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DOW JONES SUSTAINABILITY INDEX AND TOTAL QUALITY MANAGEMENT

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ABSTRACT

The theory and practice of Total Quality Management (TQM) have evolved over the last three decades from the technical aspects of quality control and employee training to a supply-chain-wide delivery of excellent products and services. While quality efforts are no longer pursued the same way and with the same fervor as in the 90's, for some organizations TQM became the main driver of their operations and a mechanism of better performance. These organizations have managed to make the transition to Sustainability Management (SM) where their efforts are captured, measured, and reported as economic, environmental, and social (Triple Bottom Line) benefits. It is because of these reasons, and due to these organizations, that the Dow Jones Sustainability Indexes (DJSI) were created, to track and monitor their performance as they strive to increase long-term stakeholder value. This paper discusses the transition from TQM to SM through the DJSI.

CONTINUOUS IMPROVEMENT/KAIZEN

After the devastation of Japan during World War II, two American consultants, W. Edwards Deming and Joseph Duran, in their effort to help Japanese rebuild their economy, introduced the concept of continuous quality improvement to improve the inferior quality and tarnished image of Japanese products. They adapted the statistical tools and techniques, as well as other innovative management tools developed by Western Electric, to train the Japanese workforce in identifying causes of quality problems and ways to fix them. They took little strides and achieved steady progress. Internally, they emphasized reducing defects, and, externally, paid close attention to what consumers wanted. Their efforts were relentless and, in the mid 1970's during the Arab oil embargo, their products captured major market shares of world markets in different industries such as automobiles and electronics (Collier, 2007). It was during those times that the concept of Kaizen found root and appeal all over the world.

Kaizen in Japanese means 'improvement,' and especially process improvement. It is a never-ending process of continuous improvement that covers people, equipment, suppliers, materials, and procedures. Its core principle is that every aspect of an operation/process can be captured, measured, and improved. Through setting and achieving of ever-higher goals, its end goal is perfection, which is never achieved but always sought (Heizer, 2006). To achieve the never- ending quality improvement, everyone in the organization must make it their top priority, especially the chief executive

officer (CEO). The CEO must be directly involved and make it part of the organization's corporate and operational strategy in order to improve the bottom line (Besterfield, 1990).

TQM

As international trade increased following World War II, the emphasis in U.S. corporate management was on efficiency and cost reduction. Many companies moved their factories to lower-wage regions, first, and, then, countries. Thereafter, the emphasis shifted towards the advancement of technology/computers as a way of improving production, leaving product quality and quality costs unexplored. Coupled with the mid 70's oil embargo, and the Japanese surge in quality, reliability, and economy, Japanese products started flooding the world. Japanese cars were smaller and more economical, and as with their electronic products, they were more reliable and met consumer needs timely and much better than their American counterparts. American manufacturers took notice, and top managers made quality their top priority, in nearly every major U.S. company, aiming to get better and 'leaner.' In 1987, the U.S. government established the Malcolm Baldrige National Quality Award (MBNQA) to focus national attention on quality, and it did. The concept of TQM was popularized and it became a new management philosophy and tool in gaining and keeping the industry and world lead in manufacturing and service management. In 2007, a nonprofit category has been added to the program. Today, more than 40 states and many countries, including Japan, have programs modeled after Baldrige. Since its inception to 2006, there have been 1,139

applicants for the Award, and so far, 68 Award recipients have been selected (BNQP, 2007).

TQM is a supply chain wide quality commitment--from the supplier, to the producer, to the consumer--of an organization, in order to achieve excellence in production and service management. Product and service quality are an end and they can be achieved, captured, and measured. TQM, on the other hand, is a process, a management philosophy, or a culture that embraces and values the customers' needs and expectations. Proponents of the quality movement organize its principles into three main dimensions: (1) Customer Focus, (2) Continuous Improvement, and (3) Total Involvement or Universal Responsibility (Finch, 2008). Total Involvement and Universal Responsibility are the catalysts for the growth of sustainability management among business organizations.

SUSTAINABILITY

Sustainability evolved in the social sciences, especially in anthropology and sociology, where there is a need to protect and sustain the environment and its natural resources. Defining sustainability has been difficult, in general, but more recently we witness the emergence of more socially sensitive definitions. Sustainability and sustainable development attracted considerable attention since their introduction to the public by the Brundtland Report (1987) under the title 'Our Common Future.' The report defines sustainability as "the ability to meet the needs of present generations without

compromising the ability of future generations to meet their own needs." The report also challenges the world to envision a future in which the threats of environmental destruction are minimized and the people of the world enjoy economic stability and social equity between and within generations.

The U.S. Environmental Protection Agency (EPA) defines sustainability as "the ability to achieve continuing economic prosperity while protecting the natural systems of the planet and providing a high quality of life of its people" (EPA, 2007).

As is manifested in the EPA's sustainability definition, the concept of sustainability has been broadened to include social, environmental, and ecological issues that affect the well being and standard of living of the world population at large. With the broadening of the definition, the new challenge now becomes its measurement. In 1996 the International Institute for Sustainable Developed (IISD) developed a Sample Policy Framework which proposed that a Sustainability Index "would give decision-makers tools to rate policies and programs against each other" ((IISD, 1996). Along with the IISD Policy Framework, in 1997, systems ecologists M. T. Brown and S. Ulgiati published their formulation of a quantitative sustainability index (SI) as a ratio of the 'emergy' ('embodied energy') yield ratio to the environmental loading ratio (ELR). Brown and Ulgiati also called their sustainability index as "Emergy Sustainability Index" (ESI). It is "an index that accounts for yield, renewability, and environmental load. It is the incremental emergy yield compared to the environmental load" (Wikipedia, 2007, p.2).

In 2004, a joint initiative of the Yale Center for Environmental Law and Policy (YCELP) and the Center for International Earth Science Information Network (CIESIN) of

Columbia University, in collaboration with the World Economic Forum (WEF) and the Joint Research Center of the European Commission (JRCEC) constructed an Environmental Sustainability Index (ESI) that was formally released during the 2005 annual meeting of the WEF in Davos, Switzerland (Wikipedia, 2007, p.3).

Nowadays sustainability initiatives and reporting have become a part of the business plans of many organizations. An index that is very much in line with the aforementioned sustainability definitions and the TBL accounting management (environmental, social, and economic benefits), is the Dow Jones Sustainability Index (DJSI), where the companies are ranked according to their TBL sustainability results. The DJSI World was created in 1999 by the Sustainable Asset Management (SAM) Group of Zurich and the Dow Jones Indexes of New York, and they cover the top 10% of the biggest 2,500 companies in the Dow Jones Global Index that pursue economic, social, and environmental sustainability reporting . In 2001, European Index provider STOXX Limited extended the cooperation to expand the DJSI family with European and Eurozone sustainability benchmarks—the DJSI STOXX, and DJSI EURO STOXX, respectively. DJSI STOXX covers the 20% sustainability leading companies in the DJSTOXX SM 600 Index. In 2005, the DJSI family expanded with the introduction of the DJSI North America and DJSI United States. The DJSI North America also covers the 20% sustainability leading companies of the 600 biggest North American companies in the Dow Jones Global Index (DJSI, 2006).

The DJSI defines corporate sustainability as " a business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social developments … Corporate sustainability leaders achieve long-term shareholder value by gearing their strategies and management to harness the market's potential for sustainability products and services while at the same time successfully reducing and avoiding sustainability costs and risks" (DJSI, 2006, p.2). According to them, leading sustainability companies display high levels of competence in addressing global and industry challenges and, therefore, their performance is deemed as an investable concept. They argue that the quality of a company's strategy, management, and performance, in dealing with opportunities and risks associated with the economic, environmental, and social challenges, can be quantified and screened for investing purposes.

The selection of index components follows a rules-based process defined in the DJSI Guidebooks and it is based on a thorough assessment of general and industry-specific sustainability criteria captured in the table below:

CRITERIA AND WEIGHTINGS

Corporate Sustainability Assessment Criteria

Dimension	Criteria	Weighting (%)
Economic	Codes of Conduct / Compliance / Corruption&Bribery	5.5
	Corporate Governance	6.0

	Risk & Crisis Management	6.0
	Industry Specific Criteria	Depends on Industry
Environment	Environmental Performance (Eco-Efficiency)	7.0
	Environmental Reporting*	3.0
	Industry Specific Criteria	Depends on Industry
Social	Corporate Citizenship/ Philanthropy	3.5
	Labor Practice Indicators	5.0
	Human Capital Development	5.5
	Social Reporting*	3.0
	Talent Attraction & Retention	5.5
	Industry Specific Criteria	Depends on Industry

*Criteria assessed based on publicly available information only

Source: http://www.sustainability-indexes.com/06_htmle/indexes/djsiworld_supersectorleaders.html

SAM Group-Index Research carries out all the sustainability related work for the indexes via the following procedures and ways: (DJSI, 2006)

1.SAMQuestionnaires

SAM Questionnaires specific to each of the DJSI sectors are distributed to the CEOs and heads of investor relations of all the companies in the DJSI investable stocks.

2. Company Documentation:

- Sustainability reports
- Environmental reports
- Health and safety reports
- Social reports
- Annual financial reports
- Special reports (e.g. on intellectual capital management, corporate governance, R&D, employee relations)
- All other sources of company information; e.g. internal documentation, brochures and website.

3. Media and stakeholder reports as well as other publicly available information

Analysts review media, press releases, articles, and stakeholder commentary written about a company over the past year.

4. Personal Contact with Companies

Each analyst personally contacts individual companies to clarify open points arising from the analysis of the questionnaire and company documents.

The DJSI World sector classification is based on the ICB industry, supersector, sector, and subsector classification. Only the sectors whose highest ranked company has achieved a sustainability score of at least one-fifth of the maximum score are eligible for the DJSI World. All other sectors—and their associated companies—are deemed ineligible and are eliminated from the review process. From each eligible DJSI sector, only companies with a corporate sustainability score of at least half of the highest ranked company in their sector are eligible for the DJSI World. The target selection for each eligible DJSI sector is 10% of the companies in the investable universe in that group. The DJSI are reviewed annually--to keep pace with the leaders in sustainability, and as needed--to account for extraordinary events such as delisting, bankruptcy, merger, takeover, and other important changes in the corporate sustainability performance. In addition, the selected members of the DJSI family are monitored daily for critical issues and crisis situations against their stated principles and policies, for possible exclusion from the index, regardless of how well they performed in the yearly assessment. For the year 2006/2007, the DJSI World added 46 companies and deleted 36, with a net result of 318 DJSI companies, after an analysis of 1200 global companies, as seen in the table below:

DJSI – Assessment Universe 2006

Number of invited and assessed companies

DJ Global Index	2,500
Invitations sent	2,501
Companies completing survey	527
Companies analyzed based on public information only	673
Companies analyzed globally	1,200
- North America:	442
- Europe:	489
- Japan:	144
- Asia / Pacific ex Japan:	102
- Latin America:	14
- South Africa:	9
DJSI World companies selected	318

The external auditor, PricewaterhouseCoopers ensures the assessment process to be in accordance with the 'guidebook rules.' The companies are then ranked according to their

- sustainability score, and
- sector/industry group that defines them.

The 18 DJSI World –Supersector leaders for 2006/2007 are shown in the Table below:

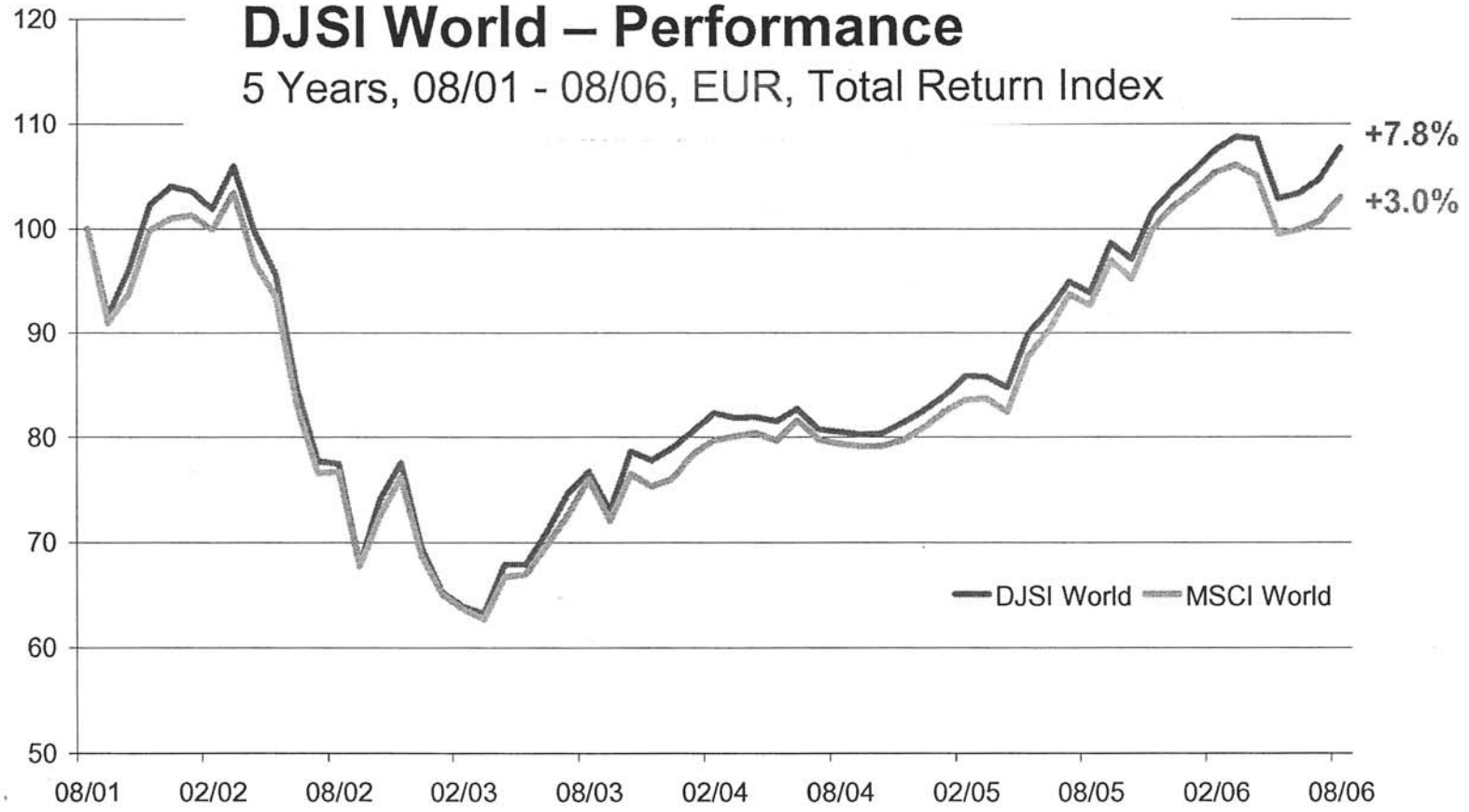
DJSI WORLD - SUPERSECTOR LEADERS (2006/2007)

Name	Market Sector	Country
Bayerische Motoren Werke AG (BMW)	Automobiles & Parts	Germany
Westpac Banking Corp.	Banks	Australia
Norsk Hydro	Basic Resources	Norway
DSM NV	Chemicals	Netherlands
Holcim	Construction & Materials	Switzerland
Sodexho Alliance SA	Travel & Leisure	France
Statoil	Oil & Gas	Norway
Investa Property Group	Financial Services	Australia
Unilever	Food & Beverage	Netherlands
Novartis	Healthcare	Switzerland
3M Company	Industrial Goods & Services	USA

Allianz	Insurance	Germany
ITV Plc	Media	UK
Procter & Gamble Co.	Personal & Household Goods	USA
Kesko	Retail	Finland
Intel Corp.	Technology	USA
BT Group Plc	Telecommunications	UK
Veolia Environment	Utilities	France

Source: http://www.sustainability-indexes.com/06_htmle/indexes/djsiworld_supersectorleaders.html

While the DJSI groups were created to track the performance of sustainability driven companies, there have been other similar indexes that track the performance of leading local and global organizations. The Morgan Stanley Capital International (MSCI) Inc., for example, is a leading provider of equity (international and US), fixed income, and hedge fund indexes. MSCI provided global equity indexes for over 30+ years and has become the most widely used international equity benchmark by institutional investors (MSCI, 2007). They have been designed to fulfill the investment needs of a wide variety of global institutional market participants. Approximately 2,000 organizations worldwide currently use the MSCI benchmarks, and over USD 3 trillion are currently benchmarked to these indexes worldwide. The performance comparison of both indexes (produced by the SAM Group), is depicted by the following graph, where the DJSI slightly outperformed the MSCI over the last 5-6 years. However, this performance superiority



Source: http://www.sustainability-indexes.com/06_htmle/indexes/djsiworld_supersectorleaders.html

of DJSI over other indexes is expected to widen in the future, as short-term corporate performance is gradually replaced by long-term triple bottom line sustainability practice, and as sustainability is continuously moving from corporate strategy and operations into individual products and services.

Conclusion

As we have stated earlier, TQM is a universal quest for excellence in corporate management and corporate triple bottom line sustainability. Sustainability strategies are further and further integrated into companies' core businesses. Transparency, accountability, and sustainability are no longer corporate challenges but real indicators of excellent performance with tremendous impact through out the whole world.

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