configurable Product

Ed Umpfenbach, Student, Wayne State University, United States
Ratna Chinnam, Associate Professor, Wayne State University, United States

Producers of configurable products such as automobiles often struggle to balance supply chain complexity with sufficient customer choice. We present a model designed for an automotive manufacturer to tackle this problem which scales with their complex product, considers the effect of packaging, and considers sustainability aspects of the product.

043-0247 Integration of Consumer Purchasing Behaviour in Production Planning of Food Goods

Pedro Amorim, Lecturer, Universidade do Porto, Portugal
Douglas Alem, Assistant Professor, Universidade Federal De Sã£O Carlos, Brazil
Alysson Costa, Assistant Professor, Universidade De Sao Paulo, Brazil
Bernardo Almada-Lobo, Assistant Professor, Universidade do Porto, Portugal

This presentation addresses the impact of consumer purchasing behavior on the production planning of perishable food products. Results indicate that model approximations neglecting the fact that customers have a decreasing willingness to pay lead to both profit losses and more spoiled products.

043-0396 Managing Product Offerings During Life-Cycle of Technology Products

Saurabh Bansal, Assistant Professor, Penn State University University Park, United States
Sandra Transchel, Associate Professor, Kuehne Logistics University, Germany

We study a co-production system where two products are simultaneously produced in uncontrollable fractions. The firm determines whether to offer both products in the market, and whether to withhold inventory of the low-end product. We identify the changes in the firm's strategy with changes in manufacturing technology.

043-0488 Product Assortment, Quality and Pricing in the Presence of Retail Competition and Store Brands

Bo Liao, Student, Haas School of Business, United States
Candace Yano, Professor, University of California Berkeley, United States

We study a retailer's problem of choosing the quality of its store brand product and pricing its store- and national-brand products in the same category when competing against a retailer with similar product offerings. We show that the retailer's equilibrium store-brand quality is close to that of the national brand.

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Sunday, 04:30 PM - 06:00 PM, Gold Coin

Track: Operations Management Practice

Session: Operations in Brazil

Chair(s): Marcio Machado

043-1212 Sustainable competitiveness in operation of dry bulk cargoes in the port of São Sebastião: environmental innovation

Getulio Akabane, Student, Universidade Anhanguera, Brazil
Camila Lopes, Student, Universidade Metropolitana de Santos, Brazil
Washington Luiz Soares, Student, Universidade Santa Cecilia, Brazil

This research investigates a innovative environmental solution case for the São Sebastião Port, based on interviews with company managers responsible for reducing dispersion in dry bulk loading and unloading operation and photographic records of operation. The results show that incorporation of environmental issues in port activity leads to sustainable competitiveness.

043-0234 Strategies in networks of collaborative transportation systems by RFID for container DEPOT`s case study.

Washington Luiz Soares, Student, UNISANTA - Santa Cecília University from BRAZIL, Brazil
Getulio Akabane, Student, CEETEPS/ANHANGUERA, Brazil
Hamilton Pozo, Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil
Camila Lopes, Student, UNIMES, Brazil

The methodology is an qualitative exploratory research about technological for innovations by RFID - Radio Frequency Identification. The paper proposes ways to reduce operating costs for a DEPOT of empty containers, mainly to avoid waste of time in the separation of containers for cargo operations directed at offshore oil rigs.

043-0306 Sustainability as a success factor in global operations: a survey in the automotive manufacturing companies in

Getulio Akabane, Student, CEETEPS/Anhanguera, Brazil
Sergio Ruggiero, Professor, Anhanguera, Brazil
Christiano Farias, Professor, Anhanguera, Brazil
Luis Zulietti, Professor, Anhanguera, Brazil
Joao Zaleski , Professor, Anhanguera, Brazil

This research aims to illustrate each stage of the supply chain for deeper insights into the ways in which companies translate their green guidelines and analyze the rationale and the results connected with such decisions represented by three big auto-motor assembly companies operating in Brazil with global operations.

043-0033 LEAN MANAGEMENT PRACTICE: TOYOTA BRAZILIAN PLANTS CASE

Jorge Muniz Jr., Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Joao Batista, Student, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Geilson Loureiro, Researcher, Instituto Tecnologico De Aeronautica, Brazil

This paper aims to analyse the Lean Management applied to Toyota Brazilian plants. Qualitative study has been used through interviews in four Toyota Brazilian plants. Results have indicated similarity in the researched plants daily work consistent with the Toyota headquarter orientation and the lean literature despite the Brazilian cultural aspect.

357 Sunday, 04:30 PM - 06:00 PM, Molly Brown — *Track:* Marketing and Operations Management Interface
Session: Consumer Behavior II
Chair(s): Gulver Karamemis

043-1019 Channel Selection Decisions: The impact of Word-of-Mouth Effects

Gulver Karamemis, Student, University of Florida, United States
Asoo Vakharia, Professor, UF, United States

Although there is anecdotal evidence that suggests that firms are choosing to add social network channels, this decision has not been rigorously investigated. We examine how word-of-mouth effects moderate the decision to add a social network channel for a firm that currently operates a proprietary online channel.

043-0540 Consumer Do-It-Yourself repair

Sander De Leeuw, Associate Professor, Vrije Universiteit Amsterdam, Netherlands
Jaap Boter, Professor, Vrije Universiteit Amsterdam, Netherlands
Mike Leahy, Student, Vrije Universiteit Amsterdam, Netherlands
Dennis Jasper, Student, Vrije Universiteit Amsterdam, Netherlands

Confronted with a malfunctioning product, consumers can return it for repair or call in a technician. This paper investigates a third option–DIY repair by the consumer with guidance and parts supplied by the manufacturer–and seeks to identify which consumers prefer DIY repairs, and under what conditions.

043-0588 Understanding the Value of Online Customer Reviews in a Two-Level Supply Chain

Yifan Dou, Assistant Professor, Beihang University, China
Jian Chen, Professor, Tsinghua University, China

In a single-manufacturer-single-retailer supply chain, while customer reviews update the product's perceived quality, they also induce changes in wholesale price which impose upstream pressures to the retailer. Surprisingly, we find that positive reviews may lead to lower supply chain profits, which suggests that double marginalization could result in inefficient overpricing.

043-0702 The Impact of Online Word-of-Mouth Dissemination on The Oligarch Seller's Selling Strategy

Mingxi Zhang, Student, Peking University, China
Ming Lei, Professor, Peking University, China
Xiaona Zheng, Associate Professor, Peking University, China

This paper builds a two-stage pricing model for an online oligarch seller who provides a durable goods. We find that with information gap becoming smaller gradually, the seller's optimal pricing strategy will usually experience three phrases sequentially: giving up incentive pricing, exerting incentive pricing, ceasing to incentive pricing.

358 Sunday, 04:30 PM - 06:00 PM, Spruce — *Track:* Revenue Management and Pricing
Session: Revenue Management Practice: Industry Panel
Chair(s): Pelin Pekgun

043-1644 Industry Panel: Revenue Management and Pricing

Pelin Pekgun, Assistant Professor, University of South Carolina, United States
Kathleen Mallery, Director Revenue Opt Planning and Dev, Carlson Rezidor Hotel Group, United States
Dev Koushik, Director of Revenue Optimization, InterContinental Hotels Groups, United States
Sharon Hormby, Senior Director, Total Yield Systems, Mariott International , United States

Innovative uses of revenue management as well as ongoing efforts and challenges in the hospitality industry will be discussed by industry panelists.

359 Sunday, 04:30 PM - 06:00 PM, Nat Hill — *Track:* Scheduling and Logistics
Session: Green Choices and Outsourcing Decisions
Chair(s): Yu Xia

043-0576 Green Design as a Competitive Tool in Supply Chain Competition

Yu Xia, Associate Professor, Northeastern University, United States
Chialin Chen, Associate Professor, Queens University, Canada

Green products are different in terms of their green quality levels. This paper studies the proper green quality level that a manufacturer should choose to compete in the market. It also investigates how green quality levels and product prices are influenced by the consumers' changing awareness and preference for green.

043-1524 Green Labeling and Carbon-Efficient Transportation

Yu Xia, Associate Professor, Northeastern University, United States
Xu Yang, Assistant Professor, San Jose State University, United States

Green labeling is known as an approach for companies to improve environmental performance to attract environmentally aware consumers. We examine under what conditions a company should pursue a green label. We also propose an analytical approach to determine the optimal green labeling levels to assist decision-making of policy makers.

043-1477 Achieving sustainability in hospitals operations through supply chain effectiveness

Gilbert Nyaga, Assistant Professor, Northeastern University, United States

As hospitals face increasing cost pressures, their focus on sustainable supply chain practices especially with regard to inventory and procurement operations is critical. This study examines data from a major New England hospital and identifies waste in its supply chain. The findings have important implications for sustainable healthcare supply chains.

Monday, 08:00 AM - 09:30 AM

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Monday, 08:00 AM - 09:30 AM, Salon A — *Track:* Behavioral Issues in Operations Management

Session: Behavioral Operations and Business Ethics

Chair(s): Cristiane Villar

043-0622 Integrating BOPS into OM Teaching Using a 'Fit-Feedback' Framework and Human Centered Design Tools

Joel Goldhar, Professor, Illinois Institute of Technology, United States
Arjun Chakravarti, Assistant Professor, Illinois Institute of Technology, United States
Kim Erwin, Assistant Professor, Illinois Institute of Technology, United States

Despite the recent increase in BOPS research, few efforts have been made to integrate Behavioral concepts, models and research results into OM teaching. We offer a set of concepts and tools from Social Psychology and Industrial Design; plus an example of an MBA OM Course that meets this objective.

043-1341 Quantitative Analysis: Friend or Foe of Business Ethics?

David Hollingworth, Associate Professor, University of North Dakota, United States

Business ethics scholars suggest that quantitative analysis can adversely affect ethical decision-making (Trevino and Nelson, 2011). Operations researchers reason that ethical considerations should be included in quantitative analyses (Brans and Gallo, 2007). This study investigates how quantitative analysis affects ethical decision making and is affected by organization ethical context.

043-1352 Behavioral Operations or Experimental Operations?

Janaina Siegler, Student, Fundacao Getulio Vargas, Brazil
Cristiane Villar, Student, Fundacao Getulio Vargas, Brazil

The human behavioral stream in OM has been grasping academics attention in last decade. However there is a lack of convergence of the concepts. Some researchers argue that it refers to Experimental Operations instead. This study aims to offer a greater discernment of the terms through a structured literature review.

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Monday, 08:00 AM - 09:30 AM, Salon B — *Track:* Healthcare Operations Management

Session: Hospital Performance

Chair(s): David Dobrzykowski

043-1302 Electronic Medical Records, Hospital Focus, and Performance: A Longitudinal Analysis of U.S. Hospitals

Xin Ding, Assistant Professor, University of Houston, United States
Xiaosong (David) Peng, Assistant Professor, University of Houston, United States
Sarv Devaraj, Professor, Notre Dame University, United States

Drawing on RBV and the notion of “focused factory”, this study examines the performance impacts of both EMR stage and the associated post-EMR experience, and how these impacts differ across hospitals with varying levels of focus. We observe interesting findings based on the longitudinal analysis of major hospitals from 2000-2009.

043-1584 Measuring Hospital Efficiency and Volume Flexibility

Eric Jack, Associate Professor, UAB, United States

This study investigates empirical relationships between efficiency and volume flexibility by comparing performance of hospitals based on size and types of ownership where relationships between system inputs (e.g., labor) and outputs (e.g., discharges and surgical procedures) are examined using DEA. Results suggest efficiency and flexibility vary by size and ownership.

043-0237 Path towards the Triple Aim: Evolution along Conformance and Experiential Quality Dimensions

Claire Senot, Student, Ohio State University, United States
Aravind Chandrasekaran, Assistant Professor, Ohio State University, United States
Peter Ward, Professor, Ohio State University, United States

U.S. hospitals are expected to deliver better care and better heath at a lower cost. To achieve this Triple Aim, hospitals need to improve along both conformance and experiential quality dimensions. We study the improvement path over 5 years of over 3000 U.S. acute care hospitals along both these dimensions.

043-0208 Antecedents of time-based competitive advantage in healthcare

David Dobrzykowski, Assistant Professor, University of Toledo, United States
Arash Azadegan, Assistant Professor, Rutgers University, United States

While the potential for process improvement in healthcare is posited to be substantial, translating operational initiatives into competitive advantage has proven thorny. Data from 302 hospitals supports relationships among key operational initiatives, patient care process improvement initiatives, and time-based competitive advantage. Important moderation relationships involving information technology are revealed.

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Monday, 08:00 AM - 09:30 AM, Salon C — *Track:* Sustainable Operations

Session: Environmental management systems and other environmental practices

Chair(s): Rosane Aparecida Battistelle

043-0181 The complementarity of the environmental practices adoption and its performance implications

Anwar Alsheyadi, Student, Nottingham University , United Kingdom
Luc Muyldermans, Associate Professor, Nottingham University , United Kingdom
Katri Karjalainen, Assistant Professor, Helsinki School of Economics, Finland

The interdependencies in the adoption of environmental practices have been widely recognized in the literature. However, much of the empirical studies have largely ignored this interdependence and its implications on firm performance. This study aims to address this research gap using data collected through a survey of 138 Omani firms.

043-1282 Barriers to the implementation of Environmental Management Systems in different industries

Allan Thomaz de Araújo, Student, Universidade Estadual Paulista Júlio de Mesquita Filho - UNESP, Brazil
Rosane Aparecida Battistelle, Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Otavio Oliveira, Professor, Universidade Estadual Paulista Júlio de Mesquita Filho - UNESP, Brazil

This paper is a literature review that aims to evaluate the barriers present in the implementation of environmental management systems in different sectors of industry worldwide and compare them with data from Brazilian industries. The publications were cataloged using information such as geographic location, industry sectors and barriers identified.

043-1285 Social supply chain sustainability practices and outcomes and the moderating effect of customer sustainability

Donna Marshall, Lecturer, University College Dublin, Ireland
Lucy McCarthy, Lecturer, University College Dublin, Ireland

This paper examines the relationship between customer sustainability orientation and social supply chain sustainability practices and outcomes. We use hierarchical regression to examine the relationship between practices and outcomes and how customer sustainability orientation moderates these.

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Monday, 08:00 AM - 09:30 AM, Salon D — *Track:* Sustainable Operations
Session: Topics in sustainable supply chain management - 1
Chair(s): João Amato Neto

043-1449 The Environmental Impact on The Formation of Agricultural Prices: A Study in Soybean Supply Chain In Brazil

Luciano Mazza, Assistant Professor, Fundação Carlos Alberto Vanzolini, Brazil
João Amato Neto, Professor, University of Sã£O Paulo, Brazil

This paper will investigate price formation on Brazilian Soybean supply chain, considering the environmental impact as additional cost. Two hypotheses are discussed: Is there difference in market price between the sustainability soybeans and traditional ones? If so, does highest price compensate amount of savings of natural related resources?

043-1220 Managing Sustainable Operations Across the Supply Chain

MohdNishat Faisal, Assistant Professor, Qatar University, Qatar

Sustainable operations are gaining prominence in the strategic landscape of the companies. But because of outsourcing a number of manufacturing activities, the challenge lies in managing sustainability of operations across the supply chain. This paper investigates issues related to managing sustainable operations and sustainability risks across the supply chain.

043-0842 Incorporating the organizational learning effect into Municipal Solid Waste recycling performance measurements

Dong-Shang Chang, Professor, National Central University, Taiwan, Republic of China
Wenrong Liu, Associate Professor, Feng Chia University, Taiwan, Republic of China
Li-Ting Yeh, Student, National Central University, Taiwan, Republic of China

The effect of organizational learning results in continuous improvement of organizational performance over time. This paper develops an approach to incorporate the cumulative organizational learning effect into data envelopment analysis model for investigating the impact of learning effect on the efficiency of Municipal Solid Waste recycling systems.

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Monday, 08:00 AM - 09:30 AM, Salon G — *Track:* Supply Chain Management
Session: Food Supply Chain
Chair(s): Cristiane Anacleto

043-1599 Model for quality management for producers of organic food: a case study

Cristiane Anacleto, Student, Universidade Federal De Santa Catarina, Brazil
Edson Paladini, Associate Professor, University Federal de Santa Catarina, Brazil

This study evaluated the quality management system of farms producing organic food located within the state of Sao Paulo, Brazil by a case study. A model proposed aligns the quality management process focused on the needs of consumers of organic food in nature.

043-1585 Influence of collaboration in the performance of the Brazilian organic coffee supply chain

Paolo Coti-Zelati, Student, Universidad Presbiteriana Mackenzie, Brazil
Roberto Moori, Professor, Universidad Presbiteriana Mackenzie, Brazil
Herbert Kimura, Associate Professor, Universidad Presbiteriana Mackenzie, Brazil

Based on an exploratory research, this study investigated the organic coffee supply chain in the Brazilian context. Results of interviews with 4 managers and questionnaires with 107 respondents suggest relevant relationships between supply chain management and collaboration and performance. However, no significant relationship was found between collaboration and performance.

043-1387 Scale efficiency analysis of logistic service providers (LSP) in Brazilian food supply chains

Carlos Ernani Fries, Associate Professor, Federal University of Santa Catarina, Brazil
Mônica Maria Luna, Associate Professor, Federal University of Santa Catarina, Brazil
Carolina Luisa Vieira, Student, Federal University of Santa Catarina, Brazil

The business size of LSP in food supply chains has followed the remarkable growth of agribusiness in Brazil. This study of the evolution of LSP scale efficiency shows that the vast majority of firms have operated with increasing returns to scale, which suggests room for further growth in this sector.

370 Monday, 08:00 AM - 09:30 AM, Salon H *Track:* Supply Chain Contracting
Session: Outsourcing Structures and Information Flow
Chair(s): Yulan Wang

043-0178 Bilateral Bargaining and Outsourcing Strategies in a Three-Tier Supply Chain

Yulan Wang, Assistant Professor, Hong Kong Polytechnic Univ, Hong Kong
Pengfei Guo, Assistant Professor, Hong Kong Polytechnic Univ, Hong Kong
Baozhuang Niu, Lecturer, Sun Yat-Sen University, China
Jeannette Song, Professor, Duke University Durham, United States

In a three-tier supply chain comprising an OEM, a CM and a supplier, there are two important questions for outsourcing strategies. The OEM needs to ask who should order and when to order. In this paper, We study these two questions under a cooperative game scheme, generalized Nash bargaining.

043-0179 Product Design Postponement in a Duopoly

Albert Ha, Professor, Hong Kong University of Science & Tech, Hong Kong
Stephen Shum, Assistant Professor, Hong Kong University of Science & Tech, Hong Kong
Tingting Xiao, Student, Hong Kong University of Science & Tech, Hong Kong

We investigate firms' product design postponement strategies under competition. To make postponement decisions, firms have to balance the benefits of resolving market uncertainty and enhancing design with the cost of losing first-mover advantage. We characterize the conditions under which one or both firms postpone design. We also conduct sensitivity analysis.

043-0269 Intertemporal Pricing and Return Policies for Strategic Consumers

Wenbo Cai , Assistant Professor, NJIT, United States
Ying-Ju Chen, Assistant Professor, UC Berkeley, United States

We develop a model that takes into account both consumer valuation uncertainty and strategic consumer behavior, and derive the optimal pricing and return policy for a retailer in a dynamic pricing framework. We identify three effects of a generous return policy on consumers who have heterogeneous valuations.

043-1249 Who benefits from joint forecast? The case of a trade association and a strategic manufacturer

Noam Shamir, Assistant Professor, Tel Aviv University, Israel
Hyoduk Shin, Assistant Professor, University of California San Diego, United States

We study the incentives of a group of retailers, organized as a trade-association, to share their forecast, when they source the product from a mutual manufacturer. We demonstrate that having better-forecast can make the retailers worse-off. We offer a few ways that can increase the efficiency of this supply-chain.

371 Monday, 08:00 AM - 09:30 AM, Salon I *Track:* Operations Management Practice
Session: At the Intersection of OM Academics and Practice - Models for High-Value Consulting Centers
Chair(s): Sanjay Ahire

043-1395 Education and Industry Solutions through University Outreach Problem Solving - the Alabama Productivity Center

David Miller, Professor, University of Alabama Tuscaloosa, United States

This presentation focuses on a model used successfully for 25 years to enrich the education of OM graduate students through applied research projects in consulting-like endeavors. The business model and structure will be presented along with lessons learned.

043-1267 Educating tomorrow's managers: a model for industry and academic programmatic collaboration

John Jensen, Professor, University of South Carolina, United States
Sanjay Ahire, Professor, University of South Carolina, United States

The GSCPM center at USC was designed to leverage the rich experiences of faculty interacting with industry to deliver programs that: focus on inter-organizational processes; balance strategic supply chain and operations design, with tactical execution; prepare graduates to implement process improvements; create a high-level improvement experience in partner organizations.

372 Monday, 08:00 AM - 09:30 AM, Salon J *Track:* Sustainable Operations
Session: Topics in sustainable operations management - 2
Chair(s): Norma Harrison

043-1113 Managing market turbulence: Organizational performance effects of customer integration in 3PLs

Chris Hemstrom, Student, Macquarie Graduate School of Management, Australia
Norma Harrison, Professor, Macquarie Graduate School of Management, Australia

This paper extends the research on customer integration and organizational performance by presenting a framework for sustainable performance in the presence of market turbulence, applying it to operations management, and tying customer integration research to the 3PL environment. SEM was used to test relationships between 3PL operations and these variables.

043-1381 The Network of Sustainable Operations

Cristina João, Student, Fundacao Getulio Vargas, Brazil
Renata Silva, Student, Fundacao Getulio Vargas, Brazil

This study investigates the evolution of scientific and networks between researchers and institutions that have published articles about sustainable operations. Papers published in POMS and EUROMA were investigated in the period of 2002 to 2012. Main results indicate the authors and institutions that have a central role in this network.

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Monday, 08:00 AM - 09:30 AM, Suites I
Track: Service Operations
Session: Service Operations Theory 2
Chair(s): Abraao Saraiva Junior

043-0372 Interfaces between servant process and service classification

Kleber Nobrega, Professor, Universidade Potiguar, Brazil
Adriano Israel Lopes, Senior Lecturer, Universidade Potiguar, Brazil

In Brazil, public employees are known as servers. This paper investigates the comprehension of these professionals about their job, confronting with the attributes defined in servant behavior researches. First results suggest a common sense for responsibility, welfare practices and initiative, but not much association with resignation and usefulness.

043-0863 The GMQA model and its adherence to some software development approaches

Rosangela Vanalle, Professor, Universidade Nove De Julho, Brazil
Gabriel Baptista, Assistant Professor, Universidade Nove De Julho, Brazil
José Salles, Professor, Universidade Nove De Julho, Brazil

Known software engineering models have suffered to attend cost, deadlines and functionalities. The GMQA Model (Brazilian Portuguese: Management, Measurement, Quality, and Documentation) is presented as an option based on performance measurement systems concepts. This paper describes the model and presents an adherence analysis to several approaches known in this industry.

043-1419 Method for determining contribution margin of engineering services with direct costs per unit variability

Cristiane Tabosa, Assistant Professor, Federal University of Ceará / Federal University of Semi-Arid, Brazil
Abraao Saraiva Junior, Assistant Professor, University of Sã£O Paulo, Brazil
Maxweel Rodrigues, Associate Professor, Federal University of Ceará, Brazil

This paper aims to propose a method to determine the contribution margins of engineering services in the civil construction industry taking into account the existence of direct costs per unit variability. To achieve this goal, an eight-step method is proposed and applied in a Brazilian engineering services company.

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Monday, 08:00 AM - 09:30 AM, Suites II
Track: Service Operations
Session: Service Quality
Chair(s): Youn Sung Kim

043-1225 The Effects of Airscape Change on Flight Attendants Satisfaction in the Korean Air Case

Youn Sung Kim, Professor, Inha University, Korea, Republic of (South Korea)

Using the airscape scale developed from the standpoint of flight attendants in the airline industry(Kim, et.al, 2011), we reveal the effects of airscape change on flight attendants satisfaction and work performance of national carriers(Korean Air). Outcomes associated with the Korean Air's A380 will be tested by employees survey.

043-0742 Quality based Organization of Knowledge in Service Delivery Systems

Vikram Jamwal, Sr. Scientist, TCS, India
Hema Meda, Scientist, TCS, India

In knowledge intensive services, human agents are the principal sources of service delivery. In this paper we argue that explicated operational knowledge in these services should be directly derived from the quality requirements of service delivery system. We present a framework to capture, organize, use and constantly improve such knowledge.

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Monday, 08:00 AM - 09:30 AM, Suites III
Track: Empirical Research in Operations Management
Session: Empirical Studies in Supply Chain Management I
Chair(s): Marcio Machado

043-1309 Operations management systems of aircraft maintenance companies

Marcio Machado, Professor, Instituto Tecnologico De Aeronautica, Brazil
Ligia Soto Urbina, Professor, Instituto Tecnologico De Aeronautica, Brazil

This study aims to assess the operations management systems of aircraft maintenance companies. To this objective, we conducted a survey of group of aircraft maintenance companies in Brazil. We identified seven factors among which two factors, handling maintenance manuals and communication in maintenance operations, were more relevant.

043-0849 Monitoring of Air Conditioning System in Trains of São Paulo Metro - an approach based on time series

João Chang Junior, Associate Professor, Centro Universitario Da Fei, Brazil
Cyro Albuquerque Neto, Associate Professor, Centro Universitario Da Fei, Brazil
Leandro Araújo Silva, Student, Centro Universitario Da Fei, Brazil

Since 2008, the trains of the São Paulo Metro started having problems and poor performance due to the high temperature of the refrigerant in the compressor discharge.The study objective is to predict failures by time series of temperature from econometric methods, before causing thermal discomfort in users and stops.

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Monday, 08:00 AM - 09:30 AM, Suites IV
Track: Healthcare Operations Management
Session: Hospital Admissions and Readmissions
Chair(s): Jonathan Helm

043-0466 When Waiting is Good: The Value of Coordination in a Discretionary Task Setting

Jillian Berry Jaeker, Student, Harvard University, United States
Anita Tucker, Associate Professor, Harvard University, United States

We create a generalized model of hospital admission decisions based on the effect of external influences on processing times. We then develop a set of principles for optimizing system resource utilization, including the value of coordination.

043-1132 Patient Admission Under Multiple Resource Constraints

Christiane Barz, Assistant Professor, University of California Los Angeles, United States
Kumar Rajaram, Professor, University of California Los Angeles, United States

We consider a patient admission problem to a hospital with multiple resource constraints (e.g. OR and beds) and a stochastic evolution of patient care requirements across multiple resources. We use approximate dynamic programming to maximize expected contribution net of overbooking costs.

043-0737 Effect of Readmission Rates on Marginal Cost in Hospital Services: An Econometric Analysis

Sriram Venkataraman, Student, Clemson University, United States
Aleda Roth, Professor, Clemson University, United States
Lawrence Fredendall, Professor, Clemson University, United States
Daniel Miller, Assistant Professor, Clemson University, United States

We investigate the effect of readmission rates on marginal cost of hospitals. We use secondary data derived from multiple sources, including Center for Medicare and Medicaid Services (CMS). This study investigates hospitals' marginal cost to evaluate whether hospitals are truly incentivized to reduce readmissions by Medicare's penalty system.

043-0273 Hospital Readmissions Forecasting and Optimizaion

Adel Alaeddini, Assistant Professor, University of Texas San Antonio, United States
Jonathan Helm, Assistant Professor, Indiana University, United States

Hospital readmission is a serious problem for the healthcare system, with 17% of Medicare patients readmitted within 30 days of discharge. This research develops new models to predict readmission on a patient-by-patient basis and use this prediction to optimize outpatient follow-up scheduling and resource allocation to reduce the readmission rate.

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Monday, 08:00 AM - 09:30 AM, Suites V — *Track:* Manufacturing Operations
Session: Manufacturing Strategy
Chair(s): Ravishankar Basappa

043-0248 Continuous Manufacturing and Product-Process Archetypes: Implications for Supply Network Design in Pharma

Tomás Harrington, Associate Professor, Cambridge University, United Kingdom

Continuous Manufacturing has enabled the potential for significant step changes within the Pharmaceutical industry. However, adoption rates remain in the range of 5%. This research examines the challenges and implications of the shift from ‘batch’ to ‘continuous’ processing in terms of e.g. product variety and supply network design.

043-1507 Competing through manufacturing: the four-stage model impact still makes sense?

Andrew Finger, Associate Professor, Universidade Federal de Alagoas, Brazil
Ely Paiva, Associate Professor, Fundacao Getulio Vargas, Brazil

The Hayes-Wheelwright framework is a well recognized model. This paper addresses how the manufacturing-base competitive advantage stage influences the characteristics of the stage 4 of the model and their effect on operational performance. The findings indicate different results on the effect for each of the characteristic on the performance variables.

043-0523 Multi-factor significant improvements derived adopting Yield Analysis in a typical Indian SME.

Ravishankar Basappa, Professor, BMS College of Engineering Bangalore, India
Guru datt, Student, BMS College of Engineering, India
Jayathirtha RV, Chief Executive Officer, Bulls Eye group, India

All organizations constantly strive to improve their key business parameters quality, cost, accuracy and delivery to survive and excel in the extremely competitive environment. Strategies include integrated approach in performance improvements. This simple productivity measure of yield analysis reveals multi-function improvements and gains in manufacturing envisaged through implementation of ERP.

043-0116 The effect of culture on the relationship between manufacturing strategy and manufacturing practices

Matteo Kalchschmidt, Associate Professor, Universita Degli Studi Di Bergamo, Italy
Andrea Mazzoleni, Student, University of Bergamo, Italy

The purpose of the article is to investigate the importance that differences in national culture characteristics have in explaining the relationship between competitive priorities and the investments in manufacturing practices. Empirical analyses are based in the GMRG dataset including data from 930 companies distributed in more than 15 countries

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Monday, 08:00 AM - 09:30 AM, Suites VI — *Track:* Product Innovation and Technology Management
Session: Product Development and Strategic Consumers
Chair(s): Tianxiao Gong Suri Gurumurthi

043-0443 The effects of customer orientation on service/product innovativeness and performance: a comparative study

Qiang Wang, Student, The Chinese University of Hong Kong, Hong Kong
Xiande Zhao, Professor, South China University of Technology, China
Chris Voss, Emeritus Professor, University of Warwick, United Kingdom

We empirically investigated the impact of customer orientation on service/product innovativeness and performance through the mediating effects of firm resources, based on data from service firms and manufacturers. Both the total effect and mediation effects were compared between two datasets. Findings contribute to understanding of service innovation versus manufacturing innovation.

043-1489 Optimal Pricing and Product Rollover Strategies in the Presence of Strategic Consumers

Tianxiao Gong, Student, Peking University, China

Lihua Chen, Professor, Peking University, China
Yingjie Lan, Assistant Professor, Peking University, China
Wei Wang, Student, Peking University, China

As frequent product introductions are common, consumers become more and more sophisticated when choosing the purchase time. In a game theory model, we show the consumers' purchase patterns and the firm's optimal rollover strategies largely depend on the distribution of consumers' valuation for quality and the speed of technical obsolescence.

043-0052 Collaborative Product Development (CPD): Exploring Contingencies in Supplier and Customer Involvement

Debasish Mallick, Associate Professor, University of St. Thomas, United States
Sohel Ahmad, Associate Professor, St.Cloud State University, United States
Changyue Luo, Assistant Professor, Governors State University, United States
Roger Schroeder, Retired, Tilburg University, United States

Inter-firm collaboration in new product development is becoming one of the major sources of competitive advantage for companies in almost every industrial sector. Using a cross industry survey of 317 new product development projects, we explore the factors affecting the relationship between supplier and customer involvement and CPD development performance.

043-1502 Flexibility and Risk Management in Collaborative Product Development

Suri Gurumurthi, Lecturer, University of North Carolina Chapel Hill, United States

Risk in collaborative innovation projects arises from multiple sources: uncertain task requirements, resource capabilities, inadequate partner investments, and eventually market demand. We measure the relative impact of these sources of risk on PD performance, and identify sound risk management principles that leverage and plan for flexibility in the PD environment.

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Monday, 08:00 AM - 09:30 AM, Silverton — *Track:* Learning and Knowledge Management in OM
Session: Learning Issues in Managing Projects
Chair(s): Adrian Choo

043-1298 Effects of Knowledge Sources and Problem Solving Processes on Incremental versus Radical Improvements

Rajiv Nag, Assistant Professor, Georgia State University, United States
Yusen Xia, Associate Professor, Georgia State University, United States
Adrian Choo, Assistant Professor, Georgia State University, United States

We develop a theoretical model with internal and external knowledge sources as inputs into problem solving processes, which subsequently lead to outputs of incremental and radical improvements. The model is tested via structural equation modeling using survey data that are collected from foundries from United States in 2006 and 2010.

043-0197 Leveraging mangers' tacit knowledge for quantifying criticality of materials in complex projects: Using Fuzzy

Vijaya Dixit, Student, Indian Institute of Management Lucknow, India
Rajiv Srivastava, Professor, Indian Institute of Management Lucknow, India
Atanu Chaudhuri, Assistant Professor, Indian Institute of Management Lucknow, India

This work captures tacit knowledge of managers to quantify criticality of items for materials management of complex projects. It defines two measures: Process and Control Criticality; identifies their input factors and calculates values. The proposed method uses Fuzzy set theory's linguistic 2-tuple, "If-Then" rules and linguistic quantifier guided order-weighted aggregation.

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Monday, 08:00 AM - 09:30 AM, Matchless — *Track:* Humanitarian Operations and Crisis Management
Session: HOCM: Best Paper Competition Award Session
Chair(s): Nezih Altay Kate Hughes

043-1681 HOCM Best Paper Award Presentation

Nezih Altay, Associate Professor, Depaul University, United States

The four finalists for the HOCM Track Best Paper Award will present their papers in this special session. The winner will be announced following the presentations.

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Monday, 08:00 AM - 09:30 AM, Gold Coin — *Track:* General Track
Session: General Topics-Empirical Studies and OM Applications in Asia
Chair(s): Tian Liu

043-0329 How to survive? Reflections of firms outsourcing to China

Nachiappan Subramanian, Associate Professor, University of Nottingham Ningbo China, Nottingham University Business School, China
Ruta Armalyte, Student, University of Nottingham Ningbo China, China

Globalisation has made outsourcing to low-cost countries fashionable but firms face several challenges that fade's outsourcing fashion. To survive in this outsourcing wave adopting proper sustainable strategy is needed. Using case studies and popular strategies this paper proposes sustainable competitive advantage framework to overcome quality issues in outsourcing to China.

043-0442 An Investigation of Factors Affecting Lean Implementation Success of Thai Logistics Companies

Prattana Punnakitikashem, Assistant Professor, Mahidol University, Thailand
Nattapan Buavaraporn, Lecturer, University of the Thai Chamber of Commerce, Thailand
Cheng-Chang Lin, Professor, National Cheng Kung University, Taiwan, Republic of China

The purpose of this paper is to investigate factors affecting the success of lean implementation in Thai logistics companies. Data was collected from the logistic companies implemented lean. Questionnaire survey was used to collect the data. Factor analysis and multiple regression analysis were conducted to understand the relationship between these factors and lean implementation success. The results of this study highlight the importance of leadership and management, financial capabilities, and organization culture as the critical success factors of lean implementation. The results also provide practitioners with guidelines in implementing lean more efficiently and effectively for enhancing their capability and competitiveness towards globalized market.

043-1562 Research on the relationship between dynamic evolution of inter-firm network and the transformation of hub firm

Di Ye, Student, Department of Management Science ,School of Management, China
Zhenyu Liu, Professor, Department of Management Science ,School of Management, China
Feng Lin, Professor, School of Management, HuaQiao University, China

Based on the empirical study of the industry cluster in eastern China, this paper study the interactive relationship between the inter-firm network dynamic evolution and the transformation of the hub firm in the inter-firm network. Suggestions are provided for the industry cluster to achieve upgrade and improve competitiveness.

043-0023 Travel time analysis for the SP-AS/RS

Tian Liu, Student, Huazhong University of Science & Technology, China

The paper presents a travel time model for the split-platform Automated Storage/Retrieval System (SP-AS/RS) which can handle heavier loads at a higher speed. And we analyze the optimal shape factor (b) to minimize the dual command (DC) cycle travel time under the I/O dwell-point policy.

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Monday, 08:00 AM - 09:30 AM, Mattie Silks *Track:* Scheduling and Logistics
Session: Selections from The Casebook in Supply Chain Management
Chair(s): Charles Munson

043-0669 Salvation Army - Dallas ARC

Arunachalam Narayanan, Assistant Professor, University of Houston, United States

The major at SA in Dallas is looking for innovative ways to increase their revenue or reduce their expenses to reach their goal. The goal is to generate enough revenue from their thrift stores to pay for the expense and send a portion to their head office for strategic initiatives.

043-0636 Case: Queuing at eCycle Services

Janice Eliasson, Lecturer, University of Calgary, Canada
Brent Snider, Lecturer, University of Calgary, Canada

eCycle Services, an e-waste recycler, wants to determine how hiring more workers at their loading dock would impact their costs and service level. Queuing theory and sensitivity analysis are used to analyze the situation. This 30-minute case is intended for in-class use.

043-0340 Multicriteria optimization of a long-haul routing and scheduling problem

Marie-Ève Rancourt, Assistant Professor, Universite Du Quebec A Montreal, Canada
Julie Paquette, Assistant Professor, Hec Montreal, Canada

We introduce a multi-objective vehicle routing and truck driver scheduling problem under the American hour-of-service regulations. We present and discuss the results of a tabu search algorithm that solves this problem and provides heuristic non-dominated solution sets from which tradeoffs between operating costs, driver inconvenience and fleet sizes are evaluated.

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Monday, 08:00 AM - 09:30 AM, Molly Brown *Track:* General Track
Session: General Topics - Empirical Studies II
Chair(s): Hamilton Pozo

043-1480 Environment-organization relationship under Operations perspective: theories and research

Cristiane Villar, Student, Fundacao Getulio Vargas, Brazil
Enise Santos, Professor, Universidade Federal De Sã£O Carlos, Brazil
Janaina Siegler, Student, Fundacao Getulio Vargas, Brazil
Renata Silva, Student, Fundacao Getulio Vargas, Brazil

This paper explores how the environment influences organizational operations and how it is influenced by it. Build upon Operations Strategy perspective, we developed deep literature review of the main theories. We organized the main arguments, assumptions and constructs in order to consolidate a framework able to support further studies.

043-0453 Business Processes with a Human Touch? Introducing the concept of Autonomation

Gustavo Rocha, Student, GMAP | UNISINOS, Brazil
Daniel Lacerda, Professor, GMAP | UNISINOS, Brazil
Luis Rodrigues, Professor, GMAP | UNISINOS, Brazil

Among the principal benefits of automation processes in Business are the work control and its reliability. Limited attention is given to the autonomy needed for the business processes to take decisions. This work, presents some initial thoughts on this issue, suggesting four stages for introducing Autonomation in Business Processes.

043-0608 Recurrent atmospheric discharges from port operations: a problem of environmental management in the port of Santos/BR

Hamilton Pozo, Associate Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil
Takeshy Tachizawa, Associate Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil
Roselaine Pozo, Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil

The objective of this research is to investigate the dimension of the problem of recurrent atmospheric emissions from the naval activity operations in the port of Santos/BR, considering the future movements of ships and trucks and the consequences of the probable expansion of the port. The results is cost-benefit.

043-0452 Systemic Method for Analyzing Complex Problems: Integrating the Thinking Process of the Theory of Constraints

Ana Francisco, Student, GMAP | UNISINOS, Brazil

Ana Severo, Student, GMAP | UNISINOS, Brazil
Luis Rodrigues, Professor, GMAP | UNISINOS, Brazil
Daniel Lacerda, Professor, GMAP | UNISINOS, Brazil

The Thinking Process of the Theory of Constraints and Systems Thinking seek to generate learning through complexity. As both techniques present limitations, a systemic approach is proposed integrating both theories in a synergic way, illustrated through an example in a Brazilian company, in the area of technical sales.

384 Monday, 08:00 AM - 09:30 AM, Spruce — *Track:* Healthcare Operations Management
Session: Prescription Management and Best Practices
Chair(s): Nitesh Chawla

043-1435 The Best Management Practices and Production Operations Related to Products and Processes of the Hospital

Beatriz Azevedo, Student, Universidade Federal De Santa Catarina, Brazil
Rolf Erdmann, Assistant Professor, Universidade Federal De Santa Catarina, Brazil

The aim of this paper is to analyze the best practices of production and operations management in hospitals. It is a literature of qualitative approach. We conclude that the adoption of lean principles, layout analysis, IT investment has contributed to the creation of competitive advantage and organizational sustainability.

043-0515 The Innovation Impact (InnPact) framework to describe and evaluate healthcare innovations

Jaume Ribera, Professor, I E S E, Spain
Magda Rosenmoller, Senior Lecturer, I E S E, Spain
Pablo Borras, Senior Consultant, Accenture, Spain

The healthcare sector is prone to innovating but it usually does it in a not very systematic way, limiting the learning and diffusion of good practices. The Impact framework provides a systematic way to describe and classify innovations. The paper summarizes the model and its application to four different cases.

043-1373 Lessons in Healthcare Operations for the Bottom of the Pyramid: Case from a Developing Country

Shirish C. Srivastava, Associate Professor, Hec Paris, France

In developing countries, private entrepreneurs often attempt at addressing the unmet healthcare needs of the population. We examine such a case of specialized ophthalmic healthcare service operations by a private enterprise in India. Lessons learned can serve to inform healthcare operations in developing as well as the developed world.

043-1610 Addressing Challenges in Prescription Management

Robert Thompson, Student, University of Notre Dame, United States
Nitesh Chawla, Associate Professor, University of Notre Dame, United States

Prescription management methods have failed at encouraging patients to adhere to medications. Between medication errors resulting from incomplete medication histories and poor patient adherence to drug regiments, significant challenges remain in prescription management. We develop a framework for medication management and adherence with patient monitoring.

385 Monday, 08:00 AM - 09:30 AM, Nat Hill — *Track:* Manufacturing Operations
Session: Operations Strategy
Chair(s): Yoon Hee Kim

043-0233 A Structured Approach for the Operationalization of Strategy Deployment (Hoshin Management)

Thomas Maschek, Student, Technical University Dortmund, Germany
Matthias Thurer, Student, Universidade Federal De Sã£O Carlos, Brazil

Strategy deployment (or Hoshin management) was identified as a key to operational success. Yet, it has received little attention in the literature. This study outlines a structured approach to deploy a firm's strategy providing a framework for the alignment of competitive priorities, operational goals and efforts towards continuous improvement.

043-1242 Operations Strategy Formation: Top-Down, Bottom-Up or Both?

Yoon Hee Kim, Assistant Professor, Western University, Canada
Fabian Sting, Assistant Professor, Erasmus University Rotterdam, Netherlands

This study explores the operations strategy formation from top-down and bottom-up perspectives with six cases from German manufacturers and empirically investigates the contingency factors under which firms use the top-down or the bottom-up approach using the longitudinal data collected in two waves of a survey from 47 U.S. manufacturing firms.

043-0232 Lean for small Make-to-Order Shops: Operationalizing Workload Control (WLC) using Spreadsheets

Matthias Thurer, Student, Universidade Federal De Sã£O Carlos, Brazil
Moacir Godinho Filho, Associate Professor, Universidade Federal De Sã£O Carlos, Brazil
Lawrence Fredendall, Professor, Clemson University, United States
Martin Land, Associate Professor, University of Groningen, Netherlands
Mark Stevenson, Lecturer, Lancaster University, United Kingdom

Lean has been one of the most important developments in OM. Yet, many make-to-order shops found lean's control techniques do not apply. WLC is a planning and control concept designed to address this need. A simple operationalization is presented underlining WLC's suitability for small shops with restricted financial resources.

386 Monday, 08:00 AM - 09:30 AM, Pomeroy — *Track:* Supply Chain Management
Session: Transportation Network and Supply Chain Management
Chair(s): Vanina Silva

043-1553 Direct flow between distribution centers for multi-objective supply chain design

Hertwin Popocatl, Professor, Universidad Politécnica de Tulancingo, Mexico
Elias Olivares Benítez, Professor, UPAEP University, Mexico
Enrique Gutierrez, Professor, Universidad Politécnica de Tulancingo, Mexico
Ruben Olvera, Professor, Universidad Politécnica de Tulancingo, Mexico

This paper reviews the problem of designing a multi-objective supply chain called Capacitated Fixed Cost Facility Location Problem with Transportation Choices (CFCLP-TC). We solve this multi-objective problem using the epsilon-constraint approach. The models with and without this transshipment feature are implemented in GAMS and solved with CPLEX.

043-0026 System Dynamics Simulation for analysing the Collaborative Maritime Transportation

Vanina Silva, Professor, Federal Technological University of Paraná, Brazil
Antonio Coelho, Professor, Federal University of Santa Catarina, Brazil
Antonio Novaes, Professor, Federal University of Santa Catarina, Brazil

In this paper is presented a System Dynamics model for analyzing the systemic effects arising from the collaboration policies among the manufacturing industries, which use the maritime transportation to execute the exportation. The bargain power is strengthen by the industries if acting allied to each other resulting in freight reduction.

043-1053 Determining the Optimal Supply Chain Policies for Puerto Rico's Dairy Industry

Lourdes Fernandez, Student, Mayaguez Campus, Puerto Rico
Betzabe Rodriguez, Assistant Professor, University of Puerto Rico, Puerto Rico

Puerto Rico's dairy industry is facing several challenges that limit its development. The objective of this research is to develop an optimization model to find the optimum percentage of cattle's production volume to retain at each echelon to maximize the profit of the entire supply chain.

043-0315 Supply Chain Tracking Technologies Adoption Trends in India

Sidhartha Padhi, Senior Lecturer, Swiss Federal Institute of Technology Zurich, Switzerland
Stephan Wagner, Professor, Swiss Federal Institute of Technology Zurich, Switzerland
Ingmar Zanger, Student, Swiss Federal Institute of Technology Zurich, Switzerland

This article focuses on supply chain tracking technology (SCTT) trends in India, where spending and usage of SCTTs is on an upswing. By means of a survey of 89 manufacturing companies selected across a spectrum of industries, we present the current trends and discuss their implications.

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Monday, 09:45 AM - 11:15 AM, Salon A — *Track:* Healthcare Operations Management

Session: Reusable vs. Disposible Medical Supplies and Emergency Response Planning

Chair(s): CIGDEM GURGUR

043-1475 A Decision Support System for Point of Dispensing Location and Capacity Optimization

Adrian Ramirez-Nafarrate, Assistant Professor, Instituto Tecnologico Autonomo De Mexico, Mexico
Joshua Lyon, Student, Arizona State University Tempe, United States
John Fowler, Professor, Arizona State University Tempe, United States
Ozgur Araz, Assistant Professor, University of Nebraska At Omaha, United States

Dispensing of mass prophylaxis can be critical to public health during emergency situations. Efficient operations involve complex decisions that must be made in a short period of time. This paper presents a decision support system to help public health officials respond to emergencies. Like with any optimization model, some constraints.

043-1633 Modeling the impact of catastrophic events on regional ambulatory operations

Rafael Diaz, Assistant Professor, Old Dominion University, United States
Joshua Behr, Associate Professor, Old Dominion University, United States
Bruce Britton, Associate Professor, Eastern Virginia Medical School, United States

Sudden disruptions stemming from catastrophic events affect non-urgent ambulatory venues shocking regional emergency services. Emergency Departments may experience congestion while compromising healthcare delivery. This research presents a model that quantifies these shocks and provides a means to test interventions that minimize adverse effects from these catastrophic events.

043-0277 Hospital Sustainability: Reducing Operating Room Waste with Reusable Medical Supplies and Instruments

Amy Sheikh, Lecturer, Rochester Michigan, United States
Kathryn Gorz, Student, Oakland University, United States
Izdihar Yono, Student, Oakland University, United States
Gene Fliedner, Associate Professor, Oakland University, United States

Recent years have witnessed a profound interest in healthcare waste given its impact on costs and the environment. This paper examines medical personnel perceptions regarding reusable medical supplies and instruments versus counterpart disposable items. A survey was used to assess the importance of seven decision making factors.

043-1577 Healthcare Product Procurement in Dual Supplied Systems

CIGDEM GURGUR, Associate Professor, Purdue University, United States

We consider supplier selection and quantity allocation decisions for a hospital that may purchase new products, as well as refurbished products. New products are more expensive, but can be delivered any time and in any quantity. Refurbished products have the same quality, but they are sold in bundles.

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Monday, 09:45 AM - 11:15 AM, Salon B — *Track:* Healthcare Operations Management

Session: Quality and Patient Satisfaction

Chair(s): Dana Johnson

043-0828 A consumer satisfaction research on Brazilian Health Plans

Claude Machline, Emeritus Professor, Fundacao Getulio Vargas, Brazil
Fernando Serson, Professor, Fundacao Getulio Vargas, Brazil
Adalberto Belluomini, Professor, Fundacao Getulio Vargas, Brazil

The paper describes the methodology used by the Brazilian regulatory agency to appraise the customer satisfaction with private health plans. The random sampling method, the questionnaire, the telephone interviewing, the data analysis are presented, and illustrated by a specific case, concerning a representative health plan covering almost a million beneficiaries.

043-0204 Innovation and Quality Health Services: a Brazilian Experience

Eric Dorion, Associate Professor, Universidade De Caxias Do Sul, Brazil
Cristine Nodari, Student, Universidade De Caxias Do Sul, Brazil
Pelayo Olea, Associate Professor, Universidade De Caxias Do Sul, Brazil
Eliana Severo, Student, Universidade De Caxias Do Sul, Brazil
Julio Guimaraes, Student, Universidade De Caxias Do Sul, Brazil

This article explores the possibility of integration between the themes of healthcare service and innovation through the analysis of the variables of quality in Primary Care. It highlights the debate about the quality of services, the health practices and the innovations implemented to stimulates quality in services and health practices.

043-0159 Patient Perceptions of Quality

Dana Johnson, Professor, Michigan Technological University, United States
Roberta Russell, Professor, Virginia Polytechnic Institute And State University, United States

Healthcare facilities in the U.S. are entering an era of increased oversight and heightened expectations concerning both reduced costs and measureable quality. This research examines customer satisfaction data from a community owned non-profit medical center in the Midwest and demonstrates how patient perceptions of quality can inform policy decisions.

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Monday, 09:45 AM - 11:15 AM, Salon C — *Track:* Supply Chain Risk Management

Session: Cross-Border Cross-Culture Risk Management

Chair(s): Morteza Pourakbar

043-1312 Managing Intellectual Property (IP) Risks Across the Supply Chain

MohdNishat Faisal, Assistant Professor, Qatar University, Qatar

Today, companies are dependent on outsourcing and thus the risk of losing control on IP are high. Qatar is investing hugely in research and development and in future companies are expected to develop innovative technology solutions. This paper investigates issues related to managing Intellectual Property risks across the supply chain.

043-0484 The cultural influences level of on business competitiveness for information security incidents preventing

Emerson Beneton, Student, Unip Universidade Paulista, Brazil
Ivanir Costa, Professor, Unip Universidade Paulista, Brazil
Amarildo Nogueira, Student, Unisantos, Brazil
Getulio Akabane, Student, CEETEPS/Anhanguera, Brazil

The research aims to examine companies located at ABC region in Brazil specially the level of cultural influences for information security incidents preventing. It is justified by increasing sophistication in the way of business decision making based on information technology aligned with tough competition observed into the present economic scenario.

043-0598 Towards a counterfeit-proof global supply chain

Morteza Pourakbar, Assistant Professor, Erasmus University Rotterdam, Netherlands
Rob Zuidwijk, Professor, Erasmus University Rotterdam, Netherlands

Counterfeiting activities are known as a major harm to legitimate supply chains. In this study, we investigate the role of customs authorities and rights-owners inthe fight against counterfeiting. In a game setting, we analyze how customs and rights-owner alliance results in lower level counterfeiting risks.

043-0662 ICT in Humanitarian Disaster Risk Management

Abhijeet Ghadge, Lecturer, Heriot-Watt University, United Kingdom
Kate Hughes, Lecturer, Heriot-Watt University, United Kingdom

With increased disasters disrupting the globe, it has become vital to proactively identify and mitigate the humanitarian risks. Modern Information and Communication Technologies (ICT) are being utilized for robust recovery. A conceptual model for identifying ICT-based risk strategies for different phases in disaster recovery has been developed using systems approach.

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Monday, 09:45 AM - 11:15 AM, Salon D — *Track:* Service Operations
Session: Service Recovery
Chair(s): Jin Qin

043-0240 What Can Service Recovery Do in Business-to-Business Service Failure? A Search-Engine-Optimization Case Study

Hua Yuan, Associate Professor, University of Electronic Science & Technology of China, China
Yu Qian, Associate Professor, University of Electronic Science & Technology of China, China
Yan Li, Assistant Professor, China University of Mining & Technology, China
Yao Zeng, Manager, Marketing Service Center of Baidu in Chengdu, China

Recovery of Search-Engine-Optimization (SEO) service failures is valuable to SEO providers. By the data mining methods, interactive effects of service failure types, customers' expectation, and recovery strategies on customers' satisfaction with service recovery are analyzed. Furthermore, communication strategy mixed with other ones is more effective in improving customers' satisfaction.

043-1607 The influence of customer oriented behavior on quality service

Maíra Araújo, Student, Univ Federal Do Rio Grande Do Norte, Brazil
José Alfredo Costa, Associate Professor, Univ Federal Do Rio Grande Do Norte, Brazil
Kleber Nobrega, Professor, Universidade Potiguar, Brazil

Nowadays, differentiation through service provision is a constant trend and culture oriented services a base for delivery of high quality services. Seeking to examine which factors contribute to the service quality perceived by customers, this work aims to study the relationship between the customer oriented behavior and service quality.

043-1199 Designed to Recover: NSD that Anticipates Service Recovery

Amitkumar Kakkad, Assistant Professor, University of San Diego, United States

This paper reviews the extant literature on service recovery, and proposes a framework for New Service Development that anticipates service failures and the resultant need for service recovery. Propositions are developed and validated through a case study of six service firms, and tested through a wide-scale survey of service firms.

043-0413 The Effects of E-tailing Service Recovery on E-WOM

Jin Qin, Associate Professor, University of Science & Technology, China
Fanfan Yang, Student, University of Science and Technology of China, China

Through analysis of data collected from online retailing customers who had experienced service failure and service recovery, we explore how service recovery affects customers' online word-of-mouth behavior. Results show that responsiveness, compensation and customer service recovery satisfaction directly impact positive online word-of-mouth.

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Monday, 09:45 AM - 11:15 AM, Salon G — *Track:* Operations Management Practice
Session: Teaching Techniques and Tools
Chair(s): Brian Clifford

043-1293 Process Modeling: a Decision-Oriented Approach

Günther Schuh, Professor, Aachen University, Germany
Till Potente, Assistant Professor, Aachen University, Germany
Thomas Froitzheim, Student, Aachen University, Germany

The process modeling method presented in this paper enables companies to capture, analyze and improve their business processes by using an easy, intuitive graphical notation. The method will explicitly focus on decision points instead of process activities.

043-1339 Teaching the Practice of POM in Europe: The case of the Euro´s banknotes and coins

Maria Alvarez Gil, Professor, Universidad Carlos III de Madrid, Spain, Spain

Last January 10, 2013, the new €5 banknote was unveiled. This new Europa series will be issued one day before the POM 2013 Conference takes place. This article uses the cases of the first and second series of the Euro as teaching materials for POM in Europe.

043-0583 Using Lean Value Stream mapping to align the work streams of two companies

Brian Clifford, Director of LMS Sustainability, Liberty Mutual Insurance, United States
Davood Golmohammadi, Assistant Professor, University of Massachusetts Boston, United States

Value Stream Mapping is a tool used in lean operations. Existing cases show how it has been used to launch a Lean organization or trigger large improvements, but there is little information on its use in merging the work streams of two discrete companies. This paper will discuss this approach.

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Monday, 09:45 AM - 11:15 AM, Salon H — *Track:* Operations Management Practice
Session: Increasing and Measuring Performance
Chair(s): John Tyworth

043-1364 Is There a Dark Side to Lead-Time Reliability?

John Tyworth, Professor, Penn State University University Park, United States

Conventional practice is to decrease lead time variability to decrease safety inventory and vice versa. Rigorous research has revealed a dark side to lead-time reliability that stands conventional practice on its head. This paper examines the significance of the dark-side phenomenon for operations practice.

043-0300 The Efficacy of Failure Modes Effect Analysis: A Longitudinal Study

Douglas Hales, Associate Professor, University of Rhode Island, United States
Dara Schniederjans, Assistant Professor, University of Rhode Island, United States
Bao JIANG, Associate Professor, Ocean University of China, China
Jian LI, Assistant Professor, Ocean University of China, China
Satya Chakravorty, Professor, Kennesaw State University, United States

FMEA is used in Six Sigma programs to identify process modes with the highest impact of faliure on the business. This study examines the efficacy of FMEA in achieveing bottom-line results over a ten-year period. It suggests FMEA is useful contextually, and not as a general tool across all business-processes.

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Monday, 09:45 AM - 11:15 AM, Salon J — *Track:* Supply Chain Contracting
Session: Models of Supply Chain Networks and Empirical Studies
Chair(s): Dong Li

043-0389 Pharmaceutical Supply Chain Networks with Outsourcing Under Price and Quality Competition

Anna Nagurney, Professor, University of Massachusetts Amherst, United States
Dong Li, Student, University of Massachusetts Amherst, United States
Ladimer Nagurney, Associate Professor, University of Hartford, United States

We present a pharmaceutical supply chain network model with outsourcing under price and quality competition in both equilibrium and dynamic versions. This model allows for the determination of the optimal product flows associated with in-house and outsourcing network activities and provides the firm with its optimal make-or-buy decisions and contractor-selections.

043-0286 Channel coordiantion with asymmetric cost information in assembly system

Fei Lv, Student, Huazhong University of Science & Technology, China
Shihua Ma, Professor, Huazhong University of Science & Technology, China

This paper studies an assembly system consists of two suppliers and one assembler, one supplier's production cost is private information. We design an optimal contract consisting of wholesale-price and subsidy to maximize the assembler's expected profit while ensuring the channel is coordinated, we also analyze the contract's properties.

043-1537 Reactive capacity of the supply chain: a Mexican industry empirical study

Miguel Estrada, Professor, Ipade Business School, Mexico

The development of reactive capacity of the supply chain has become one of the most important spearheads of Mexico's industrial strategy. This empirical study shows preliminary conclusions about the characteristics of this strategy related to the knowledge transfer, supply chain coordination and product design.

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Monday, 09:45 AM - 11:15 AM, Suites I — *Track:* Scheduling and Logistics
Session: Novel Issues in Logistics Management
Chair(s): Tharanga Rajapakshe

043-1559 Decentralized Bi-Criteria Timeshare Exchanges

Bahriye Cesaret, Student, University of Texas Dallas, United States
Milind Dawande, Professor, University of Texas Dallas, United States
Tharanga Rajapakshe, Assistant Professor, University of Florida, United States

Timeshare Exchange refers to the trading of vacation timeshare weeks among owners, so that they can interchange their respective vacation homes. We consider two objectives to capture the notions of "efficiency" and "fairness" in an exchange solution. Our main contribution is a polynomial-time, decentralized algorithm for "good" bicriteria solutions.

043-0528 Dedicated Transportation Subnetworks: Design, Analysis, and Insights

Tharanga Rajapakshe, Assistant Professor, University of Florida, United States
Milind Dawande, Professor, University of Texas Dallas, United States
Srinagesh Gavirneni, Associate Professor, Cornell University, United States
Chelliah Sriskandarajah, Professor, Texas A&M University College Station, United States

A Dedicated Subnetwork is a piece of the original shipping network that can be autonomously operated. This work provides a practical solution to the problem of identifying a "good" DSN that is suitable for outsourcing to one or more subcontractors, while incorporating several important real-world features and constraints.

043-0579 Integrality in Stochastic Inventory Models

Wei Chen, Student, Naveen Jindal School of Management, United States
Milind Dawande, Professor, Naveen Jindal School of Management, United States
Ganesh Janakiraman, Associate Professor, Naveen Jindal School of Management, United States

We study several dynamic, stochastic inventory control models with integer demands. Equivalent linear programs are formulated for the corresponding stochastic dynamic programs, and integrality results are derived based on the total unimodularity of the constraint matrices. A second approach based on multi-dimensional piecewise linearity to establish integrality is also presented.

043-1155 Planning Materials Supply and Full-load Delivery Operations

Xiajun Pan, Assistant Professor, University of Florida, United States
Anantaram Balakrishnan, Professor, University of Texas Austin, United States

Motivated by a practical problem facing materials supply planners for track maintenance projects at a leading rail freight company, this paper develops and solves an optimization model to support tactical sourcing and delivery decisions for bulk materials that are needed in full vehicle loads.

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Monday, 09:45 AM - 11:15 AM, Suites II — *Track:* General Track
Session: Applications in POM II
Chair(s): João Amato Neto

043-1324 To where OM reseach is going? Analysis of the intellectual structure of the field from 2000 to 2012.

Chen Yen-Tsang, Student, Fundacao Getulio Vargas, Brazil
Ronaldo Dultra-de-Lima, Student, Fundacao Getulio Vargas, Brazil
Daniel Galelli, Student, Fundacao Getulio Vargas, Brazil

Through co-citation approach, present study extended prior bibliometric studies and analyzed the evolution of the main research subjects in the Operations Management from 2000 to 2012. We found that the statistic methods and manufacturing strategy are still among the leading themes as suggested by Pilkington & Meredith (2009).

043-1136 Practice Operations Management: A theoretical approach

Allanna Dos Santos, Student, Sao Paulo State University - UNESP , Brazil
Juliana Egea, Student, Unesp Universidade Estadual Paulista, Brazil
Flavia Marchezano, Student, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil
Edvaldo José Scoton, Student, Unesp Universidade Estadual Paulista, Brazil
Rosane Aparecida Battistelle, Assistant Professor, Universidade Estadual Paulista Julio De Mesquita Filho - Unesp, Brazil

This work aims to show the importance of operations management in the business environment through management tools such as benchmarking, Empowerment, Core competences and Reengineering along the pluralities of researchers on this subject. The results demonstrate an incentive to practice as a method to achieve this success and competitiveness.

043-0251 Regional clusters development: a multi-dimensional map for strategic evaluation

João Amato Neto, Professor, University of São Paulo (USP), Brazil

The paper aims at presenting a set of matrices for the evaluation of organizational, environmental and other dimensions concerning the policies and strategies for regional clusters development.

043-1410 Using POC® decision support system in operations management teaching

Abraao Saraiva Junior, Assistant Professor, University of Sã£O Paulo, Brazil
Reinaldo da Costa, Associate Professor, University of Sã£O Paulo, Brazil
Helisson Ferreira, Consultant, PPE Engenheiros Associados, Brazil

The paper aims to discuss the use of decision support system POC® - Industrial Prices, Costs and Budgets - to support operations management teaching in the management accounting interface. To this end, we present a case study that illustrates the educational use of POC® in decision-making for a manufacturing operation.

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Monday, 09:45 AM - 11:15 AM, Suites III — *Track:* Empirical Research in Operations Management
Session: Empirical Studies in Supply Chain Management II
Chair(s): Mohammad Moshtari

043-0506 Factors Influencing Collaboration Among Humanitarian Organizations: An Empirical Analysis

Mohammad Moshtari, Student, University of Lugano, Switzerland

This paper investigates the factors influencing horizontal collaboration performance among international NGOs conducting humanitarian operations. Theories and concepts from interorganizational relationships constitute the study's theoretical foundation. Data are collected through a web-survey of NGOs in 25 countries, and I use structural equation modeling to examine the proposed hypotheses.

043-0904 Risk Management in the German Machine and Plant Manufacture Industry - Empirical Results

Lothar Czaja, Student, Friedrich-Alexander Universitat Erlangen-Nurnberg, Germany
Johannes Ixmeier, Student, Friedrich-Alexander Universitat Erlangen-Nurnberg, Germany
Kai-Ingo Voigt, Professor, Friedrich-Alexander Universitat Erlangen-Nurnberg, Germany

In our paper, we will introduce "Expediting" as companies´new practical approach to collect and manage information that is critical for the success of large-scale projects. In our presentation, we´re going to refer to three empirical studies, we conducted between 2006 and 2012 within the German Machine and Plant Manufacture Industry.

043-1333 Work Organization in agricultural research farm: a Case Study.

Maria Luz, Student, State University of Maringá-UEM, Brazil
Joao Camarotto, Professor, Universidade Federal de São Carlos, Brazil

The goal is to present the work organization units in an agricultural related to research, where scientific research is the central activity. The article contextualizes the work in models of contingency theory in relation to the types of production technology.

043-0072 Coffee cooperatives' operations management: relevant factors for production diversification

Fellipe Martins, Student, Universidade Nove De Julho, Brazil
Rosangela Vanalle, Professor, Universidade Nove De Julho, Brazil
Wagner Lucato, Professor, Universidade Nove De Julho, Brazil

Brazilian agricultural cooperatives experienced an unprecedented growth in the last decade leading to several diversification strategies. Studies in Brazil focus on the financial outcome of these but few empirical studies have been developed. This paper aims at comprehending strategies in operations management for production diversification in coffee cooperatives in Brazil.

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Monday, 09:45 AM - 11:15 AM, Suites IV — *Track:* Product Innovation and Technology Management
Session: Project Management
Chair(s): Wilson Roberto Zatti

043-1376 Project Management as a tool to implementing strategy

Orlando Cattini Junior, Associate Professor, Fundacao Getulio Vargas, Brazil
Wilson Roberto Zatti, Student, Fundacao Getulio Vargas, Brazil

The implementation of strategic actions in an organization becomes effective when strictly linked to projects and programs. This paper analyzes the models and processes for programs and project portfolios management, investigating possible inconsistencies between these models and what the executives responsible for implementation really use.

043-0657 New Product Development Process: a Survey of Best Practices

Rosalina Mesquita, Student, University of Sã£O Paulo, Brazil
João Furtado, Professor, University of Sã£O Paulo, Brazil

This paper aims to identify the main contributions of international and national studies investigating the relationship between organizational practices for new product development process (PDP) and the success with innovations. This study was made based on papers published in leading journals. The paper presents and compares the best practices identified.

043-1229 The importance of innovation management: an analysis of the main tools for managing innovation in companies

Paula Martins, Student, Universidade De Sao Paulo, Brazil
Luiz Alves, Professor, Universidade Federal De Juiz De Fora, Brazil
Guilherme Ary Plonski, Emeritus Professor, Universidade De Sao Paulo, Brazil

The adoption of practices to manage the innovation process can contribute to the transformation of ideas into social and economic value. The paper aims to discuss about innovation management in companies, providing a quantitative and qualitative study on the implementation and use of management tools in the innovation process.

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Monday, 09:45 AM - 11:15 AM, Suites V — *Track:* Manufacturing Operations
Session: Global Management and Lean Management
Chair(s): Luiz Alves

043-0058 Lean Production Applied in a large company in the Brazilian Printing Industry

Felipe Filgueiras, Student, Universidade Federal De Juiz De Fora, Brazil
Luiz Alves, Professor, Universidade Federal De Juiz De Fora, Brazil

The fundamentals of lean production and the results of applying these concepts in a large Brazilian printing company are presented. The results showed a significant reduction in process waste and a gain in productivity, with a notable reduction in operating costs and an increase in service agility

043-0249 Exploring Knowledge Transfer Configuration Profiles in Global Operations

Tomás Harrington, Associate Professor, Cambridge University, United Kingdom

This research looks to integrate network configuration and knowledge transfer (KT) approaches. The developed framework was tested using an in-depth case study involving three manufacturing networks at different stages of maturity. Current and future knowledge transfer configuration profiles and supporting KT mechanisms for each network are presented and discussed.

043-1318 Towards a model to understand risk factors that affect the lean production implementation process

Giuliano Marodin, Student, Universidade Federal Do Rio Grande Do Sul, Brazil
Tarcísio Saurin, Professor, Universidade Federal Do Rio Grande Do Sul, Brazil

This paper modeled the risks that affect the lean production implementation into three dimensions: Process management, Managerial support and Shop floor involvement. We did a factor analysis with the answers of 57 respondents from Brazilian companies and mini case study. The three categories and some relationships between risks were discussed.

043-1189 Critical Analysis of tangible gains post lean ERP Implementation in an Indian SME

Chilagondanahalli Gurudatt, Student, BMS College of Engineering, India
Ravishankar Basappa, Professor, BMS College of Engineering ,Bangalore, India, India
Jayathirtha RV, Chief Executive Officer, Bullseye Consulting, India

Global competition have impacted SMEs in manufacturing across the world and Lean manufacturing is considered as competitive solution for eliminating all wastes in the system and operate with minimal inventory. This paper will present a case study of tangible benefits of lean manufacturing post ERP implementation in an Indian SME.

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Monday, 09:45 AM - 11:15 AM, Suites VI — *Track:* Product Innovation and Technology Management

Session: Information Technology

Chair(s): Robbert Janssen

043-0225 The role of Information Technology on Durable and Perishable recall procedures

Jack Crumbly, Assistant Professor, Tuskegee University, United States

As recall procedures of firms impact choices of consumer decisions, it is important to review the effectiveness of recalls. The research looks to compare the effectiveness of recalls between durable and perishable goods. The authors will review information technology methods for both firms to compare the differences of both.

043-0632 Fairness and Value Appropriation in Logistics Alliances: a Case Study

Robbert Janssen, Student, Vrije Universiteit Amsterdam, Netherlands

Firms are not equally capable of capturing value from an alliance. The present research examines how fairness concerns may help appropriation of value jointly created in an alliance. Using case-study methodology, we investigate how justice theory influences partners' collaborative business models and outcomes of logistics alliances.

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Monday, 09:45 AM - 11:15 AM, Silverton — *Track:* Purchasing and Supply Management

Session: Supplier Development and Performance: Theory and Practice

Chair(s): Daesik Hur

043-1571 Understanding the Effects of Supplier Development Activities on Supplier Performance: A Process Perspective

Daesik Hur, Associate Professor, Yonsei University, Korea, Republic of (South Korea)
Hyojin Kim, Student, Yonsei University, Korea, Republic of (South Korea)

Grounded upon the knowledge-based view, the transaction cost economics, and the social exchange theory, this study proposes three variables that may mediate the relationship between supplier development and supplier performance improvement. The proposed hypotheses are tested using data collected from 162 tier-one suppliers of the 50 largest Korean firms.

043-0538 Supplier Development in Emerging Economies: The case of small suppliers

Jorge Rodriguez, Student, Esade Business School, Spain
Cristina Gimenez, Associate Professor, Esade Business School, Spain
Daniel Arenas, Professor, Esade Business School, Spain

Existing literature on SD doesn't adjust to the reality of emerging economies because firms operating there have to deal with small suppliers to secure their long-term needs. We analyzed two SD programs in Ecuador to identify the factors that explain the implementation of SD in the context of these economies.

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Monday, 09:45 AM - 11:15 AM, Gold Coin — *Track:* Service Operations

Session: Service Operations Application 2

Chair(s): Fazli Idris

043-1135 The impacts of technology on operational costs: The mediating role of integration

Fazli Idris, Associate Professor, National University of Malaysia (UKM), Malaysia
Nik Mutasim Nik A Rahman, Associate Professor, National University of Malaysia (UKM), Malaysia

The study aims is to determine the impact of operations technology via integration on operational costs. A model is proposed that links technology to operational costs and mediated by integration. Structural Equation Modeling (SEM) was employed to test the model, drawing on a sample of 254. Respondents are the operations managers or equivalent positions who work in service sectors in Malaysia. Data analysis revealed that, a significant relationship was found between the level of integration and costs. Further, technology significant impact on the cost was determined to be realized through the mediating role of integration.

043-1320 Lean Management: How Value Is Created, Captured and Distributed In A Service Environment

David Barrett, Student, Richard Ivey School of Business, Canada

This paper introduces a conceptual framework that separates the value creation, capture and distribution aspects of Lean Management in a service context and the moderating effects of lean implementation capabilities and environmental uncertainty on the beneficial outcomes achieved through Lean. Four hospital case studies are used to substantiate the framework.

043-1144 The impacts of team management on customer focus: The mediating role of operation flexibility

Fazli Idris, Associate Professor, National University of Malaysia (UKM), Malaysia
Nik Mutasim Nik A Rahman, Associate Professor, National University of Malaysia (UKM), Malaysia
Suhaimi Ahmad, Lecturer, National University of Malaysia (UKM), Malaysia

The study aims to determine the impact of service operations flexibility (OF) and team management (TM) on customer focus (CF). A mediation model is proposed that links team management (TM) to customer focus (CF) via operation flexibility (OF). Drawing on a sample of 243 of operations managers of various service sectors in South Africa, Structural Equation Modeling (SEM) was employed to test the linkage. It was found that a significant relationship was established between team management to customer focus via operations flexibility. Theoretical and managerial implications are offered to explain the results.

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Monday, 09:45 AM - 11:15 AM, Mattie Silks — *Track:* Scheduling and Logistics

Session: Field Research in Scheduling and Logistics

Chair(s): Paul Buijs

043-1206 Industry and academic perspectives on cross-docking decision support

Paul Buijs, Student, Rijksuniversiteit Groningen, Netherlands

Research has proposed decision support models for various cross-docking management aspects. While these models are developed for application in practice, knowledge on their actual usage in industry is missing. Our study aims to fill that gap by comparing the academic and industrial perspectives on decision support for cross-docking.

043-1463 Queue Balancing of Load and Expedition Service in a Cement Industry in Brazil

Eva Soares, Student, Universidade Federal Rural do Semiárido, Brazil
Izabelle Virgínia Paiva, Student, Universidade Federal Rural do Semiárido, Brazil
David Sena, Assistant Professor, Universidade Federal Rural do Semiárido, Brazil
Breno Carmo, Assistant Professor, Universidade Federal Rural do Semiárido, Brazil

The loading and weighing is one of distribution logistic process that shows the highest lead-times in cement industries, increasing the queues. Through a field research, this study aims to build scenarios to apply discrete simulation in order to solve this queue problem, by increasing products distribution process speed.

043-0611 Integration of small business operations as suppliers of the Brazilian automotive industry: an approach of mu

Hamilton Pozo, Associate Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil
Gilson Rigoni, Professor, Faccamp - Faculdade Campo Limpo Paulista, Brazil

We studied seventeen small part manufacturers for the Brazilian automotive industry in order to identify the factors which corroborate and strengthen their integration. The results allowed building a functional integration model, based on attributes and variables, that demonstrates the important role of purchasers and suppliers within the production chain.

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Monday, 09:45 AM - 11:15 AM, Spruce — *Track:* Revenue Management and Pricing

Session: Revenue Management and Pricing - 2

Chair(s): Osman Kazan

043-0572 Dynamic price promotion strategy: a copula approach

Kyoung-Kuk Kim, Assistant Professor, K A I S T, Korea, Republic of (South Korea)
Chi-Guhn Lee, Associate Professor, University of Toronto, Canada
Sunggyun Park, Student, K A I S T, Korea, Republic of (South Korea)

Retailers try to maximize their revenues through various promotional strategies. We study optimal pricing and discounting policy for retailers who employ such strategies. Our approach is to use a copula to model consumer responses and to use ADP for efficient computations. We present some numerical results with optimal policy structures.

043-0676 An analytic pricing model for peak-load reduction

Osman Kazan, Student, University of Texas Dallas, United States
Kathryn Stecke, Professor, University of Texas Dallas, United States
Metin Cakanyildirim, Associate Professor, University of Texas Dallas, United States

We develop a non-linear analytic model that determines optimal hourly electricity prices. First, effects of electricity pricing in a daily demand curve are investigated. Then, generation cost as a function of power demand is empirically calculated. Finally, an optimal pricing scheme is computed numerically to reduce peak-load.

043-0332 Combined Pricing and Inventory Management for Perishable Goods with Two-Period Life Time

Prashant Chintapalli, Student, Indian Institute of Management Bangalore, India

This paper addresses the problem of combined pricing and inventory management in the context of perishable goods. Retailer offers both new and old units for sale and consumers are free to pick either of them. Retailer has to optimally manage his pricing and ordering policies to maximize profits.

043-0631 The determinants of the transfer price calculation and their impact on supply chain decisions

Simon Templar, Lecturer, Cranfield University, United Kingdom

The focus of this research study is to identify the factors that determine the transfer price for an intermediate product, which is the subject of an internal supply chain transaction between business units of a multinational company. A conceptual model is presented and inferences for supply chain management are discussed.

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257 Saturday, 04:00 PM - 05:30 PM
305 Sunday, 09:45 AM - 11:15 AM

Acevedo, Mario
141 Saturday, 08:00 AM - 09:30 AM

Acimovic, Jason
21 Friday, 08:00 AM - 09:30 AM
95 Friday, 03:30 PM - 05:00 PM

Acquaah, Moses
165 Saturday, 10:00 AM - 11:30 AM

Adams, Elisabeth
349 Sunday, 04:30 PM - 06:00 PM

Aflaki, Arian
7 Friday, 08:00 AM - 09:30 AM

Aflaki, Sam
3 Friday, 08:00 AM - 09:30 AM

Agarwal, Anurag
97 Friday, 03:30 PM - 05:00 PM
123 Friday, 05:15 PM - 06:45 PM
192 Saturday, 12:30 PM - 02:00 PM
232 Saturday, 02:15 PM - 03:45 PM

Aghabeglou, Mohsen
293 Sunday, 09:45 AM - 11:15 AM

Agrali, Semra
218 Saturday, 02:15 PM - 03:45 PM

Agrawal, Anupam
74 Friday, 01:30 PM - 03:00 PM
193 Saturday, 12:30 PM - 02:00 PM
301 Sunday, 09:45 AM - 11:15 AM
307 Sunday, 09:45 AM - 11:15 AM

Agrawal, Narendra
177 Saturday, 10:00 AM - 11:30 AM

Agrawal, Vishal
81 Friday, 03:30 PM - 05:00 PM
83 Friday, 03:30 PM - 05:00 PM

Ahire, Sanjay
256 Saturday, 04:00 PM - 05:30 PM
371 Monday, 08:00 AM - 09:30 AM

Ahmad, Sohel
378 Monday, 08:00 AM - 09:30 AM

Ahmad, Suhaimi
407 Monday, 09:45 AM - 11:15 AM

Ahmadi, Reza
22 Friday, 08:00 AM - 09:30 AM

Ahn, Hyun-soo
219 Saturday, 02:15 PM - 03:45 PM

Ahuja, Vishal
288 Sunday, 09:45 AM - 11:15 AM

Aigbedo, Henry
31 Friday, 10:00 AM - 11:30 AM

Akabane, Getulio
22 Friday, 08:00 AM - 09:30 AM
173 Saturday, 10:00 AM - 11:30 AM
180 Saturday, 10:00 AM - 11:30 AM
316 Sunday, 02:45 PM - 04:15 PM
355 Sunday, 04:30 PM - 06:00 PM
393 Monday, 09:45 AM - 11:15 AM

Akalin, Gurkan
173 Saturday, 10:00 AM - 11:30 AM

Akcay, Yalcin
166 Saturday, 10:00 AM - 11:30 AM

Akkas, Arzum
297 Sunday, 09:45 AM - 11:15 AM

Akutsu, Jorge
290 Sunday, 09:45 AM - 11:15 AM

Alaeddini, Adel
376 Monday, 08:00 AM - 09:30 AM

Alba, Constantin
75 Friday, 01:30 PM - 03:00 PM

Albuquerque Neto, Cyro
375 Monday, 08:00 AM - 09:30 AM

Alem, Douglas
354 Sunday, 04:30 PM - 06:00 PM

Alev, Isil
81 Friday, 03:30 PM - 05:00 PM
133 Saturday, 08:00 AM - 09:30 AM

Alexander, Benjamin
191 Saturday, 12:30 PM - 02:00 PM

Alizamir, Saed
236 Saturday, 04:00 PM - 05:30 PM

Allen, Ann
7 Friday, 08:00 AM - 09:30 AM

Allon, Gad
306 Sunday, 09:45 AM - 11:15 AM

Almada-Lobo, Bernardo
354 Sunday, 04:30 PM - 06:00 PM

Almeida, Julio
134 Saturday, 08:00 AM - 09:30 AM

Aloysius, John
235 Saturday, 04:00 PM - 05:30 PM

Alptekinoglu, Aydin
48 Friday, 10:00 AM - 11:30 AM

Alsheyadi, Anwar
367 Monday, 08:00 AM - 09:30 AM

Altay, Nezih
59 Friday, 01:30 PM - 03:00 PM
111 Friday, 05:15 PM - 06:45 PM
138 Saturday, 08:00 AM - 09:30 AM
380 Monday, 08:00 AM - 09:30 AM

Alvarez Gil, Maria
134 Saturday, 08:00 AM - 09:30 AM
395 Monday, 09:45 AM - 11:15 AM

Alves, Luiz
144 Saturday, 08:00 AM - 09:30 AM
402 Monday, 09:45 AM - 11:15 AM
403 Monday, 09:45 AM - 11:15 AM

Amato, Lucas
341 Sunday, 04:30 PM - 06:00 PM

Amato Neto, João
110 Friday, 05:15 PM - 06:45 PM
341 Sunday, 04:30 PM - 06:00 PM
368 Monday, 08:00 AM - 09:30 AM
400 Monday, 09:45 AM - 11:15 AM

Amaya, Johanna
189 Saturday, 12:30 PM - 02:00 PM
243 Saturday, 04:00 PM - 05:30 PM

Amjed, Tayyab
238 Saturday, 04:00 PM - 05:30 PM

Amoako-Gyampah, Kwasi
165 Saturday, 10:00 AM - 11:30 AM

Amorim, Pedro
354 Sunday, 04:30 PM - 06:00 PM

Amornpetchkul, Thunyarat
281 Sunday, 08:00 AM - 09:30 AM

Anacleto, Cristiane
345 Sunday, 04:30 PM - 06:00 PM
369 Monday, 08:00 AM - 09:30 AM

Anand, Gopesh
63 Friday, 01:30 PM - 03:00 PM
249 Saturday, 04:00 PM - 05:30 PM

Ancarani, Alessandro
79 Friday, 03:30 PM - 05:00 PM
183 Saturday, 12:30 PM - 02:00 PM

Anderson, Chris
19 Friday, 08:00 AM - 09:30 AM
56 Friday, 01:30 PM - 03:00 PM

82 Friday, 03:30 PM - 05:00 PM

Anderson, David

80 Friday, 03:30 PM - 05:00 PM
334 Sunday, 02:45 PM - 04:15 PM

Anderson, Edward

145 Saturday, 08:00 AM - 09:30 AM
197 Saturday, 12:30 PM - 02:00 PM
249 Saturday, 04:00 PM - 05:30 PM
261 Sunday, 08:00 AM - 09:30 AM

Andrade, Regiane

160 Saturday, 10:00 AM - 11:30 AM

Andrade, Valéria

240 Saturday, 04:00 PM - 05:30 PM

Andrews, Matthew

101 Friday, 03:30 PM - 05:00 PM

Andritsos, Dimitrios

297 Sunday, 09:45 AM - 11:15 AM

Angelis, John

170 Saturday, 10:00 AM - 11:30 AM

Anh, Phan

325 Sunday, 02:45 PM - 04:15 PM

Ansaripoor, Amir Hossein

328 Sunday, 02:45 PM - 04:15 PM

Antonio, Leite

316 Sunday, 02:45 PM - 04:15 PM

Antreter, Ferenc

161 Saturday, 10:00 AM - 11:30 AM

Anzilotti, Kert

334 Sunday, 02:45 PM - 04:15 PM

April, Jay

331 Sunday, 02:45 PM - 04:15 PM

Apte, Aruna

190 Saturday, 12:30 PM - 02:00 PM

Apte, Uday

88 Friday, 03:30 PM - 05:00 PM

Aral, Karca

3 Friday, 08:00 AM - 09:30 AM
288 Sunday, 09:45 AM - 11:15 AM

Araujo, Juliano

110 Friday, 05:15 PM - 06:45 PM

Araújo, Maíra

394 Monday, 09:45 AM - 11:15 AM

Araújo Silva, Leandro

375 Monday, 08:00 AM - 09:30 AM

Araz, Ozgur

391 Monday, 09:45 AM - 11:15 AM

Arenas, Daniel

405 Monday, 09:45 AM - 11:15 AM

Arend, Richard

170 Saturday, 10:00 AM - 11:30 AM

Argon, Nilay

106 Friday, 05:15 PM - 06:45 PM
184 Saturday, 12:30 PM - 02:00 PM

Arikan, Mazhar

35 Friday, 10:00 AM - 11:30 AM

Armalyte, Ruta

381 Monday, 08:00 AM - 09:30 AM

Aron, Ravi

327 Sunday, 02:45 PM - 04:15 PM

Aros, Felipe

189 Saturday, 12:30 PM - 02:00 PM

Aros-Vera, Felipe

189 Saturday, 12:30 PM - 02:00 PM
243 Saturday, 04:00 PM - 05:30 PM

Arroyo-Lopez, Maria del Pilar

230 Saturday, 02:15 PM - 03:45 PM

Arthanari, Tiru

162 Saturday, 10:00 AM - 11:30 AM

Aschauer, Gerald

158 Saturday, 10:00 AM - 11:30 AM

Ashby, Alison

328 Sunday, 02:45 PM - 04:15 PM

Ashley, Kate

73 Friday, 01:30 PM - 03:00 PM

Asian, Sobhan

225 Saturday, 02:15 PM - 03:45 PM

Ata, Baris

35 Friday, 10:00 AM - 11:30 AM
133 Saturday, 08:00 AM - 09:30 AM

Atan, Zumbul

121 Friday, 05:15 PM - 06:45 PM

Atasu, Atalay

81 Friday, 03:30 PM - 05:00 PM
133 Saturday, 08:00 AM - 09:30 AM

Atkins, Derek

10 Friday, 08:00 AM - 09:30 AM

Auler, Daniel

347 Sunday, 04:30 PM - 06:00 PM

Aviles-Gonzalez, Jonnatan

250 Saturday, 04:00 PM - 05:30 PM

Axsater, Sven

198 Saturday, 12:30 PM - 02:00 PM

Aydas, Osman

59 Friday, 01:30 PM - 03:00 PM

Aydin, Burcu

276 Sunday, 08:00 AM - 09:30 AM

Aydinliyim, Tolga

6 Friday, 08:00 AM - 09:30 AM

Ayeni, Amidu

60 Friday, 01:30 PM - 03:00 PM

Azadegan, Arash

366 Monday, 08:00 AM - 09:30 AM

Azevedo, Beatriz

179 Saturday, 10:00 AM - 11:30 AM
384 Monday, 08:00 AM - 09:30 AM

B

Backhouse, Christopher

252 Saturday, 04:00 PM - 05:30 PM

Badru, Fatai

60 Friday, 01:30 PM - 03:00 PM

Bagchi, Tapan

276 Sunday, 08:00 AM - 09:30 AM

Baghersad, Milad

242 Saturday, 04:00 PM - 05:30 PM

Bailey, Jennifer

170 Saturday, 10:00 AM - 11:30 AM
197 Saturday, 12:30 PM - 02:00 PM

Baker, Kenneth

180 Saturday, 10:00 AM - 11:30 AM

Balakrishnan, Anantaram

399 Monday, 09:45 AM - 11:15 AM

Balakrishnan, Jaydeep

273 Sunday, 08:00 AM - 09:30 AM

Balasubramanian, Hari

116 Friday, 05:15 PM - 06:45 PM

Ball, George

63 Friday, 01:30 PM - 03:00 PM

Ball, Michael

178 Saturday, 10:00 AM - 11:30 AM

Banerjee, Sumitro

81 Friday, 03:30 PM - 05:00 PM

Bansal, Saurabh

125 Friday, 05:15 PM - 06:45 PM
157 Saturday, 10:00 AM - 11:30 AM
192 Saturday, 12:30 PM - 02:00 PM
203 Saturday, 12:30 PM - 02:00 PM
354 Sunday, 04:30 PM - 06:00 PM

Baptista, Elesandro

187 Saturday, 12:30 PM - 02:00 PM

Baptista, Gabriel

373 Monday, 08:00 AM - 09:30 AM

Barber, Elizabeth

85 Friday, 03:30 PM - 05:00 PM

Barbieri, Luciana Aparecida

264 Sunday, 08:00 AM - 09:30 AM

Bard, Jonathan

204 Saturday, 12:30 PM - 02:00 PM

Barreiros, Reginaldo

217 Saturday, 02:15 PM - 03:45 PM

Barrett, David

407 Monday, 09:45 AM - 11:15 AM

Bartezzaghi, Emilio

93 Friday, 03:30 PM - 05:00 PM

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Barton, Harry
4 Friday, 08:00 AM - 09:30 AM
61 Friday, 01:30 PM - 03:00 PM
82 Friday, 03:30 PM - 05:00 PM

Barz, Christiane
376 Monday, 08:00 AM - 09:30 AM

Basappa, Ravishankar
188 Saturday, 12:30 PM - 02:00 PM
377 Monday, 08:00 AM - 09:30 AM
403 Monday, 09:45 AM - 11:15 AM

Bassamboo, Achal
306 Sunday, 09:45 AM - 11:15 AM

Basso, Leonardo
40 Friday, 10:00 AM - 11:30 AM
231 Saturday, 02:15 PM - 03:45 PM

Bastida Escamilla, Eduardo
125 Friday, 05:15 PM - 06:45 PM

Batista, Joao
355 Sunday, 04:30 PM - 06:00 PM

Batistela, Airton
11 Friday, 08:00 AM - 09:30 AM
93 Friday, 03:30 PM - 05:00 PM

Batra, Rishtee
320 Sunday, 02:45 PM - 04:15 PM

Batt, Robert
227 Saturday, 02:15 PM - 03:45 PM
246 Saturday, 04:00 PM - 05:30 PM

Battistella, Cinzia
41 Friday, 10:00 AM - 11:30 AM

Battistelle, Rosane Aparecida
290 Sunday, 09:45 AM - 11:15 AM
316 Sunday, 02:45 PM - 04:15 PM
367 Monday, 08:00 AM - 09:30 AM
400 Monday, 09:45 AM - 11:15 AM

Batur, Demet
344 Sunday, 04:30 PM - 06:00 PM

Baumann, Philipp
244 Saturday, 04:00 PM - 05:30 PM

Bayraktar, Zikri
166 Saturday, 10:00 AM - 11:30 AM

Behr, Joshua
112 Friday, 05:15 PM - 06:45 PM
391 Monday, 09:45 AM - 11:15 AM

Beil, Damian
219 Saturday, 02:15 PM - 03:45 PM

Bellamy, Marcus
193 Saturday, 12:30 PM - 02:00 PM

Bellos, Ioannis
29 Friday, 10:00 AM - 11:30 AM
83 Friday, 03:30 PM - 05:00 PM
248 Saturday, 04:00 PM - 05:30 PM

Belluomini, Adalberto
392 Monday, 09:45 AM - 11:15 AM

Bendoly, Elliot
75 Friday, 01:30 PM - 03:00 PM
196 Saturday, 12:30 PM - 02:00 PM
261 Sunday, 08:00 AM - 09:30 AM
287 Sunday, 09:45 AM - 11:15 AM

Benedettini, Ornella
179 Saturday, 10:00 AM - 11:30 AM

Beneton, Emerson
173 Saturday, 10:00 AM - 11:30 AM
393 Monday, 09:45 AM - 11:15 AM

Bengtsson, Lars
280 Sunday, 08:00 AM - 09:30 AM

Benjaafar, Saif
172 Saturday, 10:00 AM - 11:30 AM

Benjamim, Rommel
108 Friday, 05:15 PM - 06:45 PM

Benton, WC
257 Saturday, 04:00 PM - 05:30 PM

Beresford, Anthony
60 Friday, 01:30 PM - 03:00 PM
85 Friday, 03:30 PM - 05:00 PM

Berling, Peter
264 Sunday, 08:00 AM - 09:30 AM

Berling, Peter
302 Sunday, 09:45 AM - 11:15 AM

Bernabe Loranca, María Beatriz
305 Sunday, 09:45 AM - 11:15 AM

Bernstein, Fernando
69 Friday, 01:30 PM - 03:00 PM

Berry Jaeker, Jillian
314 Sunday, 02:45 PM - 04:15 PM
376 Monday, 08:00 AM - 09:30 AM

Bertazzi, Luca
95 Friday, 03:30 PM - 05:00 PM

Besiou, Maria
7 Friday, 08:00 AM - 09:30 AM
215 Saturday, 02:15 PM - 03:45 PM

Best, Tom
106 Friday, 05:15 PM - 06:45 PM

Better, Marco
279 Sunday, 08:00 AM - 09:30 AM

Bhansali, Neera
288 Sunday, 09:45 AM - 11:15 AM

Bhaskaran, Sreekumar
73 Friday, 01:30 PM - 03:00 PM
170 Saturday, 10:00 AM - 11:30 AM

Bhattacharya, Sourabh
168 Saturday, 10:00 AM - 11:30 AM
212 Saturday, 02:15 PM - 03:45 PM

Bhattacharya, Sourabh
265 Sunday, 08:00 AM - 09:30 AM
292 Sunday, 09:45 AM - 11:15 AM

Bian, Yiwen
186 Saturday, 12:30 PM - 02:00 PM

Bianchi de Aguiar, Teresa
177 Saturday, 10:00 AM - 11:30 AM

Bianchini, Cassandra
271 Sunday, 08:00 AM - 09:30 AM

Bichescu, Bogdan
262 Sunday, 08:00 AM - 09:30 AM

Bichueti, Roberto
264 Sunday, 08:00 AM - 09:30 AM
290 Sunday, 09:45 AM - 11:15 AM

Bijvank, Marco
125 Friday, 05:15 PM - 06:45 PM
198 Saturday, 12:30 PM - 02:00 PM

Bilgic, Taner
144 Saturday, 08:00 AM - 09:30 AM

Biller, Bahar
117 Friday, 05:15 PM - 06:45 PM
146 Saturday, 08:00 AM - 09:30 AM

Bilolikar, Vijay
270 Sunday, 08:00 AM - 09:30 AM

Birge, John
68 Friday, 01:30 PM - 03:00 PM
288 Sunday, 09:45 AM - 11:15 AM
332 Sunday, 02:45 PM - 04:15 PM

Bischak, Diane
183 Saturday, 12:30 PM - 02:00 PM

Bishop, Debra
16 Friday, 08:00 AM - 09:30 AM

Bisi, Arnab
91 Friday, 03:30 PM - 05:00 PM
224 Saturday, 02:15 PM - 03:45 PM

Bjarnadottir, Margret
246 Saturday, 04:00 PM - 05:30 PM

Blackburn, Joseph
159 Saturday, 10:00 AM - 11:30 AM

Blake, Roger
183 Saturday, 12:30 PM - 02:00 PM

Blanco, Edgar
158 Saturday, 10:00 AM - 11:30 AM
328 Sunday, 02:45 PM - 04:15 PM

Blass, Vered
133 Saturday, 08:00 AM - 09:30 AM

Blome, Constantin
39 Friday, 10:00 AM - 11:30 AM
280 Sunday, 08:00 AM - 09:30 AM
325 Sunday, 02:45 PM - 04:15 PM

Bockstedt, Jesse
196 Saturday, 12:30 PM - 02:00 PM

Bode, Christoph
20 Friday, 08:00 AM - 09:30 AM
43 Friday, 10:00 AM - 11:30 AM
271 Sunday, 08:00 AM - 09:30 AM

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bodea, Tudor
306 Sunday, 09:45 AM - 11:15 AM

Bohn, Roger
223 Saturday, 02:15 PM - 03:45 PM
353 Sunday, 04:30 PM - 06:00 PM

Boleslavsky, Raphael
150 Saturday, 08:00 AM - 09:30 AM

Bölsche, Dorit
60 Friday, 01:30 PM - 03:00 PM

Boone, Tonya
320 Sunday, 02:45 PM - 04:15 PM

Bordoloi, Sanjeev
321 Sunday, 02:45 PM - 04:15 PM

Borras, Pablo
384 Monday, 08:00 AM - 09:30 AM

Bosco, Adamo
95 Friday, 03:30 PM - 05:00 PM

Bosman, Joost
42 Friday, 10:00 AM - 11:30 AM

Boter, Jaap
357 Sunday, 04:30 PM - 06:00 PM

Boyaci, Tamer
69 Friday, 01:30 PM - 03:00 PM
149 Saturday, 08:00 AM - 09:30 AM

Boyer, Kenneth
153 Saturday, 08:00 AM - 09:30 AM
200 Saturday, 12:30 PM - 02:00 PM
275 Sunday, 08:00 AM - 09:30 AM
327 Sunday, 02:45 PM - 04:15 PM

Bozer, Yavuz
247 Saturday, 04:00 PM - 05:30 PM

Bradley, Randy
262 Sunday, 08:00 AM - 09:30 AM

Bradt, Steve
38 Friday, 10:00 AM - 11:30 AM

Braga, Ana Carolina
40 Friday, 10:00 AM - 11:30 AM

Bray, Robert
297 Sunday, 09:45 AM - 11:15 AM

Brito, Luiz
98 Friday, 03:30 PM - 05:00 PM
162 Saturday, 10:00 AM - 11:30 AM

Brito Jr, Irineu
163 Saturday, 10:00 AM - 11:30 AM

Britto, Rodrigo
295 Sunday, 09:45 AM - 11:15 AM

Britton, Bruce
391 Monday, 09:45 AM - 11:15 AM

Brock, Vitor
67 Friday, 01:30 PM - 03:00 PM
264 Sunday, 08:00 AM - 09:30 AM

Broekhuis, Manda
80 Friday, 03:30 PM - 05:00 PM

Brown, Alex
298 Sunday, 09:45 AM - 11:15 AM

Brun, Sergio Adelar
11 Friday, 08:00 AM - 09:30 AM
93 Friday, 03:30 PM - 05:00 PM
119 Friday, 05:15 PM - 06:45 PM

Buavaraporn, Nattapan
381 Monday, 08:00 AM - 09:30 AM

Buganza, Tommaso
93 Friday, 03:30 PM - 05:00 PM

Buijs, Paul
408 Monday, 09:45 AM - 11:15 AM

Burggräf, Peter
273 Sunday, 08:00 AM - 09:30 AM
326 Sunday, 02:45 PM - 04:15 PM

Burns, Laird
265 Sunday, 08:00 AM - 09:30 AM

Butler, John
294 Sunday, 09:45 AM - 11:15 AM

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Cagliano, Raffaella
341 Sunday, 04:30 PM - 06:00 PM

Cai, Gangshu
19 Friday, 08:00 AM - 09:30 AM
123 Friday, 05:15 PM - 06:45 PM
139 Saturday, 08:00 AM - 09:30 AM
147 Saturday, 08:00 AM - 09:30 AM
307 Sunday, 09:45 AM - 11:15 AM

Cai, Wenbo
203 Saturday, 12:30 PM - 02:00 PM

Cai , Wenbo
370 Monday, 08:00 AM - 09:30 AM

Cakanyildirim, Metin
100 Friday, 03:30 PM - 05:00 PM
410 Monday, 09:45 AM - 11:15 AM

Calmon, Andre
143 Saturday, 08:00 AM - 09:30 AM

Camargo, Luis Felipe
273 Sunday, 08:00 AM - 09:30 AM

Camargo, Ricardo
9 Friday, 08:00 AM - 09:30 AM

Camarotto, Joao
287 Sunday, 09:45 AM - 11:15 AM
345 Sunday, 04:30 PM - 06:00 PM
401 Monday, 09:45 AM - 11:15 AM

Camdereli, Almula
177 Saturday, 10:00 AM - 11:30 AM

Campbell, Ann
102 Friday, 03:30 PM - 05:00 PM

Caniato, Federico
136 Saturday, 08:00 AM - 09:30 AM

Cao, Guangming
326 Sunday, 02:45 PM - 04:15 PM

Cao, Mei
220 Saturday, 02:15 PM - 03:45 PM

Cao, Qingning
203 Saturday, 12:30 PM - 02:00 PM

Capar, Ibrahim
102 Friday, 03:30 PM - 05:00 PM

Capar, Ismail
101 Friday, 03:30 PM - 05:00 PM

Caplice, Chris
158 Saturday, 10:00 AM - 11:30 AM

Caridi, Maria
136 Saturday, 08:00 AM - 09:30 AM

Carmo, Breno
108 Friday, 05:15 PM - 06:45 PM
114 Friday, 05:15 PM - 06:45 PM
314 Sunday, 02:45 PM - 04:15 PM
408 Monday, 09:45 AM - 11:15 AM

Carnes, Timothy
12 Friday, 08:00 AM - 09:30 AM
80 Friday, 03:30 PM - 05:00 PM

Carnovale, Steven
212 Saturday, 02:15 PM - 03:45 PM
251 Saturday, 04:00 PM - 05:30 PM
277 Sunday, 08:00 AM - 09:30 AM
317 Sunday, 02:45 PM - 04:15 PM

Caro, Felipe
21 Friday, 08:00 AM - 09:30 AM

Carravilla, Maria Antónia
177 Saturday, 10:00 AM - 11:30 AM

Carrillo, Janice
45 Friday, 10:00 AM - 11:30 AM
150 Saturday, 08:00 AM - 09:30 AM

Carter, Craig
195 Saturday, 12:30 PM - 02:00 PM
268 Sunday, 08:00 AM - 09:30 AM

Carter, Phillip
195 Saturday, 12:30 PM - 02:00 PM

Caruso, Domenico
340 Sunday, 04:30 PM - 06:00 PM

Carvalho, Luciano
120 Friday, 05:15 PM - 06:45 PM

Casarin, Susan
290 Sunday, 09:45 AM - 11:15 AM

Cascetta, Ennio
37 Friday, 10:00 AM - 11:30 AM

Castaneda, Jaime
27 Friday, 10:00 AM - 11:30 AM
163 Saturday, 10:00 AM - 11:30 AM
222 Saturday, 02:15 PM - 03:45 PM

Castilho Filho, Gilberto
290 Sunday, 09:45 AM - 11:15 AM

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Castillo, Ignacio
289 Sunday, 09:45 AM - 11:15 AM

Castillo, Zoila
292 Sunday, 09:45 AM - 11:15 AM

Castka, Pavel
211 Saturday, 02:15 PM - 03:45 PM

Castro, Rosani
316 Sunday, 02:45 PM - 04:15 PM

Castro-Zuluaga, Carlos
119 Friday, 05:15 PM - 06:45 PM

Catalan, Andres
47 Friday, 10:00 AM - 11:30 AM

Cattini Junior, Orlando
11 Friday, 08:00 AM - 09:30 AM
402 Monday, 09:45 AM - 11:15 AM

Cavenaghi, Vagner
290 Sunday, 09:45 AM - 11:15 AM

Cayirli, Tugba
23 Friday, 08:00 AM - 09:30 AM

Celik, Melih
85 Friday, 03:30 PM - 05:00 PM

Cesaret, Bahriye
399 Monday, 09:45 AM - 11:15 AM

Cetinay, Hande
68 Friday, 01:30 PM - 03:00 PM

Chacko, Josey
294 Sunday, 09:45 AM - 11:15 AM

Chakraborty, Samyadip
168 Saturday, 10:00 AM - 11:30 AM

Chakravarti, Arjun
365 Monday, 08:00 AM - 09:30 AM

Chakravorty, Satya
329 Sunday, 02:45 PM - 04:15 PM
396 Monday, 09:45 AM - 11:15 AM

Chambers, Chester
142 Saturday, 08:00 AM - 09:30 AM
334 Sunday, 02:45 PM - 04:15 PM

Chan, Carri
202 Saturday, 12:30 PM - 02:00 PM

Chan, Timothy
322 Sunday, 02:45 PM - 04:15 PM

Chandrasekaran, Aravind
197 Saturday, 12:30 PM - 02:00 PM
223 Saturday, 02:15 PM - 03:45 PM
249 Saturday, 04:00 PM - 05:30 PM
327 Sunday, 02:45 PM - 04:15 PM
366 Monday, 08:00 AM - 09:30 AM

Chang, Dong-Shang
368 Monday, 08:00 AM - 09:30 AM

Chang, Yih-Long
328 Sunday, 02:45 PM - 04:15 PM

Chang Junior, João
40 Friday, 10:00 AM - 11:30 AM
340 Sunday, 04:30 PM - 06:00 PM
375 Monday, 08:00 AM - 09:30 AM

Chapman, Randall
252 Saturday, 04:00 PM - 05:30 PM

Chatfield, Dean
265 Sunday, 08:00 AM - 09:30 AM

Chattopadhay, Nilanjan
114 Friday, 05:15 PM - 06:45 PM

Chaudhuri, Atanu
232 Saturday, 02:15 PM - 03:45 PM
379 Monday, 08:00 AM - 09:30 AM

Chaudhuri, Saikat
327 Sunday, 02:45 PM - 04:15 PM

Chavez, Roberto
271 Sunday, 08:00 AM - 09:30 AM

Chawaguta, Bervery
163 Saturday, 10:00 AM - 11:30 AM

Chawla, Nitesh
384 Monday, 08:00 AM - 09:30 AM

Chen, Chialin
359 Sunday, 04:30 PM - 06:00 PM

Chen, Chien-Ming
322 Sunday, 02:45 PM - 04:15 PM

Chen, Chun-Miin
192 Saturday, 12:30 PM - 02:00 PM

Chen, Frank
224 Saturday, 02:15 PM - 03:45 PM

Chen, He
48 Friday, 10:00 AM - 11:30 AM

Chen, Hui-chuan
308 Sunday, 09:45 AM - 11:15 AM

Chen, Jian
69 Friday, 01:30 PM - 03:00 PM
147 Saturday, 08:00 AM - 09:30 AM
357 Sunday, 04:30 PM - 06:00 PM

Chen, Kay-Yut
131 Saturday, 08:00 AM - 09:30 AM

Chen, Liang
240 Saturday, 04:00 PM - 05:30 PM

Chen, Lihua
274 Sunday, 08:00 AM - 09:30 AM
378 Monday, 08:00 AM - 09:30 AM

Chen, Qiong
41 Friday, 10:00 AM - 11:30 AM
214 Saturday, 02:15 PM - 03:45 PM

Chen, Qiushi
121 Friday, 05:15 PM - 06:45 PM

Chen, Rachel
22 Friday, 08:00 AM - 09:30 AM
97 Friday, 03:30 PM - 05:00 PM

Chen, Shi
281 Sunday, 08:00 AM - 09:30 AM

Chen, Sien
230 Saturday, 02:15 PM - 03:45 PM

Chen, Songlin
230 Saturday, 02:15 PM - 03:45 PM

Chen, Wei
22 Friday, 08:00 AM - 09:30 AM

Chen, Wei
399 Monday, 09:45 AM - 11:15 AM

Chen, Xiangfeng
139 Saturday, 08:00 AM - 09:30 AM

Chen, Ying-Ju
19 Friday, 08:00 AM - 09:30 AM
100 Friday, 03:30 PM - 05:00 PM
139 Saturday, 08:00 AM - 09:30 AM
203 Saturday, 12:30 PM - 02:00 PM
281 Sunday, 08:00 AM - 09:30 AM
370 Monday, 08:00 AM - 09:30 AM

Chen, Yi-Su
39 Friday, 10:00 AM - 11:30 AM

Cheng, Chun-Hung
273 Sunday, 08:00 AM - 09:30 AM

Cheng, Edwin
118 Friday, 05:15 PM - 06:45 PM

Cheng, Ming
19 Friday, 08:00 AM - 09:30 AM

Cheung, Ki Ling
42 Friday, 10:00 AM - 11:30 AM

Chevalier, Philippe
65 Friday, 01:30 PM - 03:00 PM
176 Saturday, 10:00 AM - 11:30 AM
280 Sunday, 08:00 AM - 09:30 AM
344 Sunday, 04:30 PM - 06:00 PM

Chhajed, Dilip
91 Friday, 03:30 PM - 05:00 PM

Chi, Wei
136 Saturday, 08:00 AM - 09:30 AM

Chiang, Chung-Yean
214 Saturday, 02:15 PM - 03:45 PM

Chiang, Wen-Chyuan
76 Friday, 01:30 PM - 03:00 PM

Chick, Stephen
288 Sunday, 09:45 AM - 11:15 AM

Chinaprayoon, Chinawut
221 Saturday, 02:15 PM - 03:45 PM

Chinnam, Ratna
308 Sunday, 09:45 AM - 11:15 AM
354 Sunday, 04:30 PM - 06:00 PM

Chintapalli, Prashant
410 Monday, 09:45 AM - 11:15 AM

Cho, Soo-Haeng
202 Saturday, 12:30 PM - 02:00 PM
219 Saturday, 02:15 PM - 03:45 PM

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Choi, Min
54 Friday, 01:30 PM - 03:00 PM

Choi, Thomas
58 Friday, 01:30 PM - 03:00 PM
72 Friday, 01:30 PM - 03:00 PM
167 Saturday, 10:00 AM - 11:30 AM
228 Saturday, 02:15 PM - 03:45 PM
232 Saturday, 02:15 PM - 03:45 PM

Choi, Tsan-Ming
10 Friday, 08:00 AM - 09:30 AM
118 Friday, 05:15 PM - 06:45 PM

Choo, Adrian
221 Saturday, 02:15 PM - 03:45 PM
379 Monday, 08:00 AM - 09:30 AM

Choobineh, F. Fred
344 Sunday, 04:30 PM - 06:00 PM

Chou, Shuo-Yan
30 Friday, 10:00 AM - 11:30 AM

Chow, Pui-Sze
10 Friday, 08:00 AM - 09:30 AM
118 Friday, 05:15 PM - 06:45 PM

Christensen, Benjamin
80 Friday, 03:30 PM - 05:00 PM

Chu, C. H.
328 Sunday, 02:45 PM - 04:15 PM

Chu, Leon
22 Friday, 08:00 AM - 09:30 AM

Chua, Geoffrey Bryan
322 Sunday, 02:45 PM - 04:15 PM

Chuang, Chia-Hung
65 Friday, 01:30 PM - 03:00 PM

Chuang, Howard Hao-Chun
151 Saturday, 08:00 AM - 09:30 AM

Chung, Casey
146 Saturday, 08:00 AM - 09:30 AM

Chun-Hung, Chiu
10 Friday, 08:00 AM - 09:30 AM

Cil, Eren
47 Friday, 10:00 AM - 11:30 AM
108 Friday, 05:15 PM - 06:45 PM

Clark, Jeremy
88 Friday, 03:30 PM - 05:00 PM

Claro, João
161 Saturday, 10:00 AM - 11:30 AM

Clegg, Ben
329 Sunday, 02:45 PM - 04:15 PM

Clemenson, Kimberly
272 Sunday, 08:00 AM - 09:30 AM

Clifford, Brian
395 Monday, 09:45 AM - 11:15 AM

Clottey, Toyin
257 Saturday, 04:00 PM - 05:30 PM

Coelho, Antonio
386 Monday, 08:00 AM - 09:30 AM

Cohen, Izack
218 Saturday, 02:15 PM - 03:45 PM

Cohen, Maxime
83 Friday, 03:30 PM - 05:00 PM

Cohen, Morris
218 Saturday, 02:15 PM - 03:45 PM
227 Saturday, 02:15 PM - 03:45 PM

Cohn, Amy
116 Friday, 05:15 PM - 06:45 PM

Colares, Erick
175 Saturday, 10:00 AM - 11:30 AM

Collignon, Stephane
232 Saturday, 02:15 PM - 03:45 PM

Collins, Jamie
165 Saturday, 10:00 AM - 11:30 AM

Collins, Michael
226 Saturday, 02:15 PM - 03:45 PM

Conceicao, Samuel
9 Friday, 08:00 AM - 09:30 AM
302 Sunday, 09:45 AM - 11:15 AM

Contiero, Enrico
9 Friday, 08:00 AM - 09:30 AM

Cook, Deborah
232 Saturday, 02:15 PM - 03:45 PM

Corbett, Charles
48 Friday, 10:00 AM - 11:30 AM
211 Saturday, 02:15 PM - 03:45 PM

Corcini Neto, Secundino
134 Saturday, 08:00 AM - 09:30 AM

Cordeau, Jean-François
190 Saturday, 12:30 PM - 02:00 PM

Corradini, Maria
251 Saturday, 04:00 PM - 05:30 PM

Costa, Alysson
354 Sunday, 04:30 PM - 06:00 PM

Costa, Ivanir
173 Saturday, 10:00 AM - 11:30 AM
393 Monday, 09:45 AM - 11:15 AM

Costa, José Alfredo
394 Monday, 09:45 AM - 11:15 AM

Costa, Luciana
179 Saturday, 10:00 AM - 11:30 AM

Cote, Murray
64 Friday, 01:30 PM - 03:00 PM
80 Friday, 03:30 PM - 05:00 PM

Coti-Zelati, Paolo
369 Monday, 08:00 AM - 09:30 AM

Cotton, Chris
150 Saturday, 08:00 AM - 09:30 AM

Courtad, Brenda
180 Saturday, 10:00 AM - 11:30 AM

Craig, Anthony
158 Saturday, 10:00 AM - 11:30 AM

Craig, Nathan
151 Saturday, 08:00 AM - 09:30 AM

Crama, Pascale
300 Sunday, 09:45 AM - 11:15 AM

Crocker, Keith
126 Friday, 05:15 PM - 06:45 PM

Cronin, Paul
294 Sunday, 09:45 AM - 11:15 AM

Crumbly, Jack
112 Friday, 05:15 PM - 06:45 PM
404 Monday, 09:45 AM - 11:15 AM

Csillag, João Mario
252 Saturday, 04:00 PM - 05:30 PM
325 Sunday, 02:45 PM - 04:15 PM

Cui, Feifei
296 Sunday, 09:45 AM - 11:15 AM

Cui, Shiliang
204 Saturday, 12:30 PM - 02:00 PM

Cui, Tony
131 Saturday, 08:00 AM - 09:30 AM

Cui, Zhijian
300 Sunday, 09:45 AM - 11:15 AM

Cunha, Darli
41 Friday, 10:00 AM - 11:30 AM

Curran, James
97 Friday, 03:30 PM - 05:00 PM

Czaja, Lothar
67 Friday, 01:30 PM - 03:00 PM
401 Monday, 09:45 AM - 11:15 AM

D

da Costa, Reinaldo
152 Saturday, 08:00 AM - 09:30 AM
400 Monday, 09:45 AM - 11:15 AM

Da Giau, Alessandro
37 Friday, 10:00 AM - 11:30 AM

da Silva, Linduarte
270 Sunday, 08:00 AM - 09:30 AM

da Silveira, Giovani
255 Saturday, 04:00 PM - 05:30 PM

Dai, Jim
106 Friday, 05:15 PM - 06:45 PM

Dai, Tinglong
202 Saturday, 12:30 PM - 02:00 PM
219 Saturday, 02:15 PM - 03:45 PM

Daily, Bethany
12 Friday, 08:00 AM - 09:30 AM
80 Friday, 03:30 PM - 05:00 PM

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Dakin, Brian
12 Friday, 08:00 AM - 09:30 AM

Damali, Uzay
88 Friday, 03:30 PM - 05:00 PM
303 Sunday, 09:45 AM - 11:15 AM

DAmico, Federico
95 Friday, 03:30 PM - 05:00 PM

Danese, Pamela
136 Saturday, 08:00 AM - 09:30 AM

Das, Ajay
220 Saturday, 02:15 PM - 03:45 PM

Das, Sidhartha
274 Sunday, 08:00 AM - 09:30 AM

Das Gupta, Aparupa
248 Saturday, 04:00 PM - 05:30 PM

Dasu, Sriram
22 Friday, 08:00 AM - 09:30 AM

datt, Guru
377 Monday, 08:00 AM - 09:30 AM

Davis, Andrew
79 Friday, 03:30 PM - 05:00 PM
131 Saturday, 08:00 AM - 09:30 AM

Davis, Darwin
334 Sunday, 02:45 PM - 04:15 PM

Davis, Edward
137 Saturday, 08:00 AM - 09:30 AM

Davis, Lauren
243 Saturday, 04:00 PM - 05:30 PM

Davis, Mark
174 Saturday, 10:00 AM - 11:30 AM

Dawande, Milind
399 Monday, 09:45 AM - 11:15 AM

Day, Jamison
137 Saturday, 08:00 AM - 09:30 AM

Day, Marc
110 Friday, 05:15 PM - 06:45 PM
317 Sunday, 02:45 PM - 04:15 PM

De Kok, Ton
172 Saturday, 10:00 AM - 11:30 AM

De Leeuw, Sander
33 Friday, 10:00 AM - 11:30 AM
85 Friday, 03:30 PM - 05:00 PM
357 Sunday, 04:30 PM - 06:00 PM

De Meyer, Arnoud
171 Saturday, 10:00 AM - 11:30 AM

de Paula, Veronica
175 Saturday, 10:00 AM - 11:30 AM

De Reyck, Bert
209 Saturday, 02:15 PM - 03:45 PM
300 Sunday, 09:45 AM - 11:15 AM

De Toni, Alberto
41 Friday, 10:00 AM - 11:30 AM

De Vericourt, Francis
184 Saturday, 12:30 PM - 02:00 PM
236 Saturday, 04:00 PM - 05:30 PM

de Waart, Dirk
272 Sunday, 08:00 AM - 09:30 AM

De Zan, Giovanni
41 Friday, 10:00 AM - 11:30 AM

Dean, Matthew
111 Friday, 05:15 PM - 06:45 PM

Deane, Jason
123 Friday, 05:15 PM - 06:45 PM

Deb, Mrinmay
203 Saturday, 12:30 PM - 02:00 PM

Debo, Laurens
55 Friday, 01:30 PM - 03:00 PM

Deck, Cary
235 Saturday, 04:00 PM - 05:30 PM

Deglise-Hawkinson, Jivan
246 Saturday, 04:00 PM - 05:30 PM

DeHoratius, Nicole
109 Friday, 05:15 PM - 06:45 PM
151 Saturday, 08:00 AM - 09:30 AM

Dekker, Rommert
160 Saturday, 10:00 AM - 11:30 AM
179 Saturday, 10:00 AM - 11:30 AM
198 Saturday, 12:30 PM - 02:00 PM
218 Saturday, 02:15 PM - 03:45 PM

Dellaert, Nico
43 Friday, 10:00 AM - 11:30 AM

Demirezen, Emre
248 Saturday, 04:00 PM - 05:30 PM

Deng, Changrong
69 Friday, 01:30 PM - 03:00 PM
100 Friday, 03:30 PM - 05:00 PM

Denoyel, Victoire
91 Friday, 03:30 PM - 05:00 PM

Deo, Sarang
282 Sunday, 08:00 AM - 09:30 AM

Desmond, Jeffrey
106 Friday, 05:15 PM - 06:45 PM

Devalkar, Sripad
139 Saturday, 08:00 AM - 09:30 AM

Devaraj, Sarv
275 Sunday, 08:00 AM - 09:30 AM
366 Monday, 08:00 AM - 09:30 AM

Devlin, Anna
131 Saturday, 08:00 AM - 09:30 AM
157 Saturday, 10:00 AM - 11:30 AM

Dhanda, Kanwalroop
138 Saturday, 08:00 AM - 09:30 AM
185 Saturday, 12:30 PM - 02:00 PM

Dhanorkar, Suvrat
236 Saturday, 04:00 PM - 05:30 PM

Di Mauro, Carmela
79 Friday, 03:30 PM - 05:00 PM
183 Saturday, 12:30 PM - 02:00 PM

Di Serio, Luiz
120 Friday, 05:15 PM - 06:45 PM
134 Saturday, 08:00 AM - 09:30 AM

Di Serio, Luiz Carlos
213 Saturday, 02:15 PM - 03:45 PM

Diatha, Krishna Sundar
244 Saturday, 04:00 PM - 05:30 PM

Diaz, Rafael
112 Friday, 05:15 PM - 06:45 PM
391 Monday, 09:45 AM - 11:15 AM

Dindarian, Azadeh
212 Saturday, 02:15 PM - 03:45 PM

Ding, Qing
69 Friday, 01:30 PM - 03:00 PM

Ding, Xin
191 Saturday, 12:30 PM - 02:00 PM
275 Sunday, 08:00 AM - 09:30 AM
366 Monday, 08:00 AM - 09:30 AM

Disney, Stephen
322 Sunday, 02:45 PM - 04:15 PM

Dixit, Vijaya
232 Saturday, 02:15 PM - 03:45 PM
379 Monday, 08:00 AM - 09:30 AM

Dixon, Mike
88 Friday, 03:30 PM - 05:00 PM

Dobrzykowski, David
168 Saturday, 10:00 AM - 11:30 AM
366 Monday, 08:00 AM - 09:30 AM

Dogru, Mustafa
101 Friday, 03:30 PM - 05:00 PM
218 Saturday, 02:15 PM - 03:45 PM

Dollevoet, Twan
218 Saturday, 02:15 PM - 03:45 PM

Domingos Filho, José
230 Saturday, 02:15 PM - 03:45 PM

Dong, Yan
5 Friday, 08:00 AM - 09:30 AM

Dong, Yue
132 Saturday, 08:00 AM - 09:30 AM

Donohue, Karen
1 Friday, 08:00 AM - 09:30 AM
131 Saturday, 08:00 AM - 09:30 AM

Dorion, Eric
392 Monday, 09:45 AM - 11:15 AM

Dos Santos, Allanna
264 Sunday, 08:00 AM - 09:30 AM
290 Sunday, 09:45 AM - 11:15 AM
400 Monday, 09:45 AM - 11:15 AM

Dou, Guowei

186 Saturday, 12:30 PM - 02:00 PM

Dou, Yifan

357 Sunday, 04:30 PM - 06:00 PM

Dreyfus, David

35 Friday, 10:00 AM - 11:30 AM

Druehl, Cheryl

133 Saturday, 08:00 AM - 09:30 AM
196 Saturday, 12:30 PM - 02:00 PM

Du, Lijing

242 Saturday, 04:00 PM - 05:30 PM

Duan, Yanqing

326 Sunday, 02:45 PM - 04:15 PM

Duclós, Luiz

217 Saturday, 02:15 PM - 03:45 PM

Duecker, Susanna

321 Sunday, 02:45 PM - 04:15 PM

Duenyas, Izak

281 Sunday, 08:00 AM - 09:30 AM

Dultra-de-Lima, Ronaldo

252 Saturday, 04:00 PM - 05:30 PM
400 Monday, 09:45 AM - 11:15 AM

Dunn, Peter

12 Friday, 08:00 AM - 09:30 AM
80 Friday, 03:30 PM - 05:00 PM

Dussault, Benjamin

154 Saturday, 08:00 AM - 09:30 AM

Dusseau, Richard

226 Saturday, 02:15 PM - 03:45 PM

Dwyer, Michael

319 Sunday, 02:45 PM - 04:15 PM

E

Easton, George

301 Sunday, 09:45 AM - 11:15 AM

Eckerd, Stephanie

79 Friday, 03:30 PM - 05:00 PM

Eckstein, Dominik

325 Sunday, 02:45 PM - 04:15 PM

Egea, Juliana

264 Sunday, 08:00 AM - 09:30 AM
290 Sunday, 09:45 AM - 11:15 AM
400 Monday, 09:45 AM - 11:15 AM

Eghbali, Sarah

61 Friday, 01:30 PM - 03:00 PM

Ehmke, Jan

102 Friday, 03:30 PM - 05:00 PM

Ehrenfeld, Jesse

2 Friday, 08:00 AM - 09:30 AM
28 Friday, 10:00 AM - 11:30 AM
35 Friday, 10:00 AM - 11:30 AM

Ehrenthal, Joachim

198 Saturday, 12:30 PM - 02:00 PM

Eisenstein, Don

106 Friday, 05:15 PM - 06:45 PM

El Ouardighi, Fouad

91 Friday, 03:30 PM - 05:00 PM

Elahi, Ehsan

1 Friday, 08:00 AM - 09:30 AM
183 Saturday, 12:30 PM - 02:00 PM

Elhafsi, Mohsen

172 Saturday, 10:00 AM - 11:30 AM

Eliasson, Janice

382 Monday, 08:00 AM - 09:30 AM

EL-Khalil, Raed

351 Sunday, 04:30 PM - 06:00 PM

Ellis, Scott

220 Saturday, 02:15 PM - 03:45 PM
240 Saturday, 04:00 PM - 05:30 PM

Ellram, Lisa

124 Friday, 05:15 PM - 06:45 PM
254 Saturday, 04:00 PM - 05:30 PM
268 Sunday, 08:00 AM - 09:30 AM
299 Sunday, 09:45 AM - 11:15 AM

Elmaghraby, Wedad

131 Saturday, 08:00 AM - 09:30 AM
157 Saturday, 10:00 AM - 11:30 AM

ELOMRI, Adel

183 Saturday, 12:30 PM - 02:00 PM

Elwan Ibrahim, Sherwat

169 Saturday, 10:00 AM - 11:30 AM

Eng-Larsson, Fredrik

264 Sunday, 08:00 AM - 09:30 AM

Erdmann, Alacoque

35 Friday, 10:00 AM - 11:30 AM

Erdmann, Rolf

11 Friday, 08:00 AM - 09:30 AM
35 Friday, 10:00 AM - 11:30 AM
93 Friday, 03:30 PM - 05:00 PM
119 Friday, 05:15 PM - 06:45 PM
179 Saturday, 10:00 AM - 11:30 AM
217 Saturday, 02:15 PM - 03:45 PM
384 Monday, 08:00 AM - 09:30 AM

Ergun, Ozlem

81 Friday, 03:30 PM - 05:00 PM
85 Friday, 03:30 PM - 05:00 PM
133 Saturday, 08:00 AM - 09:30 AM

Erhun, Feryal

126 Friday, 05:15 PM - 06:45 PM
131 Saturday, 08:00 AM - 09:30 AM
257 Saturday, 04:00 PM - 05:30 PM
326 Sunday, 02:45 PM - 04:15 PM

Ertan, Emre

169 Saturday, 10:00 AM - 11:30 AM

Ertekin, Necati

57 Friday, 01:30 PM - 03:00 PM

Erwin, Kim

365 Monday, 08:00 AM - 09:30 AM

Erzurumlu, Sinan

170 Saturday, 10:00 AM - 11:30 AM
197 Saturday, 12:30 PM - 02:00 PM

Escobar, Gabriel

202 Saturday, 12:30 PM - 02:00 PM

Esenduran, Gokce

29 Friday, 10:00 AM - 11:30 AM
55 Friday, 01:30 PM - 03:00 PM

Estrada, Miguel

75 Friday, 01:30 PM - 03:00 PM
398 Monday, 09:45 AM - 11:15 AM

Ettl, Markus

42 Friday, 10:00 AM - 11:30 AM

Ewald, Edson

229 Saturday, 02:15 PM - 03:45 PM

F

Faisal, MohdNishat

194 Saturday, 12:30 PM - 02:00 PM
368 Monday, 08:00 AM - 09:30 AM
393 Monday, 09:45 AM - 11:15 AM

Falbo, Margaret

282 Sunday, 08:00 AM - 09:30 AM

Falgari, Matteo

112 Friday, 05:15 PM - 06:45 PM

Fan, Ying

190 Saturday, 12:30 PM - 02:00 PM
308 Sunday, 09:45 AM - 11:15 AM
351 Sunday, 04:30 PM - 06:00 PM

Fang, Ni

24 Friday, 08:00 AM - 09:30 AM

Faramarzi, Hamid

289 Sunday, 09:45 AM - 11:15 AM

Farias, Christiano

316 Sunday, 02:45 PM - 04:15 PM
355 Sunday, 04:30 PM - 06:00 PM

Farias, Geraldo

180 Saturday, 10:00 AM - 11:30 AM
250 Saturday, 04:00 PM - 05:30 PM

Farzan, Azin

248 Saturday, 04:00 PM - 05:30 PM

Fascina, Marcos

31 Friday, 10:00 AM - 11:30 AM

Fawcett, Amydee

20 Friday, 08:00 AM - 09:30 AM

Fawcett, Stanley

20 Friday, 08:00 AM - 09:30 AM
110 Friday, 05:15 PM - 06:45 PM
317 Sunday, 02:45 PM - 04:15 PM

Fearing, Douglas

322 Sunday, 02:45 PM - 04:15 PM

Federgruen, Awi

172 Saturday, 10:00 AM - 11:30 AM

Fei, Qingyi
277 Sunday, 08:00 AM - 09:30 AM

Feldman, Pnina
73 Friday, 01:30 PM - 03:00 PM

Feng, Qi
139 Saturday, 08:00 AM - 09:30 AM
291 Sunday, 09:45 AM - 11:15 AM

Feng, Youyi
143 Saturday, 08:00 AM - 09:30 AM

Ferdows, Kasra
345 Sunday, 04:30 PM - 06:00 PM

Ferguson, Mark
29 Friday, 10:00 AM - 11:30 AM
55 Friday, 01:30 PM - 03:00 PM
306 Sunday, 09:45 AM - 11:15 AM
332 Sunday, 02:45 PM - 04:15 PM

Fernandes, Carolina
144 Saturday, 08:00 AM - 09:30 AM

Fernandez, Lourdes
386 Monday, 08:00 AM - 09:30 AM

Ferrand, Yann
28 Friday, 10:00 AM - 11:30 AM
340 Sunday, 04:30 PM - 06:00 PM

Ferreira, Helisson
400 Monday, 09:45 AM - 11:15 AM

Ferreira Junior, Silas
58 Friday, 01:30 PM - 03:00 PM

Ferreira Neto, Josue
303 Sunday, 09:45 AM - 11:15 AM

Fetter, Gary
187 Saturday, 12:30 PM - 02:00 PM

Field, Joy
174 Saturday, 10:00 AM - 11:30 AM

Fildes, Robert
209 Saturday, 02:15 PM - 03:45 PM

Filgueiras, Felipe
403 Monday, 09:45 AM - 11:15 AM

Fine, Charles
100 Friday, 03:30 PM - 05:00 PM
189 Saturday, 12:30 PM - 02:00 PM

Finger, Andrew
377 Monday, 08:00 AM - 09:30 AM

Fischer, Jan-Hendrik
343 Sunday, 04:30 PM - 06:00 PM

Fisher, Marshall
47 Friday, 10:00 AM - 11:30 AM

Fixson, Sebastian
87 Friday, 03:30 PM - 05:00 PM
196 Saturday, 12:30 PM - 02:00 PM

Fleischmann, Moritz
45 Friday, 10:00 AM - 11:30 AM

Fleming, Christopher
319 Sunday, 02:45 PM - 04:15 PM

Fleury, Afonso
58 Friday, 01:30 PM - 03:00 PM

Fliedner, Gene
391 Monday, 09:45 AM - 11:15 AM

Flynn, Barbara
195 Saturday, 12:30 PM - 02:00 PM
241 Saturday, 04:00 PM - 05:30 PM

Fontem, Belleh
61 Friday, 01:30 PM - 03:00 PM

Found, Pauline
287 Sunday, 09:45 AM - 11:15 AM

Fowler, John
64 Friday, 01:30 PM - 03:00 PM
391 Monday, 09:45 AM - 11:15 AM

Fragkos, Ioannis
209 Saturday, 02:15 PM - 03:45 PM

Francisco, Ana
383 Monday, 08:00 AM - 09:30 AM

Fransoo, Jan
17 Friday, 08:00 AM - 09:30 AM
43 Friday, 10:00 AM - 11:30 AM
121 Friday, 05:15 PM - 06:45 PM

Franza, Richard
329 Sunday, 02:45 PM - 04:15 PM

Fredendall, Lawrence
88 Friday, 03:30 PM - 05:00 PM
376 Monday, 08:00 AM - 09:30 AM
385 Monday, 08:00 AM - 09:30 AM

Freeman, Nickolas
102 Friday, 03:30 PM - 05:00 PM
142 Saturday, 08:00 AM - 09:30 AM
296 Sunday, 09:45 AM - 11:15 AM

Freire, Otávio
201 Saturday, 12:30 PM - 02:00 PM

Freires, Francisco
188 Saturday, 12:30 PM - 02:00 PM
213 Saturday, 02:15 PM - 03:45 PM
292 Sunday, 09:45 AM - 11:15 AM

French Dooley, Monique
190 Saturday, 12:30 PM - 02:00 PM

Friedewald, John
35 Friday, 10:00 AM - 11:30 AM

Fries, Carlos
322 Sunday, 02:45 PM - 04:15 PM

Fries, Carlos Ernani
325 Sunday, 02:45 PM - 04:15 PM
369 Monday, 08:00 AM - 09:30 AM

Froehle, Craig
23 Friday, 08:00 AM - 09:30 AM
64 Friday, 01:30 PM - 03:00 PM
200 Saturday, 12:30 PM - 02:00 PM
262 Sunday, 08:00 AM - 09:30 AM

Frohlich, Markham
20 Friday, 08:00 AM - 09:30 AM

Froitzheim, Thomas
395 Monday, 09:45 AM - 11:15 AM

Frutiger, Mike
299 Sunday, 09:45 AM - 11:15 AM

Fry, Michael
27 Friday, 10:00 AM - 11:30 AM
102 Friday, 03:30 PM - 05:00 PM
262 Sunday, 08:00 AM - 09:30 AM

Fry, Tim
38 Friday, 10:00 AM - 11:30 AM

Fügener, Andreas
105 Friday, 05:15 PM - 06:45 PM

Fugger , Nicolas
235 Saturday, 04:00 PM - 05:30 PM

Furlan, Andrea
37 Friday, 10:00 AM - 11:30 AM

Furtado, João
402 Monday, 09:45 AM - 11:15 AM

Fynes, Brian
225 Saturday, 02:15 PM - 03:45 PM

G

Gabor, Adriana
125 Friday, 05:15 PM - 06:45 PM
198 Saturday, 12:30 PM - 02:00 PM

Gaimon, Cheryl
170 Saturday, 10:00 AM - 11:30 AM
197 Saturday, 12:30 PM - 02:00 PM
223 Saturday, 02:15 PM - 03:45 PM
241 Saturday, 04:00 PM - 05:30 PM
326 Sunday, 02:45 PM - 04:15 PM

Galbreth, Michael
159 Saturday, 10:00 AM - 11:30 AM

Galelli, Daniel
252 Saturday, 04:00 PM - 05:30 PM
400 Monday, 09:45 AM - 11:15 AM

Gal-Or, Esther
97 Friday, 03:30 PM - 05:00 PM

Ganguly, Subhamoy
142 Saturday, 08:00 AM - 09:30 AM
305 Sunday, 09:45 AM - 11:15 AM

Gao, Jie
307 Sunday, 09:45 AM - 11:15 AM

Gao, Long
17 Friday, 08:00 AM - 09:30 AM
166 Saturday, 10:00 AM - 11:30 AM

Gao, Xuefeng
42 Friday, 10:00 AM - 11:30 AM

Garcia, Juan
91 Friday, 03:30 PM - 05:00 PM

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Garcia Bañuelos, Sonia
305 Sunday, 09:45 AM - 11:15 AM

Garcia Vargas, Marco
230 Saturday, 02:15 PM - 03:45 PM

Gardner, John
153 Saturday, 08:00 AM - 09:30 AM

Gargeya, Vidyaranya
165 Saturday, 10:00 AM - 11:30 AM

Garrido-Vega, Pedro
37 Friday, 10:00 AM - 11:30 AM

Garvey, Myles
277 Sunday, 08:00 AM - 09:30 AM

Gatti, Willian
58 Friday, 01:30 PM - 03:00 PM

Gaur, Vishal
94 Friday, 03:30 PM - 05:00 PM
109 Friday, 05:15 PM - 06:45 PM
297 Sunday, 09:45 AM - 11:15 AM

Gavioli, Giovana
317 Sunday, 02:45 PM - 04:15 PM

Gavirneni, Srinagesh
200 Saturday, 12:30 PM - 02:00 PM
276 Sunday, 08:00 AM - 09:30 AM
399 Monday, 09:45 AM - 11:15 AM

Gavronski, Iuri
67 Friday, 01:30 PM - 03:00 PM
107 Friday, 05:15 PM - 06:45 PM
264 Sunday, 08:00 AM - 09:30 AM

Gaytan Iniestra, Juan
230 Saturday, 02:15 PM - 03:45 PM

George, Sajeev
114 Friday, 05:15 PM - 06:45 PM

Georgiadis, George
169 Saturday, 10:00 AM - 11:30 AM

Gerber, Chad
88 Friday, 03:30 PM - 05:00 PM

Gerbl, Martina
299 Sunday, 09:45 AM - 11:15 AM

Gerschberger, Markus
31 Friday, 10:00 AM - 11:30 AM

Ghadge, Abhijeet
393 Monday, 09:45 AM - 11:15 AM

Ghandour, Nada
142 Saturday, 08:00 AM - 09:30 AM

Ghoniem, Ahmed
99 Friday, 03:30 PM - 05:00 PM

Ghosh, Shuva
13 Friday, 08:00 AM - 09:30 AM

Ghosh, Soumen
193 Saturday, 12:30 PM - 02:00 PM

Ghosh Dastidar, Surojit
265 Sunday, 08:00 AM - 09:30 AM
292 Sunday, 09:45 AM - 11:15 AM

Ghoshdastidar, Surajit
168 Saturday, 10:00 AM - 11:30 AM
289 Sunday, 09:45 AM - 11:15 AM

Gibson, Andrew
212 Saturday, 02:15 PM - 03:45 PM

Gilbert, Steve
5 Friday, 08:00 AM - 09:30 AM
73 Friday, 01:30 PM - 03:00 PM
99 Friday, 03:30 PM - 05:00 PM
333 Sunday, 02:45 PM - 04:15 PM

Gilland, Wendell
74 Friday, 01:30 PM - 03:00 PM

Gimenez, Cristina
405 Monday, 09:45 AM - 11:15 AM

Girotra, Karan
219 Saturday, 02:15 PM - 03:45 PM

Glass, Todd
28 Friday, 10:00 AM - 11:30 AM
340 Sunday, 04:30 PM - 06:00 PM

Godinho Filho, Moacir
385 Monday, 08:00 AM - 09:30 AM

Goel, Aneesh
35 Friday, 10:00 AM - 11:30 AM

Goel, Ankur
68 Friday, 01:30 PM - 03:00 PM

Goentzel, Jarrod
189 Saturday, 12:30 PM - 02:00 PM

Goh, Mark
303 Sunday, 09:45 AM - 11:15 AM
328 Sunday, 02:45 PM - 04:15 PM

Gold, Stefan
138 Saturday, 08:00 AM - 09:30 AM

Goldberg, David
198 Saturday, 12:30 PM - 02:00 PM

Golden, Bruce
2 Friday, 08:00 AM - 09:30 AM
64 Friday, 01:30 PM - 03:00 PM
80 Friday, 03:30 PM - 05:00 PM
154 Saturday, 08:00 AM - 09:30 AM
334 Sunday, 02:45 PM - 04:15 PM

Goldhar, Joel
321 Sunday, 02:45 PM - 04:15 PM
365 Monday, 08:00 AM - 09:30 AM

Goldstein, Susan
39 Friday, 10:00 AM - 11:30 AM

Golicic, Susan
124 Friday, 05:15 PM - 06:45 PM

Golini, Ruggero
112 Friday, 05:15 PM - 06:45 PM

Golmohammadi, Davood
1 Friday, 08:00 AM - 09:30 AM
395 Monday, 09:45 AM - 11:15 AM

Gomes, Clandia
264 Sunday, 08:00 AM - 09:30 AM
290 Sunday, 09:45 AM - 11:15 AM

Gomes, Paulo
40 Friday, 10:00 AM - 11:30 AM

Goncalves, Juliana
287 Sunday, 09:45 AM - 11:15 AM

Goncalves, Paulo
27 Friday, 10:00 AM - 11:30 AM
163 Saturday, 10:00 AM - 11:30 AM
222 Saturday, 02:15 PM - 03:45 PM
261 Sunday, 08:00 AM - 09:30 AM

Gong, Tianxiao
274 Sunday, 08:00 AM - 09:30 AM
378 Monday, 08:00 AM - 09:30 AM

Goodwin, Paul
209 Saturday, 02:15 PM - 03:45 PM

Gopal, Anand
157 Saturday, 10:00 AM - 11:30 AM

Gorz, Kathryn
391 Monday, 09:45 AM - 11:15 AM

Gosavi, Abhijit
13 Friday, 08:00 AM - 09:30 AM

Goswami, Manish
238 Saturday, 04:00 PM - 05:30 PM

Gou, Qinglong
57 Friday, 01:30 PM - 03:00 PM
118 Friday, 05:15 PM - 06:45 PM
147 Saturday, 08:00 AM - 09:30 AM

Gouvea, Maria
295 Sunday, 09:45 AM - 11:15 AM

Goyal, Manu
48 Friday, 10:00 AM - 11:30 AM

Goyal, Vineet
83 Friday, 03:30 PM - 05:00 PM

Graham, Ian
105 Friday, 05:15 PM - 06:45 PM

Gralla, Erica
189 Saturday, 12:30 PM - 02:00 PM

Grasman, Scott
305 Sunday, 09:45 AM - 11:15 AM

Graves, Stephen
21 Friday, 08:00 AM - 09:30 AM
143 Saturday, 08:00 AM - 09:30 AM

Gray, John
63 Friday, 01:30 PM - 03:00 PM
145 Saturday, 08:00 AM - 09:30 AM
299 Sunday, 09:45 AM - 11:15 AM
327 Sunday, 02:45 PM - 04:15 PM

Greis, Noel
173 Saturday, 10:00 AM - 11:30 AM

Griffin, Jacqueline
184 Saturday, 12:30 PM - 02:00 PM

Author Index

Griffis, Stanley
251 Saturday, 04:00 PM - 05:30 PM

Grushka-Cockayne, Yael
209 Saturday, 02:15 PM - 03:45 PM

Guajardo, Jose
227 Saturday, 02:15 PM - 03:45 PM

Gui, Luyi
81 Friday, 03:30 PM - 05:00 PM

Guide, Daniel
159 Saturday, 10:00 AM - 11:30 AM

Guimaraes, Julio
392 Monday, 09:45 AM - 11:15 AM

Gulati, Mangla
80 Friday, 03:30 PM - 05:00 PM

Gullu, Refik
144 Saturday, 08:00 AM - 09:30 AM

Gumus, Mehmet
69 Friday, 01:30 PM - 03:00 PM
281 Sunday, 08:00 AM - 09:30 AM
303 Sunday, 09:45 AM - 11:15 AM
319 Sunday, 02:45 PM - 04:15 PM

Guo, Pengfei
215 Saturday, 02:15 PM - 03:45 PM
370 Monday, 08:00 AM - 09:30 AM

GUO, DANXIA
315 Sunday, 02:45 PM - 04:15 PM

GUO, Shanshan
205 Saturday, 12:30 PM - 02:00 PM

Gupta, Diwakar
17 Friday, 08:00 AM - 09:30 AM

Gupta, J N D
296 Sunday, 09:45 AM - 11:15 AM

Gupta, Sudheer
307 Sunday, 09:45 AM - 11:15 AM

Gupta, Sushil
288 Sunday, 09:45 AM - 11:15 AM
293 Sunday, 09:45 AM - 11:15 AM

Gupta, Varun
100 Friday, 03:30 PM - 05:00 PM

Gurgel, Julia
314 Sunday, 02:45 PM - 04:15 PM

Gurgel, Marla Teciana
347 Sunday, 04:30 PM - 06:00 PM

GURGUR, CIGDEM
110 Friday, 05:15 PM - 06:45 PM
276 Sunday, 08:00 AM - 09:30 AM
340 Sunday, 04:30 PM - 06:00 PM
391 Monday, 09:45 AM - 11:15 AM

Gurnani, Haresh
17 Friday, 08:00 AM - 09:30 AM
69 Friday, 01:30 PM - 03:00 PM
150 Saturday, 08:00 AM - 09:30 AM

Gurudatt, Chilagondanahalli
403 Monday, 09:45 AM - 11:15 AM

Gurumurthi, Suri
270 Sunday, 08:00 AM - 09:30 AM
378 Monday, 08:00 AM - 09:30 AM

Gutierrez, Enrique
386 Monday, 08:00 AM - 09:30 AM

H

Ha, Albert
333 Sunday, 02:45 PM - 04:15 PM
370 Monday, 08:00 AM - 09:30 AM

Ha, Seung Jin
244 Saturday, 04:00 PM - 05:30 PM

Habermann, Marco
38 Friday, 10:00 AM - 11:30 AM

Hales, Douglas
329 Sunday, 02:45 PM - 04:15 PM
396 Monday, 09:45 AM - 11:15 AM

Hall, David
222 Saturday, 02:15 PM - 03:45 PM

Hall, Nicholas
55 Friday, 01:30 PM - 03:00 PM

Han, Spring
56 Friday, 01:30 PM - 03:00 PM
114 Friday, 05:15 PM - 06:45 PM

Handley, Sean
299 Sunday, 09:45 AM - 11:15 AM

Hanks, Lydia
226 Saturday, 02:15 PM - 03:45 PM

Hao, Gang
10 Friday, 08:00 AM - 09:30 AM

Hao, Li
235 Saturday, 04:00 PM - 05:30 PM

Hardcopf, Rick
261 Sunday, 08:00 AM - 09:30 AM
329 Sunday, 02:45 PM - 04:15 PM

Harding, Mario
90 Friday, 03:30 PM - 05:00 PM

Harrington, Tomás
377 Monday, 08:00 AM - 09:30 AM
403 Monday, 09:45 AM - 11:15 AM

Harrison, Norma
238 Saturday, 04:00 PM - 05:30 PM
372 Monday, 08:00 AM - 09:30 AM

Harrison, Terry
177 Saturday, 10:00 AM - 11:30 AM

Hartley, Janet
72 Friday, 01:30 PM - 03:00 PM

Hartmann, Jens
322 Sunday, 02:45 PM - 04:15 PM

Haruvy, Ernan
235 Saturday, 04:00 PM - 05:30 PM

harvey, Jean
191 Saturday, 12:30 PM - 02:00 PM
252 Saturday, 04:00 PM - 05:30 PM

Hassanzadeh, Anahita
21 Friday, 08:00 AM - 09:30 AM

Hassini, Elkafi
276 Sunday, 08:00 AM - 09:30 AM

Hausberg, Carlo
270 Sunday, 08:00 AM - 09:30 AM

Hausman, Warren
126 Friday, 05:15 PM - 06:45 PM
280 Sunday, 08:00 AM - 09:30 AM

He, Ping
186 Saturday, 12:30 PM - 02:00 PM

He, Xi
118 Friday, 05:15 PM - 06:45 PM

He, Xiuli
94 Friday, 03:30 PM - 05:00 PM

He, Yuhong
333 Sunday, 02:45 PM - 04:15 PM

Heaslip, Graham
85 Friday, 03:30 PM - 05:00 PM

Heath, Susan
190 Saturday, 12:30 PM - 02:00 PM

Heese, Hans S
205 Saturday, 12:30 PM - 02:00 PM

Heigh, ian
7 Friday, 08:00 AM - 09:30 AM

Heineke, Janelle
174 Saturday, 10:00 AM - 11:30 AM

Heiser, Daniel
295 Sunday, 09:45 AM - 11:15 AM

Heizer, Jay
206 Saturday, 12:30 PM - 02:00 PM

Hekimoglu, Mustafa
179 Saturday, 10:00 AM - 11:30 AM

Hellingrath, Bernd
343 Sunday, 04:30 PM - 06:00 PM

Helm, Jonathan
132 Saturday, 08:00 AM - 09:30 AM
376 Monday, 08:00 AM - 09:30 AM

Helo, Petri
117 Friday, 05:15 PM - 06:45 PM

Hemilä, Jukka
347 Sunday, 04:30 PM - 06:00 PM

Hemstrom, Chris
372 Monday, 08:00 AM - 09:30 AM

Hendijani, Rosa
183 Saturday, 12:30 PM - 02:00 PM

Herrmann, Jan

296 Sunday, 09:45 AM - 11:15 AM

Hertzler, Erik

257 Saturday, 04:00 PM - 05:30 PM

Hewitt, Mike

305 Sunday, 09:45 AM - 11:15 AM

Hidalgo, David

316 Sunday, 02:45 PM - 04:15 PM

Hill, Alex

115 Friday, 05:15 PM - 06:45 PM

Ho, Kin-Chuen

273 Sunday, 08:00 AM - 09:30 AM

HO, BENJAMIN

271 Sunday, 08:00 AM - 09:30 AM

Hobby, John

101 Friday, 03:30 PM - 05:00 PM

Hoberg, Kai

141 Saturday, 08:00 AM - 09:30 AM

Hoffmann, Max

273 Sunday, 08:00 AM - 09:30 AM

Hofmann, Hannes

277 Sunday, 08:00 AM - 09:30 AM

Hofstetter, Joerg

198 Saturday, 12:30 PM - 02:00 PM

Holguin-Veras, Jose

189 Saturday, 12:30 PM - 02:00 PM
243 Saturday, 04:00 PM - 05:30 PM
294 Sunday, 09:45 AM - 11:15 AM

Holliday, Keith

256 Saturday, 04:00 PM - 05:30 PM
298 Sunday, 09:45 AM - 11:15 AM

Hollingworth, David

365 Monday, 08:00 AM - 09:30 AM

Holsapple, Clyde

240 Saturday, 04:00 PM - 05:30 PM

Holweg, Matthias

201 Saturday, 12:30 PM - 02:00 PM

Hong, Bo

236 Saturday, 04:00 PM - 05:30 PM

Hong, Soon-Ik

244 Saturday, 04:00 PM - 05:30 PM

Honhon, Dorothee

198 Saturday, 12:30 PM - 02:00 PM
203 Saturday, 12:30 PM - 02:00 PM

Hopp, Wallace

106 Friday, 05:15 PM - 06:45 PM
247 Saturday, 04:00 PM - 05:30 PM

Hora, Manpreet

63 Friday, 01:30 PM - 03:00 PM
193 Saturday, 12:30 PM - 02:00 PM
197 Saturday, 12:30 PM - 02:00 PM
227 Saturday, 02:15 PM - 03:45 PM

Hormby, Sharon

358 Sunday, 04:30 PM - 06:00 PM

Hoshiko, Lance

322 Sunday, 02:45 PM - 04:15 PM

House, Lawrence

2 Friday, 08:00 AM - 09:30 AM

Hu, Bin

150 Saturday, 08:00 AM - 09:30 AM

Hu, Qiaohai (Joice)

178 Saturday, 10:00 AM - 11:30 AM

Hu, Qing

287 Sunday, 09:45 AM - 11:15 AM

Hu, Shanshan

55 Friday, 01:30 PM - 03:00 PM
136 Saturday, 08:00 AM - 09:30 AM

Hu, Xiangpei

154 Saturday, 08:00 AM - 09:30 AM

Hu, Yihong

134 Saturday, 08:00 AM - 09:30 AM

HUA, HAN

229 Saturday, 02:15 PM - 03:45 PM

Huang, Elbert

288 Sunday, 09:45 AM - 11:15 AM

Huang, Tao

239 Saturday, 04:00 PM - 05:30 PM

Huang, Tingliang

19 Friday, 08:00 AM - 09:30 AM

Huang, Xiao

69 Friday, 01:30 PM - 03:00 PM

Huang, Xiaowen

58 Friday, 01:30 PM - 03:00 PM

Huang, Ximin

81 Friday, 03:30 PM - 05:00 PM

Hughes, Kate

59 Friday, 01:30 PM - 03:00 PM
393 Monday, 09:45 AM - 11:15 AM

Huh, Tim

125 Friday, 05:15 PM - 06:45 PM

Humphreys, Paul

341 Sunday, 04:30 PM - 06:00 PM

Hur, Daesik

46 Friday, 10:00 AM - 11:30 AM
405 Monday, 09:45 AM - 11:15 AM

Hutchison-Krupat, Jeremy

97 Friday, 03:30 PM - 05:00 PM
169 Saturday, 10:00 AM - 11:30 AM
222 Saturday, 02:15 PM - 03:45 PM

Hwang, Seong Wook

236 Saturday, 04:00 PM - 05:30 PM

I

Ibrahim, Ameera

99 Friday, 03:30 PM - 05:00 PM

Idiagbon-Oke, Moronke

53 Friday, 01:30 PM - 03:00 PM

Idris, Fazli

407 Monday, 09:45 AM - 11:15 AM

Im, Subin

238 Saturday, 04:00 PM - 05:30 PM

Inderfurth, Karl

192 Saturday, 12:30 PM - 02:00 PM

Iravani, Foad

22 Friday, 08:00 AM - 09:30 AM

Iravani, Seyed

45 Friday, 10:00 AM - 11:30 AM

Irion , Crishna

345 Sunday, 04:30 PM - 06:00 PM

Ishfaq, Rafay

153 Saturday, 08:00 AM - 09:30 AM

Islegen, Ozge

83 Friday, 03:30 PM - 05:00 PM

Iverson, Craig

90 Friday, 03:30 PM - 05:00 PM

Ixmeier, Johannes

67 Friday, 01:30 PM - 03:00 PM
401 Monday, 09:45 AM - 11:15 AM

Iyengar, Garud

83 Friday, 03:30 PM - 05:00 PM

Iyer, Ananth

159 Saturday, 10:00 AM - 11:30 AM

Iyogun, Paul

76 Friday, 01:30 PM - 03:00 PM

Izhutov, Pavel

3 Friday, 08:00 AM - 09:30 AM

J

Jaaron, Ayham

252 Saturday, 04:00 PM - 05:30 PM

Jack, Eric

366 Monday, 08:00 AM - 09:30 AM

Jacobs, Brian

221 Saturday, 02:15 PM - 03:45 PM

Jacobs, Mark

271 Sunday, 08:00 AM - 09:30 AM

Jagoda, Kalinga

271 Sunday, 08:00 AM - 09:30 AM
315 Sunday, 02:45 PM - 04:15 PM

Jahre, Marianne

7 Friday, 08:00 AM - 09:30 AM

Jain, Aditya

224 Saturday, 02:15 PM - 03:45 PM

Jain, Karuna

144 Saturday, 08:00 AM - 09:30 AM
238 Saturday, 04:00 PM - 05:30 PM
270 Sunday, 08:00 AM - 09:30 AM

Author Index

Jain, Nitish
219 Saturday, 02:15 PM - 03:45 PM

Jain, Shailendra
324 Sunday, 02:45 PM - 04:15 PM

Jakowczyk, Marta
159 Saturday, 10:00 AM - 11:30 AM

Jalili, Monire
6 Friday, 08:00 AM - 09:30 AM

Jaller, Miguel
189 Saturday, 12:30 PM - 02:00 PM
243 Saturday, 04:00 PM - 05:30 PM
294 Sunday, 09:45 AM - 11:15 AM

James, Tabitha
232 Saturday, 02:15 PM - 03:45 PM

Jamwal, Vikram
4 Friday, 08:00 AM - 09:30 AM
374 Monday, 08:00 AM - 09:30 AM

Janakiram, Mani
143 Saturday, 08:00 AM - 09:30 AM

Janakiraman, Ganesh
125 Friday, 05:15 PM - 06:45 PM
399 Monday, 09:45 AM - 11:15 AM

Jang, Hoon
202 Saturday, 12:30 PM - 02:00 PM

Jans, Raf
160 Saturday, 10:00 AM - 11:30 AM

Janssen, Robbert
404 Monday, 09:45 AM - 11:15 AM

Jaramillo, Jhull
302 Sunday, 09:45 AM - 11:15 AM

Jaska, Patrick
242 Saturday, 04:00 PM - 05:30 PM

Jasper, Dennis
357 Sunday, 04:30 PM - 06:00 PM

Jayanty, S.
302 Sunday, 09:45 AM - 11:15 AM

Jayaram, Jayanth
98 Friday, 03:30 PM - 05:00 PM
165 Saturday, 10:00 AM - 11:30 AM
316 Sunday, 02:45 PM - 04:15 PM

Jayaraman, Vaidy
232 Saturday, 02:15 PM - 03:45 PM
325 Sunday, 02:45 PM - 04:15 PM

Jennings, Otis
184 Saturday, 12:30 PM - 02:00 PM

Jensen, John
371 Monday, 08:00 AM - 09:30 AM

Jeschke, Sabina
273 Sunday, 08:00 AM - 09:30 AM

Jiang, Xiaogan
180 Saturday, 10:00 AM - 11:30 AM

Jiang, Xiaoyue
197 Saturday, 12:30 PM - 02:00 PM

JIANG, Bao
396 Monday, 09:45 AM - 11:15 AM

Jiao, Roger
236 Saturday, 04:00 PM - 05:30 PM
352 Sunday, 04:30 PM - 06:00 PM

Jin, Ming
151 Saturday, 08:00 AM - 09:30 AM

Jin, Yue
101 Friday, 03:30 PM - 05:00 PM

João, Cristina
372 Monday, 08:00 AM - 09:30 AM

Joglekar, Nitin
145 Saturday, 08:00 AM - 09:30 AM
197 Saturday, 12:30 PM - 02:00 PM
222 Saturday, 02:15 PM - 03:45 PM
223 Saturday, 02:15 PM - 03:45 PM

John, Joshin
168 Saturday, 10:00 AM - 11:30 AM
289 Sunday, 09:45 AM - 11:15 AM

Johnson, Dana
191 Saturday, 12:30 PM - 02:00 PM
392 Monday, 09:45 AM - 11:15 AM

Johnson-Hall, Tracy
58 Friday, 01:30 PM - 03:00 PM
63 Friday, 01:30 PM - 03:00 PM

Johnston, David
72 Friday, 01:30 PM - 03:00 PM

Jordan, Ana
187 Saturday, 12:30 PM - 02:00 PM

Joshi, Maheshkumar
274 Sunday, 08:00 AM - 09:30 AM

Jung, Kyung Sung
146 Saturday, 08:00 AM - 09:30 AM

K

Kabata, Mine
190 Saturday, 12:30 PM - 02:00 PM

Kabul, Mustafa
73 Friday, 01:30 PM - 03:00 PM

Kach, Andrew
271 Sunday, 08:00 AM - 09:30 AM

Kainuma, Yasutaka
190 Saturday, 12:30 PM - 02:00 PM

Kaiser, Gernot
245 Saturday, 04:00 PM - 05:30 PM
339 Sunday, 04:30 PM - 06:00 PM

Kaki, Anssi
95 Friday, 03:30 PM - 05:00 PM

Kakkad, Amitkumar
347 Sunday, 04:30 PM - 06:00 PM
394 Monday, 09:45 AM - 11:15 AM

Kalaignanam, Kartik
221 Saturday, 02:15 PM - 03:45 PM

Kalakbandi, Vinay
1 Friday, 08:00 AM - 09:30 AM

Kalchschmidt, Matteo
93 Friday, 03:30 PM - 05:00 PM
112 Friday, 05:15 PM - 06:45 PM
377 Monday, 08:00 AM - 09:30 AM

Kalkanci, Basak
131 Saturday, 08:00 AM - 09:30 AM

Kalsi, Karanjit
224 Saturday, 02:15 PM - 03:45 PM

Kaminsky, Phil
224 Saturday, 02:15 PM - 03:45 PM

Kampker, Achim
273 Sunday, 08:00 AM - 09:30 AM
326 Sunday, 02:45 PM - 04:15 PM

Kandampully , Jay
226 Saturday, 02:15 PM - 03:45 PM

Kanet, Jack
172 Saturday, 10:00 AM - 11:30 AM

Kapsali, Maria
320 Sunday, 02:45 PM - 04:15 PM

Karaer, Ozgen
29 Friday, 10:00 AM - 11:30 AM
326 Sunday, 02:45 PM - 04:15 PM

Karaesmen, Itir
332 Sunday, 02:45 PM - 04:15 PM

Karamemis, Gulver
357 Sunday, 04:30 PM - 06:00 PM

Karjalainen, Katri
367 Monday, 08:00 AM - 09:30 AM

Karmarkar, Uday
48 Friday, 10:00 AM - 11:30 AM
248 Saturday, 04:00 PM - 05:30 PM

Karray, Salma
123 Friday, 05:15 PM - 06:45 PM

Katok, Elena
79 Friday, 03:30 PM - 05:00 PM
235 Saturday, 04:00 PM - 05:30 PM

Kattuman, Paul
201 Saturday, 12:30 PM - 02:00 PM

Katz-Rogozhnikov, Dmitriy
198 Saturday, 12:30 PM - 02:00 PM

Kaur, Manpreet
59 Friday, 01:30 PM - 03:00 PM

Kavadias, Stylianos
169 Saturday, 10:00 AM - 11:30 AM
196 Saturday, 12:30 PM - 02:00 PM
248 Saturday, 04:00 PM - 05:30 PM
300 Sunday, 09:45 AM - 11:15 AM

Kayo, Eduardo

231 Saturday, 02:15 PM - 03:45 PM

Kazan, Osman

410 Monday, 09:45 AM - 11:15 AM

Kazemersky, Philip

295 Sunday, 09:45 AM - 11:15 AM

Kazemian, Pooyan

132 Saturday, 08:00 AM - 09:30 AM

Kc, Diwas

23 Friday, 08:00 AM - 09:30 AM

Ke, Jian-yu

53 Friday, 01:30 PM - 03:00 PM

Ke, Ke

134 Saturday, 08:00 AM - 09:30 AM

Keck, Steffen

157 Saturday, 10:00 AM - 11:30 AM

Kelley, Ken

89 Friday, 03:30 PM - 05:00 PM

Kemahlioglu-Ziya, Eda

29 Friday, 10:00 AM - 11:30 AM

Kempf, Karl

257 Saturday, 04:00 PM - 05:30 PM

Kenyon, George

165 Saturday, 10:00 AM - 11:30 AM

Kerbache, Laoucine

228 Saturday, 02:15 PM - 03:45 PM

Kersten, Wolfgang

53 Friday, 01:30 PM - 03:00 PM
231 Saturday, 02:15 PM - 03:45 PM

Kesavan, Saravanan

297 Sunday, 09:45 AM - 11:15 AM

Keskin, Burcu

61 Friday, 01:30 PM - 03:00 PM
102 Friday, 03:30 PM - 05:00 PM

Keskinocak, Pinar

85 Friday, 03:30 PM - 05:00 PM
143 Saturday, 08:00 AM - 09:30 AM
184 Saturday, 12:30 PM - 02:00 PM

Kettunen, Outi

292 Sunday, 09:45 AM - 11:15 AM

Ketzenberg, Michael

57 Friday, 01:30 PM - 03:00 PM

Khanjari, Neda

45 Friday, 10:00 AM - 11:30 AM

Khawam, John

6 Friday, 08:00 AM - 09:30 AM
29 Friday, 10:00 AM - 11:30 AM

Khayatian, Aida

213 Saturday, 02:15 PM - 03:45 PM

Kim, Hyojin

405 Monday, 09:45 AM - 11:15 AM

Kim, Ji-On

244 Saturday, 04:00 PM - 05:30 PM

Kim, Kyoung-Kuk

410 Monday, 09:45 AM - 11:15 AM

Kim, Song-Hee

202 Saturday, 12:30 PM - 02:00 PM

Kim, Sunghoon

244 Saturday, 04:00 PM - 05:30 PM

Kim, Yoon Hee

240 Saturday, 04:00 PM - 05:30 PM
385 Monday, 08:00 AM - 09:30 AM

Kim, Youn Sung

374 Monday, 08:00 AM - 09:30 AM

Kim, Yusoon

72 Friday, 01:30 PM - 03:00 PM

Kimes, Sherri

88 Friday, 03:30 PM - 05:00 PM

Kimura, Herbert

40 Friday, 10:00 AM - 11:30 AM
231 Saturday, 02:15 PM - 03:45 PM
317 Sunday, 02:45 PM - 04:15 PM
369 Monday, 08:00 AM - 09:30 AM

Kirche, Elias

175 Saturday, 10:00 AM - 11:30 AM
214 Saturday, 02:15 PM - 03:45 PM

Klassen, Ken

23 Friday, 08:00 AM - 09:30 AM

Klassen, Robert

124 Friday, 05:15 PM - 06:45 PM
167 Saturday, 10:00 AM - 11:30 AM

Klingebiel, Katja

161 Saturday, 10:00 AM - 11:30 AM

Klumpp, Matthias

33 Friday, 10:00 AM - 11:30 AM
67 Friday, 01:30 PM - 03:00 PM

Kneipp, Jordana

264 Sunday, 08:00 AM - 09:30 AM
290 Sunday, 09:45 AM - 11:15 AM

Knemeyer, A.

255 Saturday, 04:00 PM - 05:30 PM

Kocabasoglu Hillmer, Canan

343 Sunday, 04:30 PM - 06:00 PM

Kolisch, Rainer

105 Friday, 05:15 PM - 06:45 PM

Konur, Dincer

186 Saturday, 12:30 PM - 02:00 PM

Kosiek, Ted

206 Saturday, 12:30 PM - 02:00 PM

Kostamis, Dimitris

150 Saturday, 08:00 AM - 09:30 AM
205 Saturday, 12:30 PM - 02:00 PM

Kotcharin, Suntichai

37 Friday, 10:00 AM - 11:30 AM

Koufteros, Xenophon

228 Saturday, 02:15 PM - 03:45 PM

Koushik, Dev

358 Sunday, 04:30 PM - 06:00 PM

Kouvelis, Panos

76 Friday, 01:30 PM - 03:00 PM
274 Sunday, 08:00 AM - 09:30 AM

Kovach, Jeremy

81 Friday, 03:30 PM - 05:00 PM
193 Saturday, 12:30 PM - 02:00 PM
300 Sunday, 09:45 AM - 11:15 AM

Kovacs, Gyongyi

268 Sunday, 08:00 AM - 09:30 AM

Kovacs, Zoltan

329 Sunday, 02:45 PM - 04:15 PM

Kraft, Tim

29 Friday, 10:00 AM - 11:30 AM
133 Saturday, 08:00 AM - 09:30 AM

Krappinger, Reinhard

140 Saturday, 08:00 AM - 09:30 AM

Kreisköther, Kai

273 Sunday, 08:00 AM - 09:30 AM

Kremer, Mirko

235 Saturday, 04:00 PM - 05:30 PM

Kretschmer, Andreas

112 Friday, 05:15 PM - 06:45 PM

Kristal, Murat

58 Friday, 01:30 PM - 03:00 PM

Kroes, James

344 Sunday, 04:30 PM - 06:00 PM

Kronick, Steven

106 Friday, 05:15 PM - 06:45 PM

Kruglianskas, Isak

264 Sunday, 08:00 AM - 09:30 AM
290 Sunday, 09:45 AM - 11:15 AM

Krunke, Moritz

273 Sunday, 08:00 AM - 09:30 AM

Kshirsagar, Vineet

238 Saturday, 04:00 PM - 05:30 PM

Kucukyazici, Beste

28 Friday, 10:00 AM - 11:30 AM

Kuhar, Alan

213 Saturday, 02:15 PM - 03:45 PM

Kulkarni, Shailesh

13 Friday, 08:00 AM - 09:30 AM
111 Friday, 05:15 PM - 06:45 PM
187 Saturday, 12:30 PM - 02:00 PM

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173 Saturday, 10:00 AM - 11:30 AM
393 Monday, 09:45 AM - 11:15 AM

Nogueira, Monica
173 Saturday, 10:00 AM - 11:30 AM

Novaes, Antonio
386 Monday, 08:00 AM - 09:30 AM

Nowicki, David
187 Saturday, 12:30 PM - 02:00 PM

Nyaga, Gilbert
314 Sunday, 02:45 PM - 04:15 PM
359 Sunday, 04:30 PM - 06:00 PM

Nye, Pete
217 Saturday, 02:15 PM - 03:45 PM

O

Odegaard, Fredrik
306 Sunday, 09:45 AM - 11:15 AM

Oh, Jaelynn
73 Friday, 01:30 PM - 03:00 PM

Oh, Lih-Bin
255 Saturday, 04:00 PM - 05:30 PM

Ohlmann, Jeffrey
102 Friday, 03:30 PM - 05:00 PM

Oke, Adegoke
53 Friday, 01:30 PM - 03:00 PM
98 Friday, 03:30 PM - 05:00 PM

Olavson, Thomas
324 Sunday, 02:45 PM - 04:15 PM

Olea, Pelayo
392 Monday, 09:45 AM - 11:15 AM

Oliva, Rogelio
151 Saturday, 08:00 AM - 09:30 AM
209 Saturday, 02:15 PM - 03:45 PM

Olivares, Marcelo
202 Saturday, 12:30 PM - 02:00 PM

Olivares Benítez, Elias
305 Sunday, 09:45 AM - 11:15 AM
386 Monday, 08:00 AM - 09:30 AM

Olivares Benítez, Elías
257 Saturday, 04:00 PM - 05:30 PM

Oliveira, Fernando
328 Sunday, 02:45 PM - 04:15 PM

Oliveira, José F.
177 Saturday, 10:00 AM - 11:30 AM

Oliveira, Lia
161 Saturday, 10:00 AM - 11:30 AM

Oliveira, Otavio
367 Monday, 08:00 AM - 09:30 AM

Oloruntoba, Richard
59 Friday, 01:30 PM - 03:00 PM

Olvera, Ruben
386 Monday, 08:00 AM - 09:30 AM

Author Index

ONeill, Liam
132 Saturday, 08:00 AM - 09:30 AM

Onkal, Dilek
209 Saturday, 02:15 PM - 03:45 PM

Oppenheim, Rosa
212 Saturday, 02:15 PM - 03:45 PM

Oraiopoulos, Nektarios
97 Friday, 03:30 PM - 05:00 PM

Orme, Richard
329 Sunday, 02:45 PM - 04:15 PM

Orozco, Jesus
75 Friday, 01:30 PM - 03:00 PM

Ortega, Cesar
37 Friday, 10:00 AM - 11:30 AM
119 Friday, 05:15 PM - 06:45 PM
141 Saturday, 08:00 AM - 09:30 AM

Ortuno, M. Teresa
215 Saturday, 02:15 PM - 03:45 PM

Osadchiy, Nikolay
23 Friday, 08:00 AM - 09:30 AM
94 Friday, 03:30 PM - 05:00 PM

Osinski, Marilei
217 Saturday, 02:15 PM - 03:45 PM

Osorio, Arturo
251 Saturday, 04:00 PM - 05:30 PM

Ovchinnikov, Anton
157 Saturday, 10:00 AM - 11:30 AM
235 Saturday, 04:00 PM - 05:30 PM

Ozen, Ulas
218 Saturday, 02:15 PM - 03:45 PM

Ozer, Ozalp
169 Saturday, 10:00 AM - 11:30 AM

Ozgur, Ceyhun
9 Friday, 08:00 AM - 09:30 AM

Ozkan, Gulru
41 Friday, 10:00 AM - 11:30 AM
214 Saturday, 02:15 PM - 03:45 PM
222 Saturday, 02:15 PM - 03:45 PM

Ozlu, Hasim
186 Saturday, 12:30 PM - 02:00 PM

P

Paaz, Monica
11 Friday, 08:00 AM - 09:30 AM

Padhi, Sidhartha
271 Sunday, 08:00 AM - 09:30 AM
386 Monday, 08:00 AM - 09:30 AM

Pagell, Mark
341 Sunday, 04:30 PM - 06:00 PM

Paiva, Ely
115 Friday, 05:15 PM - 06:45 PM
136 Saturday, 08:00 AM - 09:30 AM
377 Monday, 08:00 AM - 09:30 AM

Paiva, Izabelle Virgínia
408 Monday, 09:45 AM - 11:15 AM

Paixão, Giorgio
179 Saturday, 10:00 AM - 11:30 AM

Pal, Raktim
111 Friday, 05:15 PM - 06:45 PM

Paladini, Edson
345 Sunday, 04:30 PM - 06:00 PM
369 Monday, 08:00 AM - 09:30 AM

Palsule-Desai, Omkar
307 Sunday, 09:45 AM - 11:15 AM

Pan, Xiajun
5 Friday, 08:00 AM - 09:30 AM
203 Saturday, 12:30 PM - 02:00 PM
399 Monday, 09:45 AM - 11:15 AM

Panchamgam, Kiran
21 Friday, 08:00 AM - 09:30 AM

Pangburn, Michael
6 Friday, 08:00 AM - 09:30 AM

Pangburn, Mike
47 Friday, 10:00 AM - 11:30 AM

Paquette, Julie
382 Monday, 08:00 AM - 09:30 AM

Parast, Mahour
58 Friday, 01:30 PM - 03:00 PM

Park, Sunggyun
410 Monday, 09:45 AM - 11:15 AM

Parker, Geoffrey
145 Saturday, 08:00 AM - 09:30 AM
191 Saturday, 12:30 PM - 02:00 PM
197 Saturday, 12:30 PM - 02:00 PM
319 Sunday, 02:45 PM - 04:15 PM

Parker, Rodney
35 Friday, 10:00 AM - 11:30 AM
68 Friday, 01:30 PM - 03:00 PM

Parlakturk, Ali
5 Friday, 08:00 AM - 09:30 AM
73 Friday, 01:30 PM - 03:00 PM

Parsaei, Maryam
152 Saturday, 08:00 AM - 09:30 AM
204 Saturday, 12:30 PM - 02:00 PM

Paschoal, Gabriela
11 Friday, 08:00 AM - 09:30 AM

Patel, Pankaj
193 Saturday, 12:30 PM - 02:00 PM

Pathak, Surya
72 Friday, 01:30 PM - 03:00 PM
90 Friday, 03:30 PM - 05:00 PM
217 Saturday, 02:15 PM - 03:45 PM

PATI, RUPESH
160 Saturday, 10:00 AM - 11:30 AM

Patil, Rahul
71 Friday, 01:30 PM - 03:00 PM

Paul, Jomon
232 Saturday, 02:15 PM - 03:45 PM

Paulraj, Antony
325 Sunday, 02:45 PM - 04:15 PM

Pearce, Stephen
4 Friday, 08:00 AM - 09:30 AM

Pedraza-Martinez, Alfonso
7 Friday, 08:00 AM - 09:30 AM
215 Saturday, 02:15 PM - 03:45 PM

Peghini, Patricia
175 Saturday, 10:00 AM - 11:30 AM

Peiro-Signes, Angel
56 Friday, 01:30 PM - 03:00 PM

Pekec, Sasa
69 Friday, 01:30 PM - 03:00 PM
100 Friday, 03:30 PM - 05:00 PM

Pekgun, Pelin
143 Saturday, 08:00 AM - 09:30 AM
146 Saturday, 08:00 AM - 09:30 AM
358 Sunday, 04:30 PM - 06:00 PM

Pelton, Rylie
238 Saturday, 04:00 PM - 05:30 PM

Peña, Camilo
316 Sunday, 02:45 PM - 04:15 PM

Peng, Chen
257 Saturday, 04:00 PM - 05:30 PM

Peng, Wenli
344 Sunday, 04:30 PM - 06:00 PM

Peng, Xiaosong (David)
275 Sunday, 08:00 AM - 09:30 AM
366 Monday, 08:00 AM - 09:30 AM

Perakis, Georgia
83 Friday, 03:30 PM - 05:00 PM

Perdikaki, Olga
151 Saturday, 08:00 AM - 09:30 AM
205 Saturday, 12:30 PM - 02:00 PM

Perea Martins, João Eduardo
290 Sunday, 09:45 AM - 11:15 AM

Pereira, Susana
303 Sunday, 09:45 AM - 11:15 AM

Perez, Noel
189 Saturday, 12:30 PM - 02:00 PM
243 Saturday, 04:00 PM - 05:30 PM

Perrone, Giovanni
40 Friday, 10:00 AM - 11:30 AM
71 Friday, 01:30 PM - 03:00 PM

Perunovic, Zoran
93 Friday, 03:30 PM - 05:00 PM

Pestana, Aline
35 Friday, 10:00 AM - 11:30 AM

Peter, Moritz
43 Friday, 10:00 AM - 11:30 AM

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Petersen, Kenneth
72 Friday, 01:30 PM - 03:00 PM

Petersen, Moritz
53 Friday, 01:30 PM - 03:00 PM

Pettit, Stephen
60 Friday, 01:30 PM - 03:00 PM
85 Friday, 03:30 PM - 05:00 PM

Pfeiffer, Dominik
343 Sunday, 04:30 PM - 06:00 PM

Pham, John
80 Friday, 03:30 PM - 05:00 PM

Phan, Anh
351 Sunday, 04:30 PM - 06:00 PM

Philpott, Elaine
326 Sunday, 02:45 PM - 04:15 PM

Picasso, Fernando
115 Friday, 05:15 PM - 06:45 PM

Picolo, Jaime
231 Saturday, 02:15 PM - 03:45 PM

Pilehvar, Ali
157 Saturday, 10:00 AM - 11:30 AM

Pince, Cerag
29 Friday, 10:00 AM - 11:30 AM

Pinedo, Michael
179 Saturday, 10:00 AM - 11:30 AM

Pintao, Raphael
110 Friday, 05:15 PM - 06:45 PM

PINTO, Luiz
9 Friday, 08:00 AM - 09:30 AM

Plambeck, Erica
83 Friday, 03:30 PM - 05:00 PM

Plonski, Guilherme Ary
402 Monday, 09:45 AM - 11:15 AM

Ployhart, Robert
141 Saturday, 08:00 AM - 09:30 AM

Polak, George
180 Saturday, 10:00 AM - 11:30 AM

Polley, Lorin
322 Sunday, 02:45 PM - 04:15 PM

Ponnaiyan, Subramaniam
13 Friday, 08:00 AM - 09:30 AM
111 Friday, 05:15 PM - 06:45 PM

Ponnaiyan, Subramaniam
187 Saturday, 12:30 PM - 02:00 PM

Popocatl, Hertwin
386 Monday, 08:00 AM - 09:30 AM

Potente, Till
270 Sunday, 08:00 AM - 09:30 AM
395 Monday, 09:45 AM - 11:15 AM

Pourakbar, Morteza
206 Saturday, 12:30 PM - 02:00 PM
393 Monday, 09:45 AM - 11:15 AM

Pozo, Hamilton
180 Saturday, 10:00 AM - 11:30 AM
313 Sunday, 02:45 PM - 04:15 PM
355 Sunday, 04:30 PM - 06:00 PM
383 Monday, 08:00 AM - 09:30 AM
408 Monday, 09:45 AM - 11:15 AM

Pozo, Roselaine
313 Sunday, 02:45 PM - 04:15 PM
383 Monday, 08:00 AM - 09:30 AM

Pozzo, Danielle
11 Friday, 08:00 AM - 09:30 AM

Prajogo, Daniel
211 Saturday, 02:15 PM - 03:45 PM

Prajogo, Daniel
98 Friday, 03:30 PM - 05:00 PM

Prakash, Rachna
107 Friday, 05:15 PM - 06:45 PM

Prester, Jasna
46 Friday, 10:00 AM - 11:30 AM

Price, Devon
12 Friday, 08:00 AM - 09:30 AM

Price, Stuart
2 Friday, 08:00 AM - 09:30 AM

Price, Willard
293 Sunday, 09:45 AM - 11:15 AM

Protil, Roberto
217 Saturday, 02:15 PM - 03:45 PM

Pulles, Niels
72 Friday, 01:30 PM - 03:00 PM

Punnakitikashem, Prattana
38 Friday, 10:00 AM - 11:30 AM
381 Monday, 08:00 AM - 09:30 AM

Q

Qi, Lian
22 Friday, 08:00 AM - 09:30 AM

Qian, Yu
394 Monday, 09:45 AM - 11:15 AM

Qiang, Qiang
134 Saturday, 08:00 AM - 09:30 AM

Qin, Fei
27 Friday, 10:00 AM - 11:30 AM

Qin, Jin
394 Monday, 09:45 AM - 11:15 AM

Qiu, Rhea
83 Friday, 03:30 PM - 05:00 PM

Qiu, Shanshan
308 Sunday, 09:45 AM - 11:15 AM

Quaglia, João Luis
252 Saturday, 04:00 PM - 05:30 PM

Quante, Rainer
45 Friday, 10:00 AM - 11:30 AM

Quariguasi Frota Neto, Joao
159 Saturday, 10:00 AM - 11:30 AM
212 Saturday, 02:15 PM - 03:45 PM

Queenan, Carrie
89 Friday, 03:30 PM - 05:00 PM
275 Sunday, 08:00 AM - 09:30 AM

Quek, Ser Aik
320 Sunday, 02:45 PM - 04:15 PM

R

R, Mukundan
144 Saturday, 08:00 AM - 09:30 AM

Rabinovich, Elliot
54 Friday, 01:30 PM - 03:00 PM
255 Saturday, 04:00 PM - 05:30 PM

Rablbauer, Tommy
188 Saturday, 12:30 PM - 02:00 PM

Rahmani, Morvarid
48 Friday, 10:00 AM - 11:30 AM

Rajamani, Divakar
185 Saturday, 12:30 PM - 02:00 PM

Rajapakshe, Tharanga
399 Monday, 09:45 AM - 11:15 AM

Rajapakshe, Tharanga
185 Saturday, 12:30 PM - 02:00 PM
399 Monday, 09:45 AM - 11:15 AM

Rajaram, Kumar
376 Monday, 08:00 AM - 09:30 AM

Ramachandran, Karthik
69 Friday, 01:30 PM - 03:00 PM
170 Saturday, 10:00 AM - 11:30 AM

Raman, Ananth
151 Saturday, 08:00 AM - 09:30 AM

Ramanathan, Ramakrishnan
326 Sunday, 02:45 PM - 04:15 PM

Ramanathan, Usha
151 Saturday, 08:00 AM - 09:30 AM

Ramesh, Bollapragada
228 Saturday, 02:15 PM - 03:45 PM

Ramirez-Nafarrate, Adrian
391 Monday, 09:45 AM - 11:15 AM

Rancourt, Marie-Ève
190 Saturday, 12:30 PM - 02:00 PM
382 Monday, 08:00 AM - 09:30 AM

Randall, Wesley
187 Saturday, 12:30 PM - 02:00 PM

Rangel, Vivian
316 Sunday, 02:45 PM - 04:15 PM

Rankine, Graeme
16 Friday, 08:00 AM - 09:30 AM

Rao, Shashank

Author Index

255 Saturday, 04:00 PM - 05:30 PM

Rao, Uday

24 Friday, 08:00 AM - 09:30 AM
28 Friday, 10:00 AM - 11:30 AM
107 Friday, 05:15 PM - 06:45 PM
262 Sunday, 08:00 AM - 09:30 AM
340 Sunday, 04:30 PM - 06:00 PM

Ratcliffe, Aaron

74 Friday, 01:30 PM - 03:00 PM

Raturi, Amitabh

27 Friday, 10:00 AM - 11:30 AM

Raudales Garcia, Nelson

119 Friday, 05:15 PM - 06:45 PM

Ravi, Peruvemba

76 Friday, 01:30 PM - 03:00 PM

Ravishankar, Basappa

188 Saturday, 12:30 PM - 02:00 PM

Ray, Saibal

69 Friday, 01:30 PM - 03:00 PM
149 Saturday, 08:00 AM - 09:30 AM
333 Sunday, 02:45 PM - 04:15 PM

Raz, Gal

87 Friday, 03:30 PM - 05:00 PM
133 Saturday, 08:00 AM - 09:30 AM
157 Saturday, 10:00 AM - 11:30 AM

Read, Daniel

209 Saturday, 02:15 PM - 03:45 PM

Reade, Andrew

212 Saturday, 02:15 PM - 03:45 PM

Redaelli, Emir

136 Saturday, 08:00 AM - 09:30 AM

Rees, Chris

329 Sunday, 02:45 PM - 04:15 PM

Rees, Loren

294 Sunday, 09:45 AM - 11:15 AM

Regattieri, Alberto

33 Friday, 10:00 AM - 11:30 AM

Reimann, Marc

159 Saturday, 10:00 AM - 11:30 AM
212 Saturday, 02:15 PM - 03:45 PM

Reindorp, Matthew

17 Friday, 08:00 AM - 09:30 AM

Reiner, Gerald

138 Saturday, 08:00 AM - 09:30 AM

Reinhardt, Gilles

2 Friday, 08:00 AM - 09:30 AM

Reis, Manoel

98 Friday, 03:30 PM - 05:00 PM
253 Saturday, 04:00 PM - 05:30 PM

Ren, Jie

186 Saturday, 12:30 PM - 02:00 PM

renda-tanali, Irmak

268 Sunday, 08:00 AM - 09:30 AM

Rendesi, Istvan

329 Sunday, 02:45 PM - 04:15 PM

Renofio, Adilson

290 Sunday, 09:45 AM - 11:15 AM

Revilla, Elena

228 Saturday, 02:15 PM - 03:45 PM

Reyes, Pedro

165 Saturday, 10:00 AM - 11:30 AM
242 Saturday, 04:00 PM - 05:30 PM

Ribbink, Dina

79 Friday, 03:30 PM - 05:00 PM

Ribera, Jaume

384 Monday, 08:00 AM - 09:30 AM

Rice, Sharon

318 Sunday, 02:45 PM - 04:15 PM

Riezebos, Jan

53 Friday, 01:30 PM - 03:00 PM

Rigoni, Gilson

408 Monday, 09:45 AM - 11:15 AM

Riley, Jason

251 Saturday, 04:00 PM - 05:30 PM

Rios-Mercado, Roger

204 Saturday, 12:30 PM - 02:00 PM

Rivera, Liliana

245 Saturday, 04:00 PM - 05:30 PM

Robinson, Lawrence

282 Sunday, 08:00 AM - 09:30 AM

Robison, Zach

80 Friday, 03:30 PM - 05:00 PM

Robles, Melissa

292 Sunday, 09:45 AM - 11:15 AM

Rocha, Gustavo

383 Monday, 08:00 AM - 09:30 AM

Rodrigues, Luis

134 Saturday, 08:00 AM - 09:30 AM
273 Sunday, 08:00 AM - 09:30 AM
383 Monday, 08:00 AM - 09:30 AM

Rodrigues, Marília

134 Saturday, 08:00 AM - 09:30 AM

Rodrigues, Maxweel

114 Friday, 05:15 PM - 06:45 PM
373 Monday, 08:00 AM - 09:30 AM

Rodriguez, Betzabe

386 Monday, 08:00 AM - 09:30 AM

Rodriguez, Jorge

405 Monday, 09:45 AM - 11:15 AM

Rodríguez Sánchez, Sara

57 Friday, 01:30 PM - 03:00 PM

Roehrich, Jens

320 Sunday, 02:45 PM - 04:15 PM

Roels, Guillaume

48 Friday, 10:00 AM - 11:30 AM
100 Friday, 03:30 PM - 05:00 PM
248 Saturday, 04:00 PM - 05:30 PM

Roemeling, Oskar

38 Friday, 10:00 AM - 11:30 AM

Roessler, Blake

246 Saturday, 04:00 PM - 05:30 PM

Roh, Saeyeon

60 Friday, 01:30 PM - 03:00 PM

Rohleder, Thomas

132 Saturday, 08:00 AM - 09:30 AM
272 Sunday, 08:00 AM - 09:30 AM

Rojas-Santiago, Miguel

296 Sunday, 09:45 AM - 11:15 AM

Roma, Paolo

71 Friday, 01:30 PM - 03:00 PM
97 Friday, 03:30 PM - 05:00 PM

Roman, Darlan

179 Saturday, 10:00 AM - 11:30 AM
217 Saturday, 02:15 PM - 03:45 PM

Romano, Pietro

41 Friday, 10:00 AM - 11:30 AM

Rong, Ying

101 Friday, 03:30 PM - 05:00 PM

Ropke, Renan

11 Friday, 08:00 AM - 09:30 AM

Rosa, Cyntia

110 Friday, 05:15 PM - 06:45 PM

Rosales, Claudia

262 Sunday, 08:00 AM - 09:30 AM

Rosenberg, Timothy

257 Saturday, 04:00 PM - 05:30 PM

Rosenmoller, Magda

384 Monday, 08:00 AM - 09:30 AM

Rosenzweig, Eve

89 Friday, 03:30 PM - 05:00 PM
241 Saturday, 04:00 PM - 05:30 PM
301 Sunday, 09:45 AM - 11:15 AM

Roset, Alain

178 Saturday, 10:00 AM - 11:30 AM

Ross, Anthony

166 Saturday, 10:00 AM - 11:30 AM
232 Saturday, 02:15 PM - 03:45 PM

Ross, Stephen

164 Saturday, 10:00 AM - 11:30 AM

Roth, Aleda

41 Friday, 10:00 AM - 11:30 AM
58 Friday, 01:30 PM - 03:00 PM
63 Friday, 01:30 PM - 03:00 PM
74 Friday, 01:30 PM - 03:00 PM
88 Friday, 03:30 PM - 05:00 PM
167 Saturday, 10:00 AM - 11:30 AM
214 Saturday, 02:15 PM - 03:45 PM
344 Sunday, 04:30 PM - 06:00 PM

376 Monday, 08:00 AM - 09:30 AM

Rothman, Brian

12 Friday, 08:00 AM - 09:30 AM

Rubin, Eran

306 Sunday, 09:45 AM - 11:15 AM

Rudi, Nils

224 Saturday, 02:15 PM - 03:45 PM

Ruelas, Shari

318 Sunday, 02:45 PM - 04:15 PM

Ruggiero, Sergio

316 Sunday, 02:45 PM - 04:15 PM
355 Sunday, 04:30 PM - 06:00 PM

Rui, Huaxia

139 Saturday, 08:00 AM - 09:30 AM

Rungtusanatham, Johnny

37 Friday, 10:00 AM - 11:30 AM
39 Friday, 10:00 AM - 11:30 AM

Rusmevichientong, Paat

21 Friday, 08:00 AM - 09:30 AM

Russell, Roberta

294 Sunday, 09:45 AM - 11:15 AM
318 Sunday, 02:45 PM - 04:15 PM
392 Monday, 09:45 AM - 11:15 AM

RV, Jayathirtha

120 Friday, 05:15 PM - 06:45 PM
377 Monday, 08:00 AM - 09:30 AM
403 Monday, 09:45 AM - 11:15 AM

Ryan, Jennifer

166 Saturday, 10:00 AM - 11:30 AM

S

Sabet, Ehsan

349 Sunday, 04:30 PM - 06:00 PM

Sacks, Michael

287 Sunday, 09:45 AM - 11:15 AM

Saeed, Khawaja

343 Sunday, 04:30 PM - 06:00 PM

Saghafian, Soroush

106 Friday, 05:15 PM - 06:45 PM
219 Saturday, 02:15 PM - 03:45 PM

Saghiri, Soroosh (Sam)

149 Saturday, 08:00 AM - 09:30 AM

Sahin, Ozge

281 Sunday, 08:00 AM - 09:30 AM

Salehi, Nima

213 Saturday, 02:15 PM - 03:45 PM

Salgado, Omar

225 Saturday, 02:15 PM - 03:45 PM
316 Sunday, 02:45 PM - 04:15 PM

Saliba, Juliana

40 Friday, 10:00 AM - 11:30 AM

Salles, José

373 Monday, 08:00 AM - 09:30 AM

Salo, Ahti

95 Friday, 03:30 PM - 05:00 PM

Salvador, Fabrizio

37 Friday, 10:00 AM - 11:30 AM
75 Friday, 01:30 PM - 03:00 PM
249 Saturday, 04:00 PM - 05:30 PM

Samiedaluie, Saied

28 Friday, 10:00 AM - 11:30 AM

Samorani, Michele

142 Saturday, 08:00 AM - 09:30 AM

Sampson, Scott

2 Friday, 08:00 AM - 09:30 AM
105 Friday, 05:15 PM - 06:45 PM
148 Saturday, 08:00 AM - 09:30 AM
185 Saturday, 12:30 PM - 02:00 PM

Sánchez Díaz, Jaime

257 Saturday, 04:00 PM - 05:30 PM

Sandberg, Warren

28 Friday, 10:00 AM - 11:30 AM

Sandikci, Burhaneddin

106 Friday, 05:15 PM - 06:45 PM

Santarelli, Giulia

33 Friday, 10:00 AM - 11:30 AM

Santos, Cristina Maria

313 Sunday, 02:45 PM - 04:15 PM

Santos, Eduardo

22 Friday, 08:00 AM - 09:30 AM
201 Saturday, 12:30 PM - 02:00 PM

Santos, Enise

383 Monday, 08:00 AM - 09:30 AM

Santos, Joao

22 Friday, 08:00 AM - 09:30 AM

Santos, Juliana

253 Saturday, 04:00 PM - 05:30 PM

Saraiva Junior, Abraao

108 Friday, 05:15 PM - 06:45 PM
114 Friday, 05:15 PM - 06:45 PM
152 Saturday, 08:00 AM - 09:30 AM
314 Sunday, 02:45 PM - 04:15 PM
373 Monday, 08:00 AM - 09:30 AM
400 Monday, 09:45 AM - 11:15 AM

Sarathy, Rathin

265 Sunday, 08:00 AM - 09:30 AM

Sarkis, Joseph

341 Sunday, 04:30 PM - 06:00 PM

Saurin, Tarcísio

141 Saturday, 08:00 AM - 09:30 AM
403 Monday, 09:45 AM - 11:15 AM

Savaskan, Canan

205 Saturday, 12:30 PM - 02:00 PM

Sawaya, William

302 Sunday, 09:45 AM - 11:15 AM

Schiele, Holger

72 Friday, 01:30 PM - 03:00 PM

Schiffels, Sebastian

105 Friday, 05:15 PM - 06:45 PM

Schiffling, Sarah

33 Friday, 10:00 AM - 11:30 AM
319 Sunday, 02:45 PM - 04:15 PM

Schikora, Paul

295 Sunday, 09:45 AM - 11:15 AM

Schlapp, Jochen

97 Friday, 03:30 PM - 05:00 PM

Schleper, Martin C.

280 Sunday, 08:00 AM - 09:30 AM

Schmenner, Roger

113 Friday, 05:15 PM - 06:45 PM

Schmidt, Glen

87 Friday, 03:30 PM - 05:00 PM
151 Saturday, 08:00 AM - 09:30 AM

Schmidt, Ulrich

80 Friday, 03:30 PM - 05:00 PM

Schniederjans, Dara

58 Friday, 01:30 PM - 03:00 PM
254 Saturday, 04:00 PM - 05:30 PM
396 Monday, 09:45 AM - 11:15 AM

Schniederjans, Marc

58 Friday, 01:30 PM - 03:00 PM

Schoenherr, Tobias

89 Friday, 03:30 PM - 05:00 PM

Scholten, Kirstin

33 Friday, 10:00 AM - 11:30 AM
225 Saturday, 02:15 PM - 03:45 PM

Scholz-Reiter, Bernd

322 Sunday, 02:45 PM - 04:15 PM

Schroeder, Roger

249 Saturday, 04:00 PM - 05:30 PM
378 Monday, 08:00 AM - 09:30 AM

Schuh, Günther

270 Sunday, 08:00 AM - 09:30 AM
395 Monday, 09:45 AM - 11:15 AM

Schupp, Florian

79 Friday, 03:30 PM - 05:00 PM
183 Saturday, 12:30 PM - 02:00 PM

Scilla, Ryan

80 Friday, 03:30 PM - 05:00 PM

Scoton, Edvaldo José

290 Sunday, 09:45 AM - 11:15 AM
400 Monday, 09:45 AM - 11:15 AM

Scudder, Gary

301 Sunday, 09:45 AM - 11:15 AM

Scurlock, Corey

262 Sunday, 08:00 AM - 09:30 AM

Secchi, Enrico

88 Friday, 03:30 PM - 05:00 PM

Secomandi, Nicola

172 Saturday, 10:00 AM - 11:30 AM

Segarra-Oña, María-del-Val

56 Friday, 01:30 PM - 03:00 PM

Selcuk, Baris

218 Saturday, 02:15 PM - 03:45 PM

Semple, John

48 Friday, 10:00 AM - 11:30 AM

Sen, Kabir

165 Saturday, 10:00 AM - 11:30 AM

Sena, David

108 Friday, 05:15 PM - 06:45 PM
114 Friday, 05:15 PM - 06:45 PM
314 Sunday, 02:45 PM - 04:15 PM
408 Monday, 09:45 AM - 11:15 AM

Senot, Claire

197 Saturday, 12:30 PM - 02:00 PM
366 Monday, 08:00 AM - 09:30 AM

Serson, Fernando

392 Monday, 09:45 AM - 11:15 AM

Seshadri, Sridhar

147 Saturday, 08:00 AM - 09:30 AM

Sethi, Rajesh

39 Friday, 10:00 AM - 11:30 AM

Sethi, Suresh

94 Friday, 03:30 PM - 05:00 PM
147 Saturday, 08:00 AM - 09:30 AM
235 Saturday, 04:00 PM - 05:30 PM

Severo, Ana

383 Monday, 08:00 AM - 09:30 AM

Severo, Eliana

392 Monday, 09:45 AM - 11:15 AM

Shah, Rachna

63 Friday, 01:30 PM - 03:00 PM
200 Saturday, 12:30 PM - 02:00 PM
241 Saturday, 04:00 PM - 05:30 PM
329 Sunday, 02:45 PM - 04:15 PM

Shalpegin, Timofey

228 Saturday, 02:15 PM - 03:45 PM

Shamir, Noam

333 Sunday, 02:45 PM - 04:15 PM
370 Monday, 08:00 AM - 09:30 AM

Shang, Guangzhi

97 Friday, 03:30 PM - 05:00 PM
141 Saturday, 08:00 AM - 09:30 AM

Shang, Jennifer

22 Friday, 08:00 AM - 09:30 AM

Shang, Kevin

68 Friday, 01:30 PM - 03:00 PM
219 Saturday, 02:15 PM - 03:45 PM

Sharkey Scott, Pamela

33 Friday, 10:00 AM - 11:30 AM
225 Saturday, 02:15 PM - 03:45 PM

Sharma, Luv

275 Sunday, 08:00 AM - 09:30 AM

Sharma, Mayank

42 Friday, 10:00 AM - 11:30 AM
198 Saturday, 12:30 PM - 02:00 PM

Sheffi, Yossi

245 Saturday, 04:00 PM - 05:30 PM

Sheikh, Amy

391 Monday, 09:45 AM - 11:15 AM

Shen, Bin

10 Friday, 08:00 AM - 09:30 AM

Shen, Guwen

266 Sunday, 08:00 AM - 09:30 AM

Shen, Ping

111 Friday, 05:15 PM - 06:45 PM

Shen, Wenjing

19 Friday, 08:00 AM - 09:30 AM

Shetty, Bala

248 Saturday, 04:00 PM - 05:30 PM

Shi, Pengyi

106 Friday, 05:15 PM - 06:45 PM

Shi , Peter

162 Saturday, 10:00 AM - 11:30 AM

Shimizu, Ullisses

231 Saturday, 02:15 PM - 03:45 PM

Shin, Hojung

273 Sunday, 08:00 AM - 09:30 AM

Shin, Hyoduk

45 Friday, 10:00 AM - 11:30 AM
333 Sunday, 02:45 PM - 04:15 PM
370 Monday, 08:00 AM - 09:30 AM

Shittu, Ekundayo

319 Sunday, 02:45 PM - 04:15 PM

Shockley, Jeff

187 Saturday, 12:30 PM - 02:00 PM

Shum, Stephen

370 Monday, 08:00 AM - 09:30 AM

Siegler, Janaina

217 Saturday, 02:15 PM - 03:45 PM
365 Monday, 08:00 AM - 09:30 AM
383 Monday, 08:00 AM - 09:30 AM

Siemsen, Enno

1 Friday, 08:00 AM - 09:30 AM
63 Friday, 01:30 PM - 03:00 PM
209 Saturday, 02:15 PM - 03:45 PM

Silberholz, John

334 Sunday, 02:45 PM - 04:15 PM

Silva, Elza

35 Friday, 10:00 AM - 11:30 AM

Silva, Graça

40 Friday, 10:00 AM - 11:30 AM

Silva, Marcia

30 Friday, 10:00 AM - 11:30 AM

Silva, Renata

134 Saturday, 08:00 AM - 09:30 AM
372 Monday, 08:00 AM - 09:30 AM
383 Monday, 08:00 AM - 09:30 AM

Silva, Vanina

386 Monday, 08:00 AM - 09:30 AM

Silveira , Amélia

175 Saturday, 10:00 AM - 11:30 AM

Simchi-Levi, David

297 Sunday, 09:45 AM - 11:15 AM

Simpson, Natalie

76 Friday, 01:30 PM - 03:00 PM

Singh, Kashi

289 Sunday, 09:45 AM - 11:15 AM

Singhal, Vinod

227 Saturday, 02:15 PM - 03:45 PM

SINGHAL, CHERRY

141 Saturday, 08:00 AM - 09:30 AM
274 Sunday, 08:00 AM - 09:30 AM

Sinha, Kingshuk

168 Saturday, 10:00 AM - 11:30 AM

Slaugh, Vincent

146 Saturday, 08:00 AM - 09:30 AM

Slaughter, Sandra

299 Sunday, 09:45 AM - 11:15 AM

Sloan, Thomas

341 Sunday, 04:30 PM - 06:00 PM

Smart, Philip

4 Friday, 08:00 AM - 09:30 AM

Smith, Neale

250 Saturday, 04:00 PM - 05:30 PM

Smith, Stephen

177 Saturday, 10:00 AM - 11:30 AM

Smith, Timothy

238 Saturday, 04:00 PM - 05:30 PM

Snider, Brent

382 Monday, 08:00 AM - 09:30 AM

Snyder, Larry

121 Friday, 05:15 PM - 06:45 PM

Soares, Eva

408 Monday, 09:45 AM - 11:15 AM

Soares, Jessica Elise

31 Friday, 10:00 AM - 11:30 AM

Soares, Jonathan

31 Friday, 10:00 AM - 11:30 AM

Soares, Washington Luiz

31 Friday, 10:00 AM - 11:30 AM
180 Saturday, 10:00 AM - 11:30 AM
355 Sunday, 04:30 PM - 06:00 PM

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Sodhi, ManMohan
343 Sunday, 04:30 PM - 06:00 PM

Sohail, Tashfeen
249 Saturday, 04:00 PM - 05:30 PM

Sohn, Min-Woong
288 Sunday, 09:45 AM - 11:15 AM

Sohoni, Milind
282 Sunday, 08:00 AM - 09:30 AM

Søilen , Klaus
175 Saturday, 10:00 AM - 11:30 AM

Sommer, Svenja
196 Saturday, 12:30 PM - 02:00 PM
241 Saturday, 04:00 PM - 05:30 PM

Soneye, Alabi
60 Friday, 01:30 PM - 03:00 PM

Song, Jeannette
42 Friday, 10:00 AM - 11:30 AM
370 Monday, 08:00 AM - 09:30 AM

Sosic, Greys
55 Friday, 01:30 PM - 03:00 PM

Soto Urbina, Ligia
375 Monday, 08:00 AM - 09:30 AM

Sousa, Emanuely Paskally
108 Friday, 05:15 PM - 06:45 PM

Sousa, Jorge
161 Saturday, 10:00 AM - 11:30 AM

Southin, Nancy
255 Saturday, 04:00 PM - 05:30 PM

Souza, Eguinaldo
302 Sunday, 09:45 AM - 11:15 AM

Souza, Gilvan
55 Friday, 01:30 PM - 03:00 PM

Souza, Robert de
303 Sunday, 09:45 AM - 11:15 AM

Souza, Tereza
347 Sunday, 04:30 PM - 06:00 PM

Souza Santos, Suzana
270 Sunday, 08:00 AM - 09:30 AM

Sox, Charles
102 Friday, 03:30 PM - 05:00 PM

Spengler, Thomas
140 Saturday, 08:00 AM - 09:30 AM

Spina, Gianluca
136 Saturday, 08:00 AM - 09:30 AM

Spinler, Stefan
6 Friday, 08:00 AM - 09:30 AM
43 Friday, 10:00 AM - 11:30 AM
112 Friday, 05:15 PM - 06:45 PM
178 Saturday, 10:00 AM - 11:30 AM
328 Sunday, 02:45 PM - 04:15 PM

Squillante, Mark
42 Friday, 10:00 AM - 11:30 AM
198 Saturday, 12:30 PM - 02:00 PM

Sridharan, V
251 Saturday, 04:00 PM - 05:30 PM

Srinivasan, Ravi
39 Friday, 10:00 AM - 11:30 AM
193 Saturday, 12:30 PM - 02:00 PM

SriramachandraMurthy, Rajendran
170 Saturday, 10:00 AM - 11:30 AM

Sriskandarajah, Chelliah
57 Friday, 01:30 PM - 03:00 PM
146 Saturday, 08:00 AM - 09:30 AM
180 Saturday, 10:00 AM - 11:30 AM
399 Monday, 09:45 AM - 11:15 AM

Srivastava, Rajesh
175 Saturday, 10:00 AM - 11:30 AM
214 Saturday, 02:15 PM - 03:45 PM

Srivastava, Rajiv
232 Saturday, 02:15 PM - 03:45 PM
289 Sunday, 09:45 AM - 11:15 AM
290 Sunday, 09:45 AM - 11:15 AM
379 Monday, 08:00 AM - 09:30 AM

Srivastava, Shirish C.
384 Monday, 08:00 AM - 09:30 AM

St. Jacques, Paul
2 Friday, 08:00 AM - 09:30 AM
35 Friday, 10:00 AM - 11:30 AM

Staberhofer, Franz
188 Saturday, 12:30 PM - 02:00 PM

Stading, Gary
190 Saturday, 12:30 PM - 02:00 PM

Staffensen, Lasse
93 Friday, 03:30 PM - 05:00 PM

Stampfer, Christina
140 Saturday, 08:00 AM - 09:30 AM

Stapleton, Drew
142 Saturday, 08:00 AM - 09:30 AM
303 Sunday, 09:45 AM - 11:15 AM

Starkey, Chris
254 Saturday, 04:00 PM - 05:30 PM

Starr, Martin
293 Sunday, 09:45 AM - 11:15 AM

Stauffer, Jon
215 Saturday, 02:15 PM - 03:45 PM

Stavrulaki, Euthemia
6 Friday, 08:00 AM - 09:30 AM

Stecke, Kathryn
99 Friday, 03:30 PM - 05:00 PM
169 Saturday, 10:00 AM - 11:30 AM
203 Saturday, 12:30 PM - 02:00 PM
410 Monday, 09:45 AM - 11:15 AM

Steinker, Sebastian
141 Saturday, 08:00 AM - 09:30 AM

Stevenson, Mark
385 Monday, 08:00 AM - 09:30 AM

Stimpson, Ella
226 Saturday, 02:15 PM - 03:45 PM

Sting, Fabian
171 Saturday, 10:00 AM - 11:30 AM
385 Monday, 08:00 AM - 09:30 AM

Stock, Gregory
308 Sunday, 09:45 AM - 11:15 AM

Stolletz, Raik
108 Friday, 05:15 PM - 06:45 PM

Stößlein, Martin
315 Sunday, 02:45 PM - 04:15 PM

Stratman, Jeff
202 Saturday, 12:30 PM - 02:00 PM

Su, Jack C. P.
328 Sunday, 02:45 PM - 04:15 PM

Su, Ping
178 Saturday, 10:00 AM - 11:30 AM

Su, Shong-lee
53 Friday, 01:30 PM - 03:00 PM

Su, Xuanming
73 Friday, 01:30 PM - 03:00 PM
100 Friday, 03:30 PM - 05:00 PM
204 Saturday, 12:30 PM - 02:00 PM

Su, Yong
255 Saturday, 04:00 PM - 05:30 PM

Subramanian, Nachiappan
316 Sunday, 02:45 PM - 04:15 PM
345 Sunday, 04:30 PM - 06:00 PM
381 Monday, 08:00 AM - 09:30 AM

Subramanian, Ravi
149 Saturday, 08:00 AM - 09:30 AM

Sun, Daewon
166 Saturday, 10:00 AM - 11:30 AM

Sun, Haoying
5 Friday, 08:00 AM - 09:30 AM
99 Friday, 03:30 PM - 05:00 PM

Sun, Jiong
65 Friday, 01:30 PM - 03:00 PM

Sun, Ke
230 Saturday, 02:15 PM - 03:45 PM

Sun, Peng
236 Saturday, 04:00 PM - 05:30 PM

Sundar, Subhashree
202 Saturday, 12:30 PM - 02:00 PM

Supangkat, Hendrarto
65 Friday, 01:30 PM - 03:00 PM

Suresh, Nallan
245 Saturday, 04:00 PM - 05:30 PM

Surti, Chirag
79 Friday, 03:30 PM - 05:00 PM
276 Sunday, 08:00 AM - 09:30 AM

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Swamidass, Paul
144 Saturday, 08:00 AM - 09:30 AM

Swaminathan, Jayashankar
5 Friday, 08:00 AM - 09:30 AM
29 Friday, 10:00 AM - 11:30 AM
205 Saturday, 12:30 PM - 02:00 PM
291 Sunday, 09:45 AM - 11:15 AM

Swaroop, Prem
178 Saturday, 10:00 AM - 11:30 AM

Swierczek, Artur
317 Sunday, 02:45 PM - 04:15 PM

Swink, Morgan
30 Friday, 10:00 AM - 11:30 AM
98 Friday, 03:30 PM - 05:00 PM
179 Saturday, 10:00 AM - 11:30 AM
221 Saturday, 02:15 PM - 03:45 PM
247 Saturday, 04:00 PM - 05:30 PM
295 Sunday, 09:45 AM - 11:15 AM

Swisher, Gary
109 Friday, 05:15 PM - 06:45 PM

Switzer, Fred
214 Saturday, 02:15 PM - 03:45 PM
222 Saturday, 02:15 PM - 03:45 PM

Szegedi, Zoltan
329 Sunday, 02:45 PM - 04:15 PM

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Tabosa, Cristiane
114 Friday, 05:15 PM - 06:45 PM
373 Monday, 08:00 AM - 09:30 AM

Tachizawa, Takeshy
180 Saturday, 10:00 AM - 11:30 AM
313 Sunday, 02:45 PM - 04:15 PM
383 Monday, 08:00 AM - 09:30 AM

Talamo, Jose
253 Saturday, 04:00 PM - 05:30 PM

Talluri, Kalyan
176 Saturday, 10:00 AM - 11:30 AM

Talluri, Srinivas
35 Friday, 10:00 AM - 11:30 AM
95 Friday, 03:30 PM - 05:00 PM
121 Friday, 05:15 PM - 06:45 PM

Tan, Keah-Choon
316 Sunday, 02:45 PM - 04:15 PM

Tan, Yinliang (Ricky)
45 Friday, 10:00 AM - 11:30 AM

TAN, Kok Choon
282 Sunday, 08:00 AM - 09:30 AM

Tanajura, Ana
292 Sunday, 09:45 AM - 11:15 AM

Taneri, Niyazi
171 Saturday, 10:00 AM - 11:30 AM
300 Sunday, 09:45 AM - 11:15 AM

Tang, Christopher
19 Friday, 08:00 AM - 09:30 AM
169 Saturday, 10:00 AM - 11:30 AM
297 Sunday, 09:45 AM - 11:15 AM

Tang, Lixin
140 Saturday, 08:00 AM - 09:30 AM

Tang, Sammi
17 Friday, 08:00 AM - 09:30 AM

Tang, Wenjie
157 Saturday, 10:00 AM - 11:30 AM

Tanrisever, Fehmi
68 Friday, 01:30 PM - 03:00 PM
197 Saturday, 12:30 PM - 02:00 PM
294 Sunday, 09:45 AM - 11:15 AM

Tansitpong, Praowpan
82 Friday, 03:30 PM - 05:00 PM

Tarakci, Hakan
13 Friday, 08:00 AM - 09:30 AM
111 Friday, 05:15 PM - 06:45 PM

Tate, Wendy
254 Saturday, 04:00 PM - 05:30 PM
299 Sunday, 09:45 AM - 11:15 AM

Tatiana, Kogan
238 Saturday, 04:00 PM - 05:30 PM

Tatikonda, Mohan
217 Saturday, 02:15 PM - 03:45 PM

Taylor, Terry
83 Friday, 03:30 PM - 05:00 PM

Tayur, Sridhar
146 Saturday, 08:00 AM - 09:30 AM

Teixeira, Rafael
136 Saturday, 08:00 AM - 09:30 AM
347 Sunday, 04:30 PM - 06:00 PM

Templar, Simon
410 Monday, 09:45 AM - 11:15 AM

Tenhiala, Antti
75 Friday, 01:30 PM - 03:00 PM

Teodoro de Oliveira, Mayara
11 Friday, 08:00 AM - 09:30 AM
93 Friday, 03:30 PM - 05:00 PM
119 Friday, 05:15 PM - 06:45 PM
179 Saturday, 10:00 AM - 11:30 AM

Tereyagoglu, Necati
94 Friday, 03:30 PM - 05:00 PM
149 Saturday, 08:00 AM - 09:30 AM

Terlunen, Sebastian
343 Sunday, 04:30 PM - 06:00 PM

Teruel, Marcelo
40 Friday, 10:00 AM - 11:30 AM

Terwiesch, Christian
227 Saturday, 02:15 PM - 03:45 PM
246 Saturday, 04:00 PM - 05:30 PM

Tescari, Fabio
162 Saturday, 10:00 AM - 11:30 AM
217 Saturday, 02:15 PM - 03:45 PM

Tesha, Clemence
46 Friday, 10:00 AM - 11:30 AM

Thomas, Barrett
305 Sunday, 09:45 AM - 11:15 AM

Thomas, Doug
192 Saturday, 12:30 PM - 02:00 PM

Thomaz de Araújo, Allan
367 Monday, 08:00 AM - 09:30 AM

Thompson, Debra
282 Sunday, 08:00 AM - 09:30 AM

Thompson, Robert
384 Monday, 08:00 AM - 09:30 AM

Thurer, Matthias
385 Monday, 08:00 AM - 09:30 AM

Tian, Fang
55 Friday, 01:30 PM - 03:00 PM

Tian, Zhili
76 Friday, 01:30 PM - 03:00 PM
274 Sunday, 08:00 AM - 09:30 AM

Tian , Quan
333 Sunday, 02:45 PM - 04:15 PM

Tibes, Celio
213 Saturday, 02:15 PM - 03:45 PM

Tirado, Gregorio
215 Saturday, 02:15 PM - 03:45 PM

Titchen, Mike
329 Sunday, 02:45 PM - 04:15 PM

Tiwari, Vikram
12 Friday, 08:00 AM - 09:30 AM
28 Friday, 10:00 AM - 11:30 AM
132 Saturday, 08:00 AM - 09:30 AM

Toktay, Beril
29 Friday, 10:00 AM - 11:30 AM
81 Friday, 03:30 PM - 05:00 PM
133 Saturday, 08:00 AM - 09:30 AM

Tongarlak, Mustafa
133 Saturday, 08:00 AM - 09:30 AM

Tontini, Gerson
175 Saturday, 10:00 AM - 11:30 AM
231 Saturday, 02:15 PM - 03:45 PM

Toptal, Aysegul
186 Saturday, 12:30 PM - 02:00 PM

Torabi, Ali
242 Saturday, 04:00 PM - 05:30 PM
293 Sunday, 09:45 AM - 11:15 AM

Torabi, Elham
23 Friday, 08:00 AM - 09:30 AM
262 Sunday, 08:00 AM - 09:30 AM

Tortato, Ubirată
229 Saturday, 02:15 PM - 03:45 PM

Toschi, Laura

3 Friday, 08:00 AM - 09:30 AM

Transchel, Sandra

125 Friday, 05:15 PM - 06:45 PM
192 Saturday, 12:30 PM - 02:00 PM
203 Saturday, 12:30 PM - 02:00 PM
354 Sunday, 04:30 PM - 06:00 PM

Trautmann, Norbert

244 Saturday, 04:00 PM - 05:30 PM

Tripathy, Anshuman

352 Sunday, 04:30 PM - 06:00 PM

Tsay, Andy

123 Friday, 05:15 PM - 06:45 PM
307 Sunday, 09:45 AM - 11:15 AM

Tseng, Fan

265 Sunday, 08:00 AM - 09:30 AM

Tucci, Gabriel

101 Friday, 03:30 PM - 05:00 PM

Tucker, Anita

132 Saturday, 08:00 AM - 09:30 AM
197 Saturday, 12:30 PM - 02:00 PM
314 Sunday, 02:45 PM - 04:15 PM
376 Monday, 08:00 AM - 09:30 AM

Turkulainen, Virpi

98 Friday, 03:30 PM - 05:00 PM

Turner, John

202 Saturday, 12:30 PM - 02:00 PM
332 Sunday, 02:45 PM - 04:15 PM

Tyagi, Rajesh

160 Saturday, 10:00 AM - 11:30 AM
179 Saturday, 10:00 AM - 11:30 AM

Tyworth, John

396 Monday, 09:45 AM - 11:15 AM

U

Udenio, Maximiliano

43 Friday, 10:00 AM - 11:30 AM

Ugarte, Gustavo

318 Sunday, 02:45 PM - 04:15 PM

Ulrich, Karl

196 Saturday, 12:30 PM - 02:00 PM

Umpfenbach, Ed

354 Sunday, 04:30 PM - 06:00 PM

Upward, Antony

341 Sunday, 04:30 PM - 06:00 PM

Urban, Timothy

76 Friday, 01:30 PM - 03:00 PM

Usta, Mericcan

126 Friday, 05:15 PM - 06:45 PM

V

Vaidyanathan, Ramnath

47 Friday, 10:00 AM - 11:30 AM

Vakharia, Asoo

185 Saturday, 12:30 PM - 02:00 PM
357 Sunday, 04:30 PM - 06:00 PM

Vakhutinsky, Andrew

21 Friday, 08:00 AM - 09:30 AM
42 Friday, 10:00 AM - 11:30 AM

Valarelli, Ivaldo

290 Sunday, 09:45 AM - 11:15 AM

Valenti, Filippo

71 Friday, 01:30 PM - 03:00 PM

Van de Klundert, Joris

242 Saturday, 04:00 PM - 05:30 PM

Van der Vaart, Taco

80 Friday, 03:30 PM - 05:00 PM

Van der Vliet, K.

17 Friday, 08:00 AM - 09:30 AM

Van Donk, Dirk Pieter

53 Friday, 01:30 PM - 03:00 PM

Van Jaarsveld, Willem

218 Saturday, 02:15 PM - 03:45 PM

Van Oyen, Mark

106 Friday, 05:15 PM - 06:45 PM
132 Saturday, 08:00 AM - 09:30 AM
219 Saturday, 02:15 PM - 03:45 PM
246 Saturday, 04:00 PM - 05:30 PM

Van Wassenhove, Luk

3 Friday, 08:00 AM - 09:30 AM
7 Friday, 08:00 AM - 09:30 AM
112 Friday, 05:15 PM - 06:45 PM
159 Saturday, 10:00 AM - 11:30 AM
189 Saturday, 12:30 PM - 02:00 PM
215 Saturday, 02:15 PM - 03:45 PM
243 Saturday, 04:00 PM - 05:30 PM

Van Wezel, Wout

287 Sunday, 09:45 AM - 11:15 AM

Van Woensel, Tom

198 Saturday, 12:30 PM - 02:00 PM

Vanajakumari, Manoj

180 Saturday, 10:00 AM - 11:30 AM

Vanalle, Rosangela

31 Friday, 10:00 AM - 11:30 AM
187 Saturday, 12:30 PM - 02:00 PM
240 Saturday, 04:00 PM - 05:30 PM
373 Monday, 08:00 AM - 09:30 AM
401 Monday, 09:45 AM - 11:15 AM

Vargas-Rosales, Cesar

250 Saturday, 04:00 PM - 05:30 PM

Varma, Nikhil

179 Saturday, 10:00 AM - 11:30 AM

Varol, Tulay

99 Friday, 03:30 PM - 05:00 PM

Vasconcelos, Marcos Augusto

120 Friday, 05:15 PM - 06:45 PM

Vastag, Gyula

329 Sunday, 02:45 PM - 04:15 PM

Vasudeva, Gurneeta

63 Friday, 01:30 PM - 03:00 PM

Vatamidou, Eleni

43 Friday, 10:00 AM - 11:30 AM

Vaz lopes, Antonio

11 Friday, 08:00 AM - 09:30 AM
93 Friday, 03:30 PM - 05:00 PM

Vedantam, Aditya

159 Saturday, 10:00 AM - 11:30 AM

Veeraraghavan, Senthil

94 Friday, 03:30 PM - 05:00 PM
204 Saturday, 12:30 PM - 02:00 PM

Veldman, Jasper

72 Friday, 01:30 PM - 03:00 PM

Velez-Gallego, Mario

296 Sunday, 09:45 AM - 11:15 AM
302 Sunday, 09:45 AM - 11:15 AM

Venkatachalam, Saravanan

102 Friday, 03:30 PM - 05:00 PM

Venkataraman, Sriram

376 Monday, 08:00 AM - 09:30 AM

Ventura, Jose

236 Saturday, 04:00 PM - 05:30 PM

Vera-Muñoz, Sandra

107 Friday, 05:15 PM - 06:45 PM

Verbrigghe, Jasmijn

162 Saturday, 10:00 AM - 11:30 AM

Vereecke, Ann

162 Saturday, 10:00 AM - 11:30 AM

Verghese, Anto

228 Saturday, 02:15 PM - 03:45 PM

Verma, Rohit

56 Friday, 01:30 PM - 03:00 PM
88 Friday, 03:30 PM - 05:00 PM
89 Friday, 03:30 PM - 05:00 PM
200 Saturday, 12:30 PM - 02:00 PM
211 Saturday, 02:15 PM - 03:45 PM

Verter, Vedat

28 Friday, 10:00 AM - 11:30 AM

Vianna, Augusto

120 Friday, 05:15 PM - 06:45 PM

Vidyarthi, Navneet

179 Saturday, 10:00 AM - 11:30 AM

Vieira, Carolina Luisa

369 Monday, 08:00 AM - 09:30 AM

Vieira Junior, Milton

160 Saturday, 10:00 AM - 11:30 AM
230 Saturday, 02:15 PM - 03:45 PM

Villar, Cristiane

115 Friday, 05:15 PM - 06:45 PM
217 Saturday, 02:15 PM - 03:45 PM
365 Monday, 08:00 AM - 09:30 AM
383 Monday, 08:00 AM - 09:30 AM

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Villena, Verónica
228 Saturday, 02:15 PM - 03:45 PM

Vinelli, Andrea
9 Friday, 08:00 AM - 09:30 AM
37 Friday, 10:00 AM - 11:30 AM
136 Saturday, 08:00 AM - 09:30 AM

Viola, Natalia
290 Sunday, 09:45 AM - 11:15 AM

Vitoriano, Begona
215 Saturday, 02:15 PM - 03:45 PM

Vogelgesang, Stephanie
192 Saturday, 12:30 PM - 02:00 PM

Voigt, Kai-Ingo
67 Friday, 01:30 PM - 03:00 PM
401 Monday, 09:45 AM - 11:15 AM

Von Haartman, Robin
280 Sunday, 08:00 AM - 09:30 AM

Voss, Chris
30 Friday, 10:00 AM - 11:30 AM
114 Friday, 05:15 PM - 06:45 PM
378 Monday, 08:00 AM - 09:30 AM

Vossen, Thomas
176 Saturday, 10:00 AM - 11:30 AM

Vries, Harwin
242 Saturday, 04:00 PM - 05:30 PM

W

Wachtendorf, Tricia
243 Saturday, 04:00 PM - 05:30 PM

Wagelmans, Albert
242 Saturday, 04:00 PM - 05:30 PM

Wagenstetter, Nikolaus
231 Saturday, 02:15 PM - 03:45 PM

Wagner, Stephan
20 Friday, 08:00 AM - 09:30 AM
43 Friday, 10:00 AM - 11:30 AM
271 Sunday, 08:00 AM - 09:30 AM
386 Monday, 08:00 AM - 09:30 AM

Wallace, Ashlie
298 Sunday, 09:45 AM - 11:15 AM

Walsman, Matthew
88 Friday, 03:30 PM - 05:00 PM
105 Friday, 05:15 PM - 06:45 PM
211 Saturday, 02:15 PM - 03:45 PM

Wambach , Achim
235 Saturday, 04:00 PM - 05:30 PM

Wan, Xiang
109 Friday, 05:15 PM - 06:45 PM

Wan, Zhixi
136 Saturday, 08:00 AM - 09:30 AM
139 Saturday, 08:00 AM - 09:30 AM

Wang, Charles
65 Friday, 01:30 PM - 03:00 PM

Wang, Gang
291 Sunday, 09:45 AM - 11:15 AM

Wang, Hai-Jun
190 Saturday, 12:30 PM - 02:00 PM
242 Saturday, 04:00 PM - 05:30 PM

Wang, Haiyan
110 Friday, 05:15 PM - 06:45 PM

Wang, jing
190 Saturday, 12:30 PM - 02:00 PM

Wang, Lan
185 Saturday, 12:30 PM - 02:00 PM

Wang, Lina
344 Sunday, 04:30 PM - 06:00 PM

Wang, Min
172 Saturday, 10:00 AM - 11:30 AM

Wang, Qiang
378 Monday, 08:00 AM - 09:30 AM

Wang, Robert
324 Sunday, 02:45 PM - 04:15 PM

Wang, Ruoxuan
150 Saturday, 08:00 AM - 09:30 AM

Wang, Shouqiang
41 Friday, 10:00 AM - 11:30 AM
74 Friday, 01:30 PM - 03:00 PM

Wang, Tan
171 Saturday, 10:00 AM - 11:30 AM

Wang, Tong
224 Saturday, 02:15 PM - 03:45 PM

Wang, Wei
274 Sunday, 08:00 AM - 09:30 AM
378 Monday, 08:00 AM - 09:30 AM

Wang, Wenbin
55 Friday, 01:30 PM - 03:00 PM

Wang, WenJie
10 Friday, 08:00 AM - 09:30 AM

Wang, Xingyin
154 Saturday, 08:00 AM - 09:30 AM

Wang, Xinping
277 Sunday, 08:00 AM - 09:30 AM

Wang, Xuping
154 Saturday, 08:00 AM - 09:30 AM

Wang, Yimin
74 Friday, 01:30 PM - 03:00 PM
232 Saturday, 02:15 PM - 03:45 PM

Wang, Yulan
215 Saturday, 02:15 PM - 03:45 PM
370 Monday, 08:00 AM - 09:30 AM

Wang, Zhe
47 Friday, 10:00 AM - 11:30 AM

Ward, Amy
321 Sunday, 02:45 PM - 04:15 PM

Ward, Michael
23 Friday, 08:00 AM - 09:30 AM

Ward, Peter
153 Saturday, 08:00 AM - 09:30 AM
197 Saturday, 12:30 PM - 02:00 PM
247 Saturday, 04:00 PM - 05:30 PM
366 Monday, 08:00 AM - 09:30 AM

Wasil, Edward
2 Friday, 08:00 AM - 09:30 AM
80 Friday, 03:30 PM - 05:00 PM
154 Saturday, 08:00 AM - 09:30 AM

Watkins , Ben
190 Saturday, 12:30 PM - 02:00 PM

Watson, Jillian
344 Sunday, 04:30 PM - 06:00 PM

Watson, Noel
209 Saturday, 02:15 PM - 03:45 PM

Weigel, Courtney
322 Sunday, 02:45 PM - 04:15 PM

Weltman, David
119 Friday, 05:15 PM - 06:45 PM

Wen, Yuan
69 Friday, 01:30 PM - 03:00 PM

Whebber, Patricia
313 Sunday, 02:45 PM - 04:15 PM

White, Denise
23 Friday, 08:00 AM - 09:30 AM

Whybark, W.
137 Saturday, 08:00 AM - 09:30 AM

Wichmann, Matthias
140 Saturday, 08:00 AM - 09:30 AM

Wiengarten, Frank
341 Sunday, 04:30 PM - 06:00 PM

Williams, Sharon
287 Sunday, 09:45 AM - 11:15 AM

Wilson, John
306 Sunday, 09:45 AM - 11:15 AM

Winkenbach, Matthias
178 Saturday, 10:00 AM - 11:30 AM
328 Sunday, 02:45 PM - 04:15 PM

Wojcik, Patrick
315 Sunday, 02:45 PM - 04:15 PM

Wolff, Eliane
302 Sunday, 09:45 AM - 11:15 AM

Wood, Sam
16 Friday, 08:00 AM - 09:30 AM
323 Sunday, 02:45 PM - 04:15 PM

Wooten, Joel
196 Saturday, 12:30 PM - 02:00 PM
222 Saturday, 02:15 PM - 03:45 PM

Worthington, Bill
165 Saturday, 10:00 AM - 11:30 AM

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Wowreczko, Danuta
326 Sunday, 02:45 PM - 04:15 PM

Wu, Dash
27 Friday, 10:00 AM - 11:30 AM
57 Friday, 01:30 PM - 03:00 PM
71 Friday, 01:30 PM - 03:00 PM
176 Saturday, 10:00 AM - 11:30 AM

Wu, Jun
54 Friday, 01:30 PM - 03:00 PM

Wu, Lirong
154 Saturday, 08:00 AM - 09:30 AM

Wu, Qi
147 Saturday, 08:00 AM - 09:30 AM

Wu, Sarah
220 Saturday, 02:15 PM - 03:45 PM

Wu, Wei
262 Sunday, 08:00 AM - 09:30 AM

Wu, Xiao
68 Friday, 01:30 PM - 03:00 PM

Wu, Zhanbin
296 Sunday, 09:45 AM - 11:15 AM

Wu, Zhaohui
72 Friday, 01:30 PM - 03:00 PM
124 Friday, 05:15 PM - 06:45 PM

Wuttke, David
1 Friday, 08:00 AM - 09:30 AM
280 Sunday, 08:00 AM - 09:30 AM

Wyatt, David
12 Friday, 08:00 AM - 09:30 AM

X

Xia, Yu
359 Sunday, 04:30 PM - 06:00 PM

Xia, Yusen
69 Friday, 01:30 PM - 03:00 PM
379 Monday, 08:00 AM - 09:30 AM

Xiang, Chen
117 Friday, 05:15 PM - 06:45 PM

Xiao, Tingting
370 Monday, 08:00 AM - 09:30 AM

Xiao, Wenli
326 Sunday, 02:45 PM - 04:15 PM

Xiao, Zhiguo
139 Saturday, 08:00 AM - 09:30 AM

Xie, Xiaoqing (kristine)
56 Friday, 01:30 PM - 03:00 PM

Xie, Yangyang
146 Saturday, 08:00 AM - 09:30 AM

Xie , Lei
143 Saturday, 08:00 AM - 09:30 AM

Xu, Kefeng
5 Friday, 08:00 AM - 09:30 AM

Xu, Qi
10 Friday, 08:00 AM - 09:30 AM

Xu, Shenghan
117 Friday, 05:15 PM - 06:45 PM

Xu, Xianhao
266 Sunday, 08:00 AM - 09:30 AM

Xu, Xiaoling
110 Friday, 05:15 PM - 06:45 PM

Xu, Xin
17 Friday, 08:00 AM - 09:30 AM

Xu, Xun
265 Sunday, 08:00 AM - 09:30 AM

Xu, Yi
48 Friday, 10:00 AM - 11:30 AM

Xu, Yuqian
179 Saturday, 10:00 AM - 11:30 AM

XU, ZHIDUAN
315 Sunday, 02:45 PM - 04:15 PM

Xue, Mei
179 Saturday, 10:00 AM - 11:30 AM

Xue, Pengfei
180 Saturday, 10:00 AM - 11:30 AM

Xue, Zhengliang
42 Friday, 10:00 AM - 11:30 AM

Y

Yan, Houmin
146 Saturday, 08:00 AM - 09:30 AM

Yan, Tingting
72 Friday, 01:30 PM - 03:00 PM

Yan, Wei
134 Saturday, 08:00 AM - 09:30 AM

Yan, Xinghao
194 Saturday, 12:30 PM - 02:00 PM

Yang, Fanfan
394 Monday, 09:45 AM - 11:15 AM

Yang, Guangyuan
198 Saturday, 12:30 PM - 02:00 PM

Yang, Jinsuk
46 Friday, 10:00 AM - 11:30 AM

Yang, Lei
147 Saturday, 08:00 AM - 09:30 AM

Yang, Muer
262 Sunday, 08:00 AM - 09:30 AM

Yang, Shitao
178 Saturday, 10:00 AM - 11:30 AM

Yang, Song
68 Friday, 01:30 PM - 03:00 PM

Yang, Xu
359 Sunday, 04:30 PM - 06:00 PM

Yang, Yao
45 Friday, 10:00 AM - 11:30 AM

Yano, Candace
354 Sunday, 04:30 PM - 06:00 PM

Yao, David
42 Friday, 10:00 AM - 11:30 AM

Yao, Shiqing
214 Saturday, 02:15 PM - 03:45 PM

Yavuz, Mesut
101 Friday, 03:30 PM - 05:00 PM

Yayla-Kullu, Muge
82 Friday, 03:30 PM - 05:00 PM
149 Saturday, 08:00 AM - 09:30 AM

Yazdani, Baback
82 Friday, 03:30 PM - 05:00 PM
120 Friday, 05:15 PM - 06:45 PM
349 Sunday, 04:30 PM - 06:00 PM

Ye, Di
381 Monday, 08:00 AM - 09:30 AM

Ye, Qing
136 Saturday, 08:00 AM - 09:30 AM

Ye, Yongjie
229 Saturday, 02:15 PM - 03:45 PM

Yeh, Li-Ting
368 Monday, 08:00 AM - 09:30 AM

Yenipazarli, Arda
107 Friday, 05:15 PM - 06:45 PM

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212 Saturday, 02:15 PM - 03:45 PM
277 Sunday, 08:00 AM - 09:30 AM
317 Sunday, 02:45 PM - 04:15 PM

Yen-Tsang, Chen
252 Saturday, 04:00 PM - 05:30 PM
400 Monday, 09:45 AM - 11:15 AM

Yi, Haiyan
161 Saturday, 10:00 AM - 11:30 AM

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121 Friday, 05:15 PM - 06:45 PM

Yin, Rui
19 Friday, 08:00 AM - 09:30 AM
74 Friday, 01:30 PM - 03:00 PM
232 Saturday, 02:15 PM - 03:45 PM

Yin, Shuya
333 Sunday, 02:45 PM - 04:15 PM

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219 Saturday, 02:15 PM - 03:45 PM

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391 Monday, 09:45 AM - 11:15 AM

Yoo, Onesun
48 Friday, 10:00 AM - 11:30 AM

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Yoshizaki, Hugo
163 Saturday, 10:00 AM - 11:30 AM

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314 Sunday, 02:45 PM - 04:15 PM

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206 Saturday, 12:30 PM - 02:00 PM

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65 Friday, 01:30 PM - 03:00 PM
177 Saturday, 10:00 AM - 11:30 AM

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394 Monday, 09:45 AM - 11:15 AM

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220 Saturday, 02:15 PM - 03:45 PM

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316 Sunday, 02:45 PM - 04:15 PM
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290 Sunday, 09:45 AM - 11:15 AM

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271 Sunday, 08:00 AM - 09:30 AM
386 Monday, 08:00 AM - 09:30 AM

Zaremba, Boris
20 Friday, 08:00 AM - 09:30 AM

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194 Saturday, 12:30 PM - 02:00 PM

Zatti, Wilson Roberto
402 Monday, 09:45 AM - 11:15 AM

Zeng, Jing
325 Sunday, 02:45 PM - 04:15 PM

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Zenteno, Ana Cecilia
12 Friday, 08:00 AM - 09:30 AM
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Zepeda, David
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Zhan, Dongyuan
321 Sunday, 02:45 PM - 04:15 PM

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178 Saturday, 10:00 AM - 11:30 AM

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185 Saturday, 12:30 PM - 02:00 PM

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118 Friday, 05:15 PM - 06:45 PM

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147 Saturday, 08:00 AM - 09:30 AM
203 Saturday, 12:30 PM - 02:00 PM

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147 Saturday, 08:00 AM - 09:30 AM

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357 Sunday, 04:30 PM - 06:00 PM

Zhang, Qingyu
220 Saturday, 02:15 PM - 03:45 PM

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280 Sunday, 08:00 AM - 09:30 AM

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186 Saturday, 12:30 PM - 02:00 PM

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214 Saturday, 02:15 PM - 03:45 PM

Zhang, Yinghao
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Zhang, Yue
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Zhang, Yulin
180 Saturday, 10:00 AM - 11:30 AM

Zhao, Haifeng
111 Friday, 05:15 PM - 06:45 PM
225 Saturday, 02:15 PM - 03:45 PM
266 Sunday, 08:00 AM - 09:30 AM

Zhao, Lei
121 Friday, 05:15 PM - 06:45 PM

Zhao, Lindu
277 Sunday, 08:00 AM - 09:30 AM

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378 Monday, 08:00 AM - 09:30 AM

Zhao, Xuying
99 Friday, 03:30 PM - 05:00 PM

Zhao, Yabing
65 Friday, 01:30 PM - 03:00 PM

Zhao, Yao
17 Friday, 08:00 AM - 09:30 AM

Zheng, Xiaona
357 Sunday, 04:30 PM - 06:00 PM

Zhou, Feng
352 Sunday, 04:30 PM - 06:00 PM

Zhou, Junjie
100 Friday, 03:30 PM - 05:00 PM

Zhou, Rong
303 Sunday, 09:45 AM - 11:15 AM

Zhou, Yong-Pin
248 Saturday, 04:00 PM - 05:30 PM

Zhu, Kaijie
214 Saturday, 02:15 PM - 03:45 PM

Zhu, Xia
296 Sunday, 09:45 AM - 11:15 AM

Zhu, Yunxia
57 Friday, 01:30 PM - 03:00 PM

Zia, Leila
246 Saturday, 04:00 PM - 05:30 PM

Ziengs, Nick
53 Friday, 01:30 PM - 03:00 PM

Ziya, Serhan
106 Friday, 05:15 PM - 06:45 PM
184 Saturday, 12:30 PM - 02:00 PM

Zobel, Christopher
251 Saturday, 04:00 PM - 05:30 PM
294 Sunday, 09:45 AM - 11:15 AM

Zuidwijk, Rob
206 Saturday, 12:30 PM - 02:00 PM
393 Monday, 09:45 AM - 11:15 AM

Zulietti, Luis
316 Sunday, 02:45 PM - 04:15 PM
355 Sunday, 04:30 PM - 06:00 PM

Zuo, Xiaolu
205 Saturday, 12:30 PM - 02:00 PM

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152 Saturday, 08:00 AM - 09:30 AM

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34 Friday, 10:00 AM - 11:30 AM
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403 Monday, 09:45 AM - 11:15 AM

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341 Sunday, 04:30 PM - 06:00 PM
368 Monday, 08:00 AM - 09:30 AM

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238 Saturday, 04:00 PM - 05:30 PM

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328 Sunday, 02:45 PM - 04:15 PM

April, Jay
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331 Sunday, 02:45 PM - 04:15 PM

Apte, Aruna
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190 Saturday, 12:30 PM - 02:00 PM

Arikan, Mazhar
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35 Friday, 10:00 AM - 11:30 AM

Atan, Zumbul
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121 Friday, 05:15 PM - 06:45 PM

Atasu, Atalay
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81 Friday, 03:30 PM - 05:00 PM

Aviles-Gonzalez, Jonnatan
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250 Saturday, 04:00 PM - 05:30 PM

Aydin, Burcu
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276 Sunday, 08:00 AM - 09:30 AM

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177 Saturday, 10:00 AM - 11:30 AM
149 Saturday, 08:00 AM - 09:30 AM

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6 Friday, 08:00 AM - 09:30 AM

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Balasubramanian, Hari
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116 Friday, 05:15 PM - 06:45 PM

Bansal, Saurabh
sub32@psu.edu
192 Saturday, 12:30 PM - 02:00 PM

Barton, Harry
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61 Friday, 01:30 PM - 03:00 PM

Basappa, Ravishankar
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377 Monday, 08:00 AM - 09:30 AM

Battistelle, Rosane Aparecida
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367 Monday, 08:00 AM - 09:30 AM
290 Sunday, 09:45 AM - 11:15 AM

Bellos, Ioannis
ibellos@gmu.edu
248 Saturday, 04:00 PM - 05:30 PM

Bendoly, Elliot
elliot_bendoly@bus.emory.edu
261 Sunday, 08:00 AM - 09:30 AM

Berg, Bjorn
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28 Friday, 10:00 AM - 11:30 AM

Berling, Peter
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302 Sunday, 09:45 AM - 11:15 AM

Besiou, Maria
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7 Friday, 08:00 AM - 09:30 AM

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279 Sunday, 08:00 AM - 09:30 AM

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198 Saturday, 12:30 PM - 02:00 PM

Biller, Bahar
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146 Saturday, 08:00 AM - 09:30 AM

Birge, John
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288 Sunday, 09:45 AM - 11:15 AM

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224 Saturday, 02:15 PM - 03:45 PM
91 Friday, 03:30 PM - 05:00 PM

Blanco, Edgar
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158 Saturday, 10:00 AM - 11:30 AM

Boone, Tonya
tonya.boone@mason.wm.edu
320 Sunday, 02:45 PM - 04:15 PM

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Bordoloi, Sanjeev
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321 Sunday, 02:45 PM - 04:15 PM

Boyer, Kenneth
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275 Sunday, 08:00 AM - 09:30 AM

Brock, Vitor
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67 Friday, 01:30 PM - 03:00 PM
264 Sunday, 08:00 AM - 09:30 AM

Brun, Sergio Adelar
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93 Friday, 03:30 PM - 05:00 PM

Buijs, Paul
p.buijs@rug.nl
408 Monday, 09:45 AM - 11:15 AM

C

Calmon, Andre
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21 Friday, 08:00 AM - 09:30 AM

Carter, Craig
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124 Friday, 05:15 PM - 06:45 PM

Carvalho, Jose
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46 Friday, 10:00 AM - 11:30 AM

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211 Saturday, 02:15 PM - 03:45 PM

Chandrasekaran, Aravind
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197 Saturday, 12:30 PM - 02:00 PM
223 Saturday, 02:15 PM - 03:45 PM

Chaudhuri, Saikat
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Chawla, Nitesh
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384 Monday, 08:00 AM - 09:30 AM

Chen, Liang
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240 Saturday, 04:00 PM - 05:30 PM

Chen, Qiong
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41 Friday, 10:00 AM - 11:30 AM

Chen, Rachel
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344 Sunday, 04:30 PM - 06:00 PM

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Choi, Thomas
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232 Saturday, 02:15 PM - 03:45 PM

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118 Friday, 05:15 PM - 06:45 PM
10 Friday, 08:00 AM - 09:30 AM

Choo, Adrian
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Cil, Eren
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108 Friday, 05:15 PM - 06:45 PM

Clifford, Brian
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395 Monday, 09:45 AM - 11:15 AM

Conceicao, Samuel
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302 Sunday, 09:45 AM - 11:15 AM

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80 Friday, 03:30 PM - 05:00 PM

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204 Saturday, 12:30 PM - 02:00 PM

D

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Davis, Mark
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Devlin, Anna
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366 Monday, 08:00 AM - 09:30 AM

Dogru, Mustafa
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218 Saturday, 02:15 PM - 03:45 PM
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E

Eckstein, Dominik
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Elahi, Ehsan
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1 Friday, 08:00 AM - 09:30 AM

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172 Saturday, 10:00 AM - 11:30 AM

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55 Friday, 01:30 PM - 03:00 PM

F

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Faramarzi, Hamid
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289 Sunday, 09:45 AM - 11:15 AM

Ferrand, Yann
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340 Sunday, 04:30 PM - 06:00 PM

Fixson, Sebastian
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87 Friday, 03:30 PM - 05:00 PM

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45 Friday, 10:00 AM - 11:30 AM

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329 Sunday, 02:45 PM - 04:15 PM

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64 Friday, 01:30 PM - 03:00 PM
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219 Saturday, 02:15 PM - 03:45 PM

G

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378 Monday, 08:00 AM - 09:30 AM

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391 Monday, 09:45 AM - 11:15 AM

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150 Saturday, 08:00 AM - 09:30 AM

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378 Monday, 08:00 AM - 09:30 AM

H

Ha, Albert
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AN INTERNATIONAL SOCIETY TO EXTEND AND INTEGRATE KNOWLEDGE PERTAINING TO PRODUCTION AND OPERATIONS MANAGEMENT

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	Entrepreneurship
	Expert Systems
	Facility Design and Layout
	Facility Location
	Finance and OM Interface
	Forecasting
	Global Operations
	Hospitality Management
	Humanitarian Relief Logistics
	Information Systems
	Inventory Management
	Lean Production
	Marketing and OM interface
	Network Applications
	New Product Development
	Operations Strategy and Flexibility
	Partnering and Collaboration
	Pricing
	Project Management
	Quality Management
	Queuing Theory
	Reengineering
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	Reliability and Maintenance
	Research and Development
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	Revenue Management
	Reverse Logistics
	Risk Management
	Scheduling Theory
	Scheduling Applications
	Socially Responsible Management
	Supply Chain Management
	Sustainable Operations
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- **Regular fee for EurOMA is $60.**
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- Contact Ene Kannell, Executive Secretary for EurOMA (**ene@eiasm.be**), for information.
- Visit the EurOMA website http://www.euroma-online.org/associations/euroma/index.asp.

Reordering Back Issues of the POM Journal

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Marriott Denver City Center - Floor Plan

24th Annual Production and Operations Management (POM) Conference, Denver

May 3 - 6, 2013

Conference Agenda

	Start Time	End Time	Event	Location
Wednesday, May 1, 2013				
	5:00 PM	6:00 PM	Mini Conference Registration: Supply Chain Management	Registration Counter
	5:00 PM	6:00 PM	Mini Conference Registration: Healthcare Operations Management	
	5:00 PM	6:00 PM	Mini Conference Registration: Humanitarian Oprs. & Crisis Mgmt	
	5:00 PM	6:00 PM	Mini Conference Registration: Sustainable Operations Mgmt	
Thursday, May 2, 2013				
	8:30 AM	1:30 PM	Registration for all mini-conferences	Registration Counter
	10:30 AM	8:30 PM	Mini Conference: Supply Chain Management	Suites III
	1:00 PM	7:45 PM	Mini Conference: Healthcare Operations Management	Salons B,C,D
	11:00 AM	6:15 PM	Mini Conference: Humanitarian Oprs. & Crisis Mgmt	Suites IV
	9:00 AM	5:00 PM	Mini Conference: Sustainable Operations Mgmt	Suites V & VI
	5:00 PM	7:00 PM	POMS Annual Conference Registration Check-in	Registration Counter
Friday, May 3, 2013				
	8:00 AM	5:00 PM	POMS Annual Conference Registration Check-in	Registration Counter
	9:00 AM	12:30 PM	Exhibits Open	
	8:00 AM	9:30 AM	Parallel Sessions	
	9:30 AM	10:00 AM	Morning Coffee Break	
	9:00 AM	4:00 PM	POMS Board Meeting	Mattie Silks
	10:00 AM	11:30 PM	Parallel Sessions	
	11:30 AM	12:30 PM	Plenary Session: Kerry Hester, Senior Vice President of Customer Experience at US Airways	Salons E & F
	12:30 PM	1:30 PM	Lunch on your own	
	1:30 PM	3:00 PM	Parallel Sessions	
	1:30 PM	5:00 PM	Exhibits Open	
	3:00 PM	3:30 PM	Afternoon Coffee Break	
	3:30 PM	5:00 PM	Parallel Sessions	
	5:00 PM	5:15 PM	Evening Coffee Break	
	5:15 PM	6:45 PM	Parallel Sessions	
	7:00 PM	8:00 PM	Welcome Reception (Open to all registered attendees & guests)	Salons E & F
Saturday, May 4, 2013				
	8:00 AM	5:00 PM	POMS Annual Conference Registration Check-in	Registration Counter
	7:00 AM	7:50 AM	College President's Breakfast (Invitation Only)	Allie's Grill
	8:00 AM	9:30 AM	Parallel Sessions	
	9:00 AM	12:30 PM	Exhibits Open	
	9:30 AM	10:00 AM	Morning Coffee Break	
	10:00 AM	11:30 AM	Parallel Sessions	
	11:30 AM	12:30 PM	Lunch on your own	
	11:30 AM	12:30 PM	Program Committee and Track Chairs Lunch (by invitation)	Allie's Grill
	12:30 PM	2:00 PM	Parallel Sessions	
	12:30 PM	5:00 PM	Exhibits Open	
	2:00 PM	2:15 PM	Afternoon Coffee Break	
	2:15 PM	3:45 PM	Parallel Sessions	
	3:45 PM	4:00 PM	Afternoon Coffee Break	
	4:00 PM	5:30 PM	Parallel Sessions	

24th Annual Production and Operations Management (POM) Conference, Denver

May 3 - 6, 2013

Conference Agenda

	Start Time	End Time	Event	Location
Saturday, May 4, 2013				
	5:45 PM	6:30 PM	College of Supply Chain Management Business Meeting	Suites I & II
	5:45 PM	6:30 PM	College of Healthcare Operations Management Business Meeting	Suites IV
	5:45 PM	6:30 PM	College of Behavior in Operations Management Business Meeting	Salons A & B
	5:45 PM	6:30 PM	College of Service Operations Business Meeting	Mattie Silks
	5:45 PM	6:30 PM	College on Humanitarian Oprs. & Crisis Mgt. Business Meeting	Suites III
	5:45 PM	6:30 PM	College of Sustainable Operations Business Meeting	Suites V & VI
	5:45 PM	6:30 PM	College of Product Innovation & Tech. Mgmt. Business Meeting	Salons C & D
	6:30 PM	8:00 PM	President's Reception (Open to all registered attendees & guests)	Salons E & F
Sunday, May 5, 2013				
	8:00 AM	5:00 PM	POMS Annual Conference Registration Check-in	Registration Counter
	7:15 AM	11:45 AM	Emerging Scholars Breakfast & Program for Registered Participants	Mattie Silks
	8:00 AM	9:30 AM	Parallel Sessions	
	8:00 AM	9:30 AM	POMS Practice Leaders Semi Plenary Session: Health Care and Operations (Mayo Clinic + Amgen) + (PwC)	Suites IV
	9:30 AM	12:30 PM	Exhibits Open	
	9:30 AM	9:45 AM	Morning Coffee Break	
	9:45 AM	11:15 AM	Parallel Sessions	
	9:45 AM	11:15 AM	POMS Practice Leaders Semi Plenary Session: Supply Chain Management (Dell, Xilinx, Sonoco)	Suites IV
	11:15 AM	12:45 PM	Awards Ceremony & Luncheon (Open to all registered attendees & guests)	Salons E & F
	1:00 PM	2:30 PM	Plenary Session: Dr. Gang Yu's speech – 2012 MKS Award Winner	Salons E & F
	1:00 PM	5:00 PM	Exhibits Open	
	1:30 PM	5:00 PM	Doctoral Consortium	Mattie Silks
	2:45 PM	4:15 PM	Parallel Sessions	
	2:45 PM	4:15 PM	POMS Practice Leaders Semi Plenary Session: Business Analytics (HP + Google + Nestlé)	Suites IV
	4:15 PM	4:30 PM	Afternoon Coffee Break	
	4:30 PM	6:00 PM	Parallel Sessions	
	4:15 PM	4:30 PM	Afternoon Coffee Break II	
	4:30 PM	6:00 PM	Parallel Sessions	
	4:30 PM	6:00 PM	POMS Practice Leaders Forum: Next Steps - POMS practice leaders + POMS board members + MKS-EPOMP Award Winners (by Invitation)	Suites IV
	6:05 PM	6:45 PM	POMS Business Meeting (Please attend --all are invited)	Mattie Silks
	6:15 PM	7:45 PM	Emerged Scholars Reception	Allie's Grille
Monday, May 6, 2013				
	8:00 AM	10:00 AM	POMS Annual Conference Registration Check-in	Registration Counter
	8:00 AM	11:30 AM	POM Exhibits Open	
	8:00 AM	9:30 AM	Parallel Sessions	
	9:30 AM	9:45 AM	Coffee Break	
	9:45 AM	11:15 AM	Parallel Sessions	

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Artist rendering of the new Darla Moore School of Business building; completion set for December 2013.

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