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An Operations Management View of the Services and Goods Offering Mix

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Abstract

The aim of this paper is to develop and propose a framework, termed here as the Value Package Prism, for assessing the kinds of management processes and flexibility available in providing a range of value packages (services and goods offering mix).

It provides an additional perspective to the traditional set of characteristics (intangibility, inseparability, heterogeneity, and perishability) for differentiating services and goods. The proposed framework (stockability, intensity of interaction, simultaneousness of consumption, and ease of performance assessment) may be useful to operations managers in developing, planning, organizing, or controlling the production and delivery of services or goods, offering an applied way to improve operations management by moving away from the extremes of pure services and pure goods to embrace how businesses compete and operate today, by delivering value packages.

Introduction

The boundaries between services and goods are blurring, as products today are often characterized by bundled services and goods (Wise and Baumgartner 1999). Because services and goods are frequently sold together in one single “value package,” it is important to look at the combination of services and goods as a unit in terms of both practice and research. Thus, rather than attempt to develop a framework that focuses on the differences between services and goods, this paper will attempt to provide a useful way to understand the operations management issues associated with bundled services and goods, or value packages. The goal is to develop a framework that can provide a basis for guiding operations management decisions when a particular value package needs to be produced and delivered.

A competitive strategy clearly emerging since the mid 1990s is that of the “total solution provider.” Rather than just provide goods that the company then has to manage, or services, which the company has to match with goods to provide value, companies do both within a single

product offering (Reis and Peña 2000). There are several reasons for this movement towards combining goods and services. Many goods, including capital, are rapidly becoming “commoditized.” Adding services to support the goods may provide a way to differentiate goods offerings to prevent or delay the margin erosion characteristic of “commoditization.”

Adding services to goods has also been used extensively. Due to the ability of service providers to customize offerings, and have flexibility to customize support, and create personal relationships, it is often more difficult for organizations to “commoditize” or directly compare services than to compare goods. Thus, the greater and more varied the services component of the services-goods bundle, the less “commoditized” the goods will become. More than that, such services can act as loyalty agents that contribute to increased future business because the business flow will depend on the relationship flow and, therefore, on keeping or increasing loyalty of customers. Loyalty in competitive markets only occurs with clients who are very satisfied with the value package offered (Heskett et al. 1997), and leads to reduced supplier switching (Johnston and Clark 2001).

In many situations, the first mover towards a mixed services and goods value package in any given industry would have an advantage.

In this paper a framework is proposed for describing value packages and support operations managers decisions. It aims to help companies better understand the nature and the magnitude of the operations changes required when particular aspects of the value package are altered. From a customer satisfaction standpoint, providing services to support goods helps ensure that the goods are used properly, thereby increasing customer satisfaction and creating greater loyalty. This proposed framework has four pillars: stockability, intensity of interaction with the client, simultaneousness between production and consumption, and difficulty in

performance analysis. The paper ends with conclusions and suggestions for future research directions.

The four characteristics or “pillars” of the proposed framework

It appears that the issues that are related to the four following characteristics: degree of stockability; degree of intensity of interaction with the client; degree of simultaneousness between production and consumption; and degree of difficulty in performance analysis affect operations management, strategic formulation and decision making related to the production and delivery of value packages (Corrêa et al. 2007).

Degree of stockability

The degree of stockability characteristic refers to the ability to inventory items needed to deliver the service before demand occurs, as well as the ability to inventory the service to be delivered. This concept underlies the characteristic of simultaneity in the literature. However, this characteristic is not merely dichotomic, as “simultaneity” is; rather, it depends on the ease of adopting the strategy of demand leveling for the production and delivery of the different value package elements, regardless of the proportion of services and goods. An espresso coffee, for instance, is a physical product and still cannot be stocked, in practical terms, for more than some seconds. Production and consumption are not strictly simultaneous, but the time span between one and the other is very short, making it virtually impossible for a coffee shop to stock espressos in anticipation to demand. A fresh sandwich has a higher degree of “stockability” than an espresso, because it can be consumed a couple of hours after production – that is why some shops choose to build anticipation stocks of them to face demand peak hours during the day. The point here is that a product that is not simultaneously produced and consumed does not guarantee

that it is possible to build anticipation stocks. How far in advance anticipation stocks can be built depends on the item's "degree of stockability" as a function of the maximum time span between possible build up of anticipation stocks and the actual demand. While contrary to the notion of just in time, the option of stocking items can allow more efficient use of capacity, better ability to adapt to changing demand to meet seasonal fluctuation, and more flexibility in scheduling.

The degree of intensity of interaction

Human participation, including interactions between clients and service providers, underlie the concept of heterogeneity in the literature. Heterogeneity results from people performing services differently. Although the literature associates services with the characteristic of heterogeneity, some services can be very homogeneous. Non-labor-intensive services, such as Internet shopping, tend to be very consistent. On the other hand, not all goods are homogeneous. In goods requiring customized craftsmanship, consistency is difficult to achieve. What matters for operations is neither heterogeneity nor whether the process renders a service or produces a good, but the *degree of intensity of interaction* between the customer and the process. In general, greater customization requires a greater degree of interaction to acquire information about the customer specific needs. In such cases, the operations manager requires operations resources that can: listen, interpret, and respond appropriately to the customer. How much this is needed will vary according to the degree of interaction required (between process resources and customers) regardless of the process result being a service or a product.

Additionally, the higher the degree of intensity of the interaction of the people and other resources, the more difficult it will be to control and manage the production and delivery of the value package. Thus, this characteristic has implications for the right type of production and

delivery processes and resources, with the more intense interaction requiring more flexibility in all of these aspects (see Correa et al., 2007 for a more detailed discussion).

Degree of simultaneousness between production and consumption

This characteristic is related to both the concepts of tangibility and inseparability as presented in the literature. While high simultaneity generally equates to low stockability, low stockability does not necessarily equate to high simultaneity. The “degree of stockability” of a product directly impacts the inventory and capacity management options that can be used (e.g. to what degree anticipation stocks can be built up to better level production), while the “degree of simultaneousness” directly impacts the quality management options that can be used (e.g. *process* and/or *finished product* quality control). When the production and consumption of a product occur simultaneously, it is impossible to perform finished product quality control – one has necessarily to rely on process quality control – this is quite typical of services, but for some processes that involve the production of physical goods, finished product quality control is also either infeasible or inconvenient, because the production and consumption of the product have a high degree of simultaneity, thus requiring that the managers favor process control. Thus, the type of product or process control adopted depends on the characteristics of the production processes and on the “degree of simultaneousness” between the production and consumption of the product, and not whether the value packages are more oriented towards services or goods.

Degree of ease in performance assessment

The ability of the customer to analyze performance is a characteristic that underlies the concept of tangibility of the literature. Historically, many customer contact services, such as call center operations, were viewed as intangible and thus difficult to assess. However, this has shifted as call centers have become more prevalent and frequently outsourced. One can now objectively

measure the amount of time on a call, the amount of time idle, and the time a customer waits in the queue. Service measurement is possible. Thus, it is not the tangibility or intangibility of the offering that drives the measurement issues for operations managers. It is the degree of ease or difficulty to measure.

Value packages with a low degree of difficulty to assess require formulation of different management strategies versus those that are difficult to assess, regardless of whether they are tangible or intangible products.

The next section provides insights into how the characteristics proposed in this paper affect the design and management of operations systems.

A guideline for designing operations systems based on value package characteristics

From an operations management standpoint, the four proposed pillars (stockability, intensity of interaction, simultaneousness of consumption, and difficulty to assess) of the Value Package Prism (see Figure 1) can be used to describe the value package offered to customers. While these characteristics were adapted from the traditional characteristics, they serve a different purpose. They are used as a way to help operations managers design and manage production and delivery processes rather than as a way to differentiate services and goods.

As can be seen in Figure 1, one way to denote a value package based on the four proposed value package characteristics is a “radar” representation.

The radar representation, also called a spider web chart, is an analytical tool often associated with benchmarking, which allows for simultaneous presentation of three or more performance measures (Mosley and Meyer 1999). The radar chart is adapted here to act as a tool to describe the level of the four proposed value package characteristics in a Value Package Prism.

Each of the four segments of the prism is independent of the others and represents a continuum varying from “low” (in the center at the origin of the segment) to “high” (towards the arrow at the end of the segment). Thus, each intermediate point is meaningful, corresponding to the “degree” of simultaneousness (of consumption), intensity of interaction (between the process and the customer), non-stockability (of the product or service), and difficulty to assess (performance). A greater or lesser degree of any given characteristic does not mean that it is intrinsically better or worse. It is simply different, supportive of a different customer strategy and correspondingly creates different production and delivery issues for operations management.

Discussion

Using the radar diagram to assess proposed value packages can assist operations managers in anticipating changes and designing the right processes to produce and deliver the altered value packages. The potential usefulness of the four proposed value package characteristics is presented in more detail on the following paragraphs.

Increased non-stockability reduces the operations manager’s options. When the product is less stockable, production leveling by the use of stocks becomes less available. The operations manager must accept the inability to meet surges in demand, and lose sales, or have extra or flexible capacity in place to meet potential needs.

Increased degree of intensity of interaction between people (clients and service providers like employees) and other resources also requires that several aspects of the production and delivery processes are adjusted. Because the employee directly represents the company, he or she must have good interpersonal skills and present a positive image to the customer. In addition, high interaction employees will have to be adaptable, and master the “arts” of listening, comprehending and adequately responding to customers’ information and requirements. Thus,

proper employee training is crucial. Whether producing a value package more closely resembling a service or a good, these employees need training to consistently perform within specifications, and to adequately self-inspect their work to understand whether it is acceptable before it is released to the customer, who may or may not be present for the production and delivery processes.

Increasing the degree of simultaneousness limits the operations manager's options in terms of quality control approaches. When simultaneousness is low, the manager can use product control, process control, and employees' self-control (normally a combination of them). The more simultaneous the production and consumption are, the less the manager can use product control (inspection).

Increased degree of difficulty in assess performance creates the need for more sophisticated performance measurement approaches that can encompass assessing "softer" aspects such as relationship, trust, responsiveness, and cooperation. A conscious decision must be made regarding what needs to be measured, and how to develop measurements that are meaningful and cost beneficial. There may also be a need to create mechanisms that help customers' assess the performance they perceive in ways that are meaningful to the customer.

It seems that the complexity of the operations manager's task increases as the area defined by the value package in the prism increases – in other words, in situations where the position of the points that describe the value package in the prism are more distant from the origin. In some instances, the operations manager loses management options, such as end product quality inspection. In other instances, the operations manager must deal with more complexity in processes, such as customer interaction, performance assessment and flexibility.

To deal with the capacity issue, a business might add personnel during peak times, or train personnel in other areas to answer the phones during peak times. In addition, to improve demand

management, there might be an automated answering system that provides standard information such as the operating hours, mailing address, and process for making a change, or refers customers to a website. This can channel the remaining unique interactions to customer service representatives. Dealing with the customer one-on-one requires a high level of flexibility, so again, training and interpersonal skills are important. Figure 1 shows some process options related to different value packages in the Value Package Prism.

The proposed framework has broad potential application. It moves operations managers away from the mindset of the services-goods dichotomy, which, while interesting conceptually, is less useful in practice and research in a value package world.

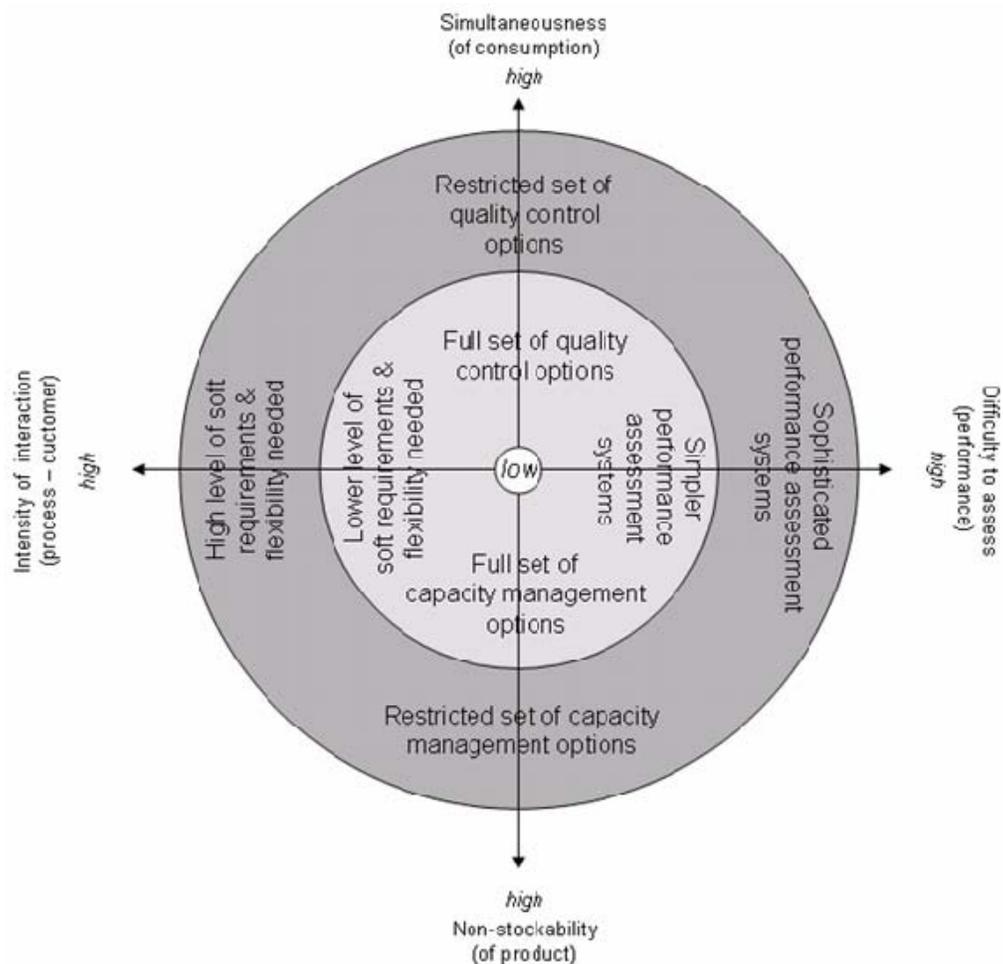


Figure 1 – The Value Package Prism: process options related to different value packages

Conclusions

A new approach is needed to address the way firms operate today and to be as useful to operations managers in terms of developing, planning, organizing, or controlling the production and delivery of services or goods. This approach must embrace the blurring of the lines between services and goods. Currently, an increasing number of services and goods are bundled as value packages. Combining goods with services allows differentiation and diminishes commoditization, with the associated loss of profit margins.

Useful frameworks should have a basis in practical reality. The suggested framework offers an applied way to improve operations management by moving away from the extremes of pure services and pure goods to embrace how businesses compete and operate today, by delivering value packages. This paper suggests that stockability, intensity of interaction, simultaneousness of consumption, and difficulty to assess performance are more useful characteristics for the operations manager in understanding value packages. These specific characteristics were selected to bring services and goods together, in contrast to the traditional approach of focusing on the differences. The suggested characteristics can also be applied to items traditionally classified as pure services or pure goods.

By simultaneously evaluating these suggested characteristics and mapping them on a radar chart, the operations manager can develop a prism profile for any given value package or portion of a value package offering. Using this profile, the operations manager can assess his or her most effective options in terms of inventory management, quality management, flexibility

required, interpersonal skills required of the workforce, and related issues. This can help with planning of operations to better understand requirements before a change is implemented, allowing for anticipation of changes in the cost and process structure of the operations. It can help with the execution of change by identifying the options and limitations associated with each value package characteristic. This proposed approach can also help to identify and provide insights into day-to-day management issues, such as the skill sets required of employees.

While this proposed framework is broadly applicable, it has limitations. For example, some issues that affect operations decision making, such as technology and the environment, have not been included here because they have not historically been viewed as differentiators between services and goods. The items focused on here were specifically selected to demonstrate issues associated with the increasingly common blending of services and goods, rather than to focus on their perceived differences. If an operations manager wanted to use this proposed framework as a complete decision support framework, or a researcher wanted to test this proposed framework, the radar chart approach offered here can easily be adapted to take into account other variables that affect operations decision making, some of which may be company or situationally specific.

Future research directions

The four proposed value package characteristics (stockability, intensity of interaction, simultaneousness of consumption, and difficulty to assess performance) were indirectly derived from the salient features of the four traditional characteristics (intangibility, inseparability, heterogeneity, and perishability). However, there might be other characteristics that are worth including in the Value Package Prism in terms of adding to its descriptive and analytical

potential. For instance: is customer participation in the value creation a fifth value package characteristic or is it included in intensity of interaction and/or in simultaneousness? The more activities an operation delegates to the customer, such as on-line product configuration and order placement, the more attention should be given to activities such as customer training and mistake proof mechanisms. Does this justify the definition of a fifth characteristic? Some authors like Gronroos (1982 p 38-39) appear to think so. Customer participation has long been considered as a relevant aspect of the services and goods offering by the Nordic School tradition of service marketing and management research.

Do the four proposed value package characteristics form an orthogonal system; in other words, are the characteristics independent of each other or necessarily correlated in some way? If they are correlated, what is the interaction (e.g. the presence of tradeoffs) among the characteristics and what are the managerial implications of the possible correlations? In matrices relating all pairs of characteristics possible, are all quadrants viable/possible?

Another topic that is potentially fruitful in terms of future research and practice is to further explore the relationship between value packages and production and delivery process / operations characteristics.

The Value Package Prism is presented as one possible seed for the development of a more integrated theory of service and manufacturing management. It offers an operations management view of the services and goods offering mix. With further research, this proposed framework can be developed to provide a more appropriate way for operations managers to plan and manage their own activities and interfaces with other functions.

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