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Theoretical contributions from operations management and economic theories for strategic positioning of services: an integrating proposaltemos

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ABSTRACT: The goal of this article is to join the theoretical contributions of operations management and economical theory for the analysis of services' strategic positioning. In the beginning it presents the explanation about three services taxonomies with similar conceptual formation; these taxonomies are centered in the process perspective and the goal is to develop their contributions for the service strategic analysis. On one hand, it shows the operations vision in relationship to the client contact, the process standardization and the production capacity. On the other hand, it shows the economic vision and it takes into consideration three perspectives: i) the main process involved, if concentrated on people, physical goods, or information; ii) the relationship with the client and the grade of standardization and professional capacity; iii) the degree of capital intensity and scale. As a result, it proposes an integration matrix based on three variables: capital intensity, scale and client's contact.

Keywords: *services, capital intensity, client relationship, scale, processes, strategic positioning.*

INTRODUCTION

The literature on services has experienced a lot of contributions from different knowledge areas. At operations management and economical theories there is a series of proposals for classification of services activities that have proved to be very helpful in the comprehension on services' strategic positioning. Both theories are based on service provision process characteristics, such as composition of labor and capital, composition of back office and front office and degree of interaction with customers. However, despite of these similarities, there is not yet a conversation between these two streams of knowledge.

This paper is an attempt to identify, within the scope of some selected classification proposals, a convergence and complementarities between theoretical contributions of operations management and economical theories of services' strategic positioning. It is driven by the hypothesis that this convergence happens because of a similar conceptual approach that envisages service as a process. The objective is to propose an integrated vision of services' strategic positioning that includes the main variables of service process listed by both theories.

The article is structured into three parts, besides the introduction and the final considerations. The first part presents the main conceptual and classification proposals found in the literature on operations, and on economic theory. In operations management, authors such as Shostack (1987), Schmenner (1995), Silvestro (1999), Collier and Meyer (1998), and Zarifian (2001) were highlighted, while economy driven authors like, Nusbaumer (1984), Walker (1985), Marshall (1988), Miles (1987), Gadrey, Gallouj and Weinstein (1995), and Meirelles (2006, 2010) were focused.

The second part of the article presents two typologies of services strategic positioning, one within the literature on Operations, based on the contributions by Silvestro (1999) and Collier and Meyer (1998) and another within economic theory, based on Miles (1987, 1993), Gallouj (2002) and Meirelles (2010) as sources.

The third part consists of a presentation of an Integration Matrix based on the combination of three variables: invested capital intensity, scale and customer contact intensity. Grounded on this Matrix, a strategic positioning of services is presented.

PROPOSALS FOR A SERVICE ACTIVITIES CLASSIFICATION

The literature on services both on operations and on economy administration presents a series of proposals for classification of those activities (Table 1). Despite the diversity, strong complementarities are noticed among some of the approaches, especially those related to the service provision process.

The authors whose focus is on the administration of processes analyze the complexity of processes of services, on one hand, mainly focusing to identify the core competence of the organization - central versus external services (Shostack 1987). On the other hand, complementary visions focus on the productive processes characteristics, and on the choices among mass or large volume, and customized service offer (Silvestro 1999; Collier and Meyer 1998).

In the scope of economy, service activities classifications examine a variety of aspects, both in supply and demand, including the functions carried out by services and their target audience (Nusbaumer 1984); the characteristics of the production process and its outcome, if tangible or intangible (Walker 1985); or still, the expertise content (Marshall 1988), the main resource involved (Miles 1987), the nature of customer relationships and the varied types of solutions (Gadrey, Gallouj and Weinstein 1995), the degree of professional training, besides service product (outcome) standardization (Gallouj 2002), and the linkages with economic process (Meirelles 2006).

As presented ahead in the economic vision item of this article, within the economic field, Meirelles (2006) vision of services offers a competitive strategies approach according to capital intensity and scale of operation, aspects traditionally considered in manufacturing, although mostly ignored when dealing with services. In the author's vision, service is work in its wide and fundamental sense, and can be accomplished not only through human resources (human labour) but also through machines and equipment (mechanical labour). In this sense it is a proposal of classification that seeks to integrate services into economic processes. In all the stages of the economic processes in which work takes place, there is a service potential, although for

Table 1

Summary of the Proposals for Service Activities Classification (operations and economy visions)

Author (s)	Classification	Classification Criterion
Shostack (1987)	• Central services: represent the organization core business • External services: ancillary services to support central services	Process complexity and diversity
Silvestro (1999)	• Mass services: high volume of customers assisted and low variety of services • Services Store: medium volume of customers assisted and average variety of services • Professional services: low volume of customers assisted and high services variety.	Organization's productive volume and variety (group of service characteristics)
Collier e Meyer (1998)	• Customer routed service: customer has high degree of freedom to select a service encounter activity sequence. • Co-routed service: moderate number of stages (pathways) in the provision of services to customers • Provider routed service: high degree of management control into the service system.	Number of pathways created by the management and service encounter activity sequence.
Nusbaumer (1984)	• Primary services: supplied by factors of production in all economic activities. • Intermediate services: related to the marketing and distribution of goods and other services. • Final services: related to final consumer welfare and quality of life, including public health, safety and education services.	Role and position in the circuits of production and exchange
Walker (1985)	• Production supporting services, which result in concrete and tangible products. • Logistic, work, money, information services, and those related to rent and asset ownership transfer. • Services essentially based on work (labor services). • Government services.	Bond established in productive process and final result (tangible or intangible)
Marshall (1988)	• Information Processing Services; • Services related to production of goods and merchandise; • Personal support services	Expertise content and performed function.
Miles (1987, 1993)	• Physical Service • Person-Centered • Information Service	Main process involved (if based on people, physical goods or information)
Gadrey, Gallouj e Weinstein (1995)	• Quasi-goods: standardized solutions, with different possibilities of precision. • Customized Services: different solutions, customized to meet client's needs • Co-production: customers' participation in the provision of services.	Nature of customers solution. Emphasis in service relationship.
Gallouj (2002)	• Quasi-goods: standardized services that demand high degree of professional training • Quasi-goods, packages, operations or manual services: standardized and demand intermediate or low degree of professional training • Operational or manual (custom-made) services, informational or relational services: non-standardized services that demand intermediate or low degree of professional training • Intellectual or professional services: non-standardized services that demand high degree of professional training.	Degree of professional training and standardization.
Meirelles (2006)	• Pure service: implies carrying out a single and exclusive work. The result of the work process is the work itself, not necessarily a resulting product. • Transformation Service: implies carrying out the necessary work to transform inputs and raw materials into new products. • Exchange and circulation services	Nature accomplished work and bond with production, exchange and circulation stages.

Source: Adapted by the authors.

this potential to take place the work process involved has to be an autonomous economic activity, which is structured on a contractual arrangement (formal or informal), with a goal to provide service.

Furthermore, according to Meirelles (2006), once service is a work process, one can possibly distinguish the service from the product to which it is associated, as well as from the assets and inputs used in the productive process. "Service can only be characterized as such as long as there is work to be accomplished, regardless of the inputs used, whether tangible or intangible, or if working methods used are human or mechanic."

Operations vision

From the Operations' point of view, service is the most efficient resources organization and mobilization to interpret, understand and generate the targeted changes of conditions of client user's activities (Zarifian 2001b). According to Fitzsimmons and Fitzsimmons (2000), although sometimes difficult to identify, there is a distinction between goods and services. The authors use a services classification based on client interaction, and labor intensity. Thus, they highlight the following special characteristics that differentiate services from goods: the client participates in the process of service provision, simultaneous production and consumption of service, capacity perishability, selection of location based on clients, labor intensity, intangibility, and difficulty to measure production.

Shostack (1987) explains that services are not "things"; therefore, they ought to be noticed as processes instead of objects. As processes, they show the aforementioned characteristics (intangibility, perishability, simultaneity in production/consumption, and client's participation in provision of services). The author suggests two ways to describe the service provision process: one according to the stages and sequences that constitute the process (process complexity), and another in consonance with stages and sequence variability (diversity).

According to Zarifian (2001b), in an approach to service value, management should comprehend pertinence (activities based on front office employee-customer relationship) with an intent to combine organizational objectives and client's expectations. It should also comprise efficiency and efficacy, technical logic concerns, which coordinate, respectively, clients' expectations with available organizational resources, and those with the services provider's objectives (support interface). From the relationship between the results achieved and the organizational resources, the entity can control its efficiency and pertinence.

Besides the final demand, there is a growing intermediate services demand by the organizations due to the role of information and expertise in society, and also because the companies are favoring purchase over doing. The industry has discovered and is now incorporating the notion of service, and so is the services sector, which is becoming more industrialized (Zarifian 2001a). In that way, services organizations, as well as industrial organizations are composed by three major activities: the conception of new technologies and new products and services; the great technical systems that ensure actual production of products and services, and the direct clients / users relationships.

The service value can be acknowledged by the client's logic based on two aspects: client and employee meeting and technical interface. When client and employee meet, service value can be apprehended through the employees' professional ability to identify and know the client user's activity, and to interpret and understand the problem of the service end-user. In the technical interface, according to Zarifian (2001b), the organization provides value to the client (and to society), when taking the consequences into account, in other words, when they offer services that meet assessment aspects such as usefulness, justice, solidarity and aesthetics.

Taking into consideration that for service to be efficient, integration among the three dimensions previously mentioned is important. Firstly, one needs to interpret and understand client user's expectations so that a group of techniques to gather information can be developed and, finally, a distinction between innovation regime (for prospect clients) and routine regime (existing services ways and forms) can be established. When interpretation and understanding demand that differentiated solutions for the client users to be devised, it is said that the solutions should be created to meet a client users' non satisfied needs, in which innovation plays its role.

As stated by Heskett & Schlesinger (1997), those results not only represent control, but also a fundamental element in the concept of the service.

It can be used to equate the value of the service, increasing quality and reducing costs. The strategy of the service-profit chain, should contemplate quality and productivity results (by means of employees' training and satisfaction, besides operational strategies) in order to increase service value, thus achieving client's satisfaction and loyalty, and, consequently, income and profitability growth for the organization.

These authors have a vision of strategic service that consists of four elements: identification of the target market segment; development of a concept of service to contemplate the needs of target clients; prioritization of operational processes to sustain the service concept and; projection of a delivery service system to support the operational strategy.

That strategic vision can couple a multi-criteria evaluation to monitor organizational pertinence and efficiency control. According to Gadrey (2001), technical, financial, relationship, ecological, innovation and reputation criteria can offer the service provider the necessary feedback about their productivity.

Thus, in general, services which are regarded as processes are basically analyzed in relation to the following dimensions: complexity/diversity, tangibility/intangibility, people / technology based; high/low demand, and client / service provider relationship tenure. These dimensions can be summarized in a framework for analysis of service provision in organizations composed by the logic of client, of employee and technical. (Figure 1). The framework illustrated above has been presented and

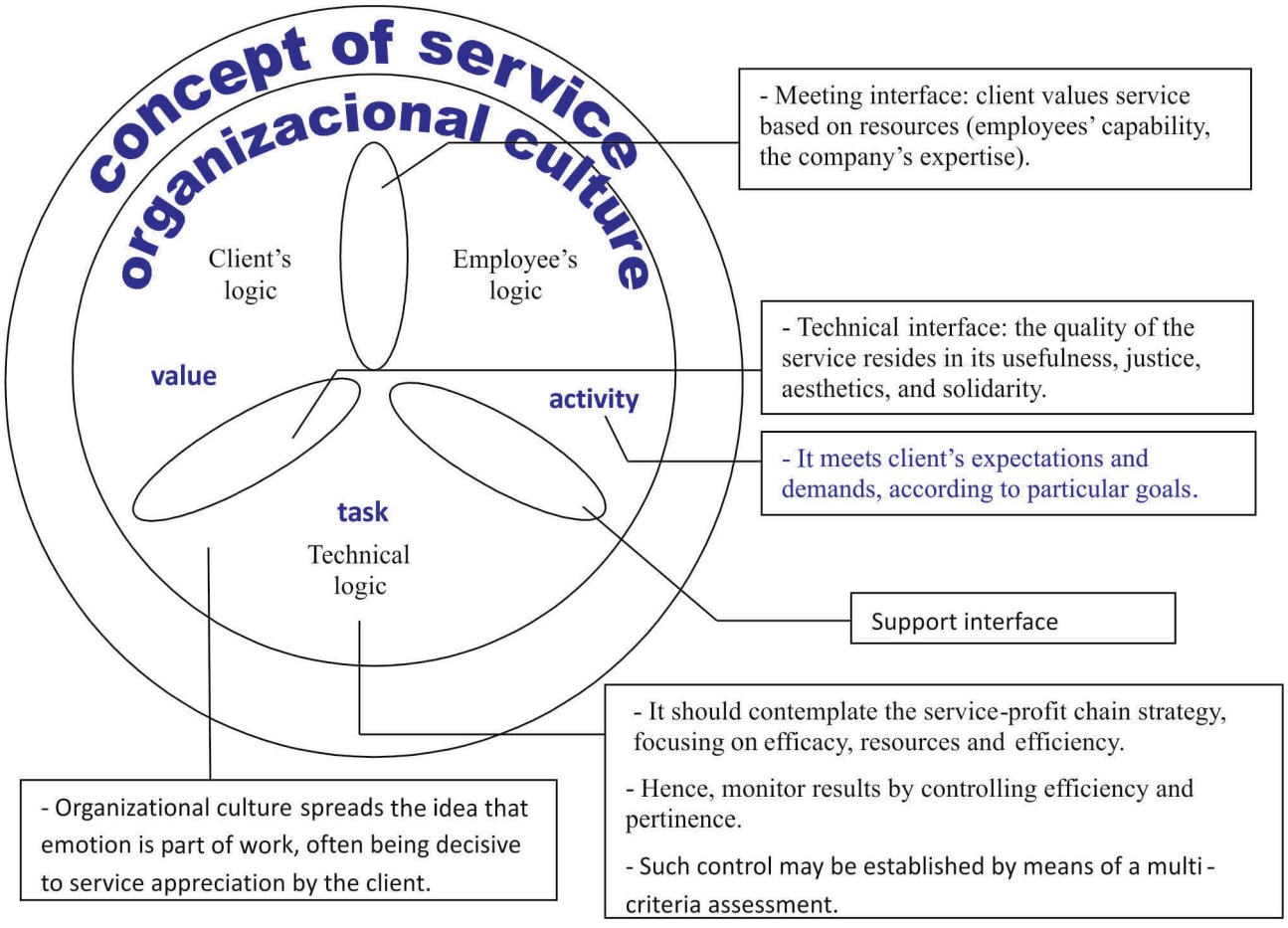

Figure 1. **Framework for analysis of front office work.** Source: Klement (2007). Adapted from Kingman-Brundage(1995), Zarifian (2001b) and Gadrey (2001).

The articulation of these services characteristics results in several typologies of service strategic positioning, such as the matrix of service process proposed by Schmenner (1995) and Silvestro (1999).

The degree of labor intensity and the degree of customer interaction and customization are two very important variables in investigating the strategic choices in service operations. These variables were first jointly measured in the matrix of service process proposed by Schmenner (1995). As shown in Table 2, the combination of labor intensity, defined as the ratio of labor cost to plant and equipment, and customer interaction and customization, which refers to the need and ability to alter the service in order to satisfy the individual customer's particular preferences, results in a matrix with four typical services: service factory (low degree of labor intensity and a low degree of interaction and customization); service shop (low degree of labor intensity but a high degree of interaction and customization); mass service (high degree of labor intensity but a low degree of interaction and customization); professional service (high degree of labor intensity and a high degree of interaction and customization).

Table 2

The Service Process Matrix (Schmenner 1995)

		Degree of Interaction and Customization	
		LOW	HIGH
Degree of Labor Intensity	LOW	**Service Factory** Truck lines, hotels/motels, and airlines	**Service Shop** Hospitals, auto repair shops and many restaurants
	HIGH	**Mass Service** Retail/wholesale firms and schools	**Professional Service** Doctors, lawyers, accountants, architects, and investment bankers

Source: Adapted from Schmenner (1995, p. 11)

Silvestro (1999) proposes a services classification matrix, based on the organization productive volume – which is defined in the service process model as the volume of processed clients per business unit per period, - and by variety, which represents a group of service characteristics - focus on people/equipment, degree of client relationship, front office value-added, customization degree, degree of employee's discretion and focus on the product/process (see figure 2).

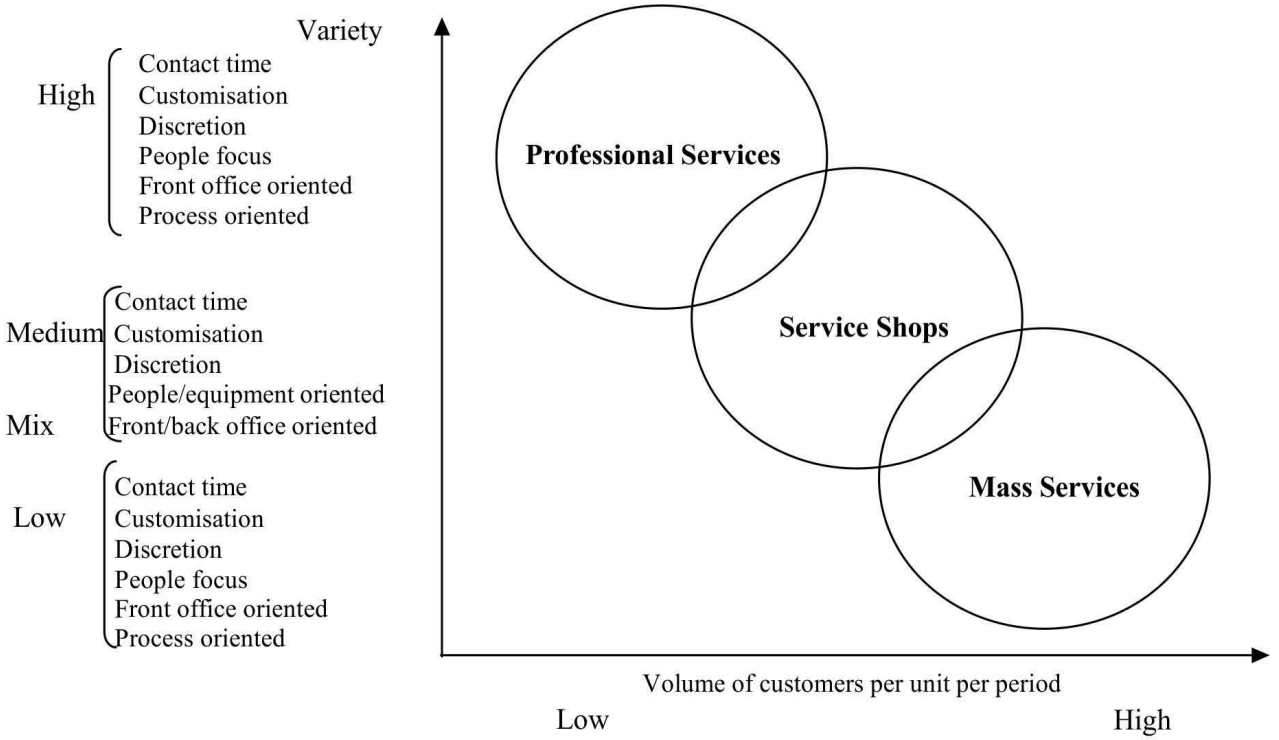

Figure 2. **The service process model (Silvestro 1999).** Source: Silvestro (1999, p. 401)

The framework illustrated above has been presented and discussed among academics since 1992, and it is an adaptation of the product-process matrix proposed by Hayes and Wheelwright (1979) for services. Collier and Meyer (1998) criticize that model in one of their papers, arguing that the relationship between product and process inexists in many services. Among the examples mentioned by the authors is the rise in hotel companies' turnover that increase number of units without modifying their processes.

Collier and Meyer (1998) also criticize the complexity of the six dimensions that compose the vertical axis. The authors find it is not clear how these six dimensions are defined within a single axis. On the other hand, they do not fail to acknowledge that as technological information capacity increases, service volume can be more related to decisions regarding the process design, particularly in high information volume businesses.

From the analysis of that matrix and the study of other authors (Schmenner 1986; Tinnila and Vepsalainen 1995; Kellogg and Nie 1995 apud Collier and Meyer 1998), Collier and Meyer (1998) propose a new service positioning matrix, which is based on two axes: the vertical axis that portrays the number of pathways built into the service system by the management; and the horizontal axis, which portrays the customer's service relationship activities' sequence (Figure 3). The two axes are conceptually independent. Therefore, the strategies used for the provision of services refer to customer's freedom to choose services from a number of management devised pathways, and the sequence of customer service encounter activities. This way, the services strategies can be customer routed (customer's higher degree of freedom to choose sequences), co-routed (customer and managers act jointly) and provider routed (management restricts the number of customer's pathways and choices).

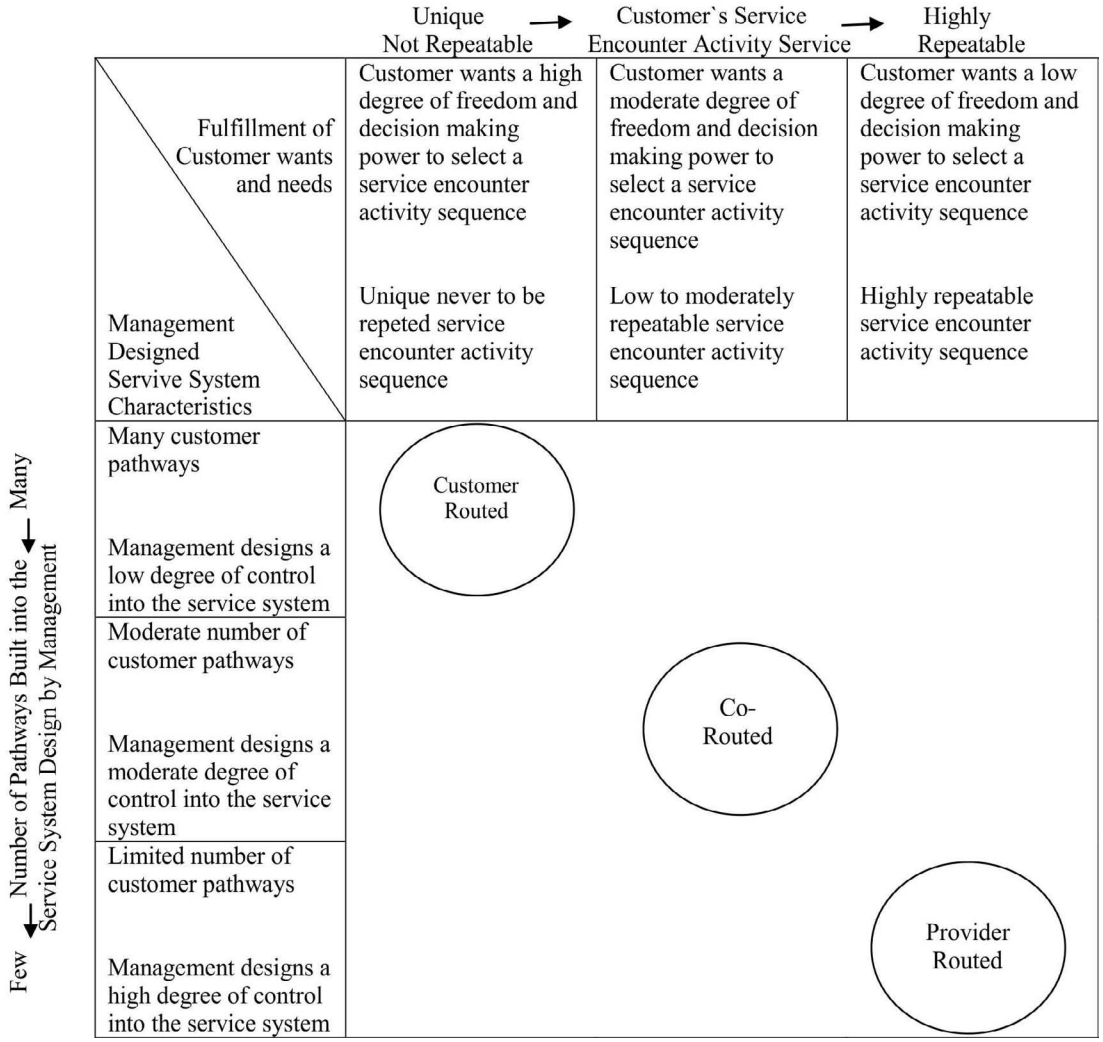

Figure 3. **The service delivery system matrix.** Source: Collier & Meyer (1998, p. 1231)

Economic vision

The economic literature on services has basically focused on Economic Development, discussing aspects related to the productivity and impact on job generation and income. In Industrial Economy there are few works related to the market dynamics of these activities, in terms of competition degree, market strategies, production unit organizational structures and market regulation, etc.

Among the restricted group of authors that deal with the aspects of services market, it is worth mentioning the works of Miles (1987, 1993) and Meirelles (2003, 2010). On one hand, Miles highlights the specificities of the production process and the sector's market organization. On the other hand, Meirelles deepens the understanding of the competition structural constraints in services, proposing a market structures typology for the sector.

In Miles' vision (1993), the services present a series of feature specificities in the production, product and consumption, as well as in the organizational structure itself and market regulation. As shown in Table 3 below, within the production process, the following characteristics stand out: the inter-activity between producers and users; the intensity in the use of human resources - which does not apply to every type of process -, and derived organizational problems, particularly those related to the control of the productive process. Among the product characteristics, the most specific include intangibility, intensive use of information, customization and the non storable character. Last, in what refers to the market characteristics, a variety of production organizational structures stands out, both in terms of company arrangements (public, private or mixed), as well as in terms of company size and performance.

Table 3

Special features typically attributed to services (Miles, 1993)

Service Production	- Heavy investment in buildings; requirement of physical space to integrate producers and users. - Some services are intensive in highly specialized and qualified workforce, others involve relatively unskilled labor. - Organization of labor process is often problematic because it is difficult to control and manage the process in its details.
Service Product	- Non-material and often information-intensive. - Hard to store or transport. Process and product hard to distinguish. - Often customized to consumer requirements.
Service consumption	- Production and consumption co-terminous in time and space. - Services are 'consumer-intensive', requiring inputs from consumer into design/production process.
Service markets	- Organization of markets varies from public services, administrated by government, to private services, operated in small scale by familiar firms. - In general there are devices and institutional mechanisms of market regulation, with the objective of protecting the consumer and guiding him on its consumption decisions, considering the difficulty of demonstration in advance the service products.

Source: Adapted by the authors from Miles (1993 *apud* Marshall & Wood, 1988*)*.

The fundamental aspect of Miles analysis is service diversity. All the specific characteristics pointed out (intensive use of labor work, non storable, customization, etc.) can be more or less preponderant depending on the service that is being analyzed. The author intent is to "move away from a view of services as homogeneous, and universally and inherently poor in terms of innovation, to a picture which highlights diversity and change".

Miles proposal of service classification is based on two dimensions: production process and market structure (Table 4). According to the author, there are three main production process: i) people based; ii) physical goods and other such resources, artifacts and commodities (e.g. buildings, parks); iii) or information (which includes, but is broader than, knowledge). For each of this process there is a great variety of market type. Some services, like person-centered, are predominantly of state type, but information service involves all four types of market.

Table 4

A Classification of Services along Two Dimensions: Types of Production Process and Type of Market Structure

Market Type	Production Type		
	PHYSICAL SERVICE	**PERSON-CENTERED**	**INFORMATION SERVICE**
STATE		Welfare Hospitals Health, medical education	General government Public Broadcasting
CONSUMER	Domestic service Catering Retail trade Post	Barbers etc.	Commercial Broadcasting Entertainment
MIXED	Laundries Hotels Laundry Repairs		Real estate Telecommunication Banking, Insurance Legal services
PRODUCER	Wholesale trade Physical distribution & storage		Engineering & architectural services Accountancy Miscellaneous professional services

Source: Miles (1987)

The main concern of Miles classification of services is about technological trajectories and innovation dynamics of different groups of services. In this sense, he has spent many efforts on understand those providing information and knowledge functions (computer services, R&D, design services, consultancies, etc.), denominated KIBS – Knowledge Intensive Business Services (Miles et al, 1995)

Gallouj (2002) proposes a typology based on two vectors: degree of standardization of the service and degree of professional training. As shown in the diagram below (Figure 5), the author classifies service provision in four groups, based on those criteria: i) intellectual or professional services (consultancy, health, education, research); ii) experts systems and technology mediated services (distance learning and telemedicine); iii) operational or craft services and informational or relational services; iv) quasi-goods, packages and manual or operations services, such as financial and catering.

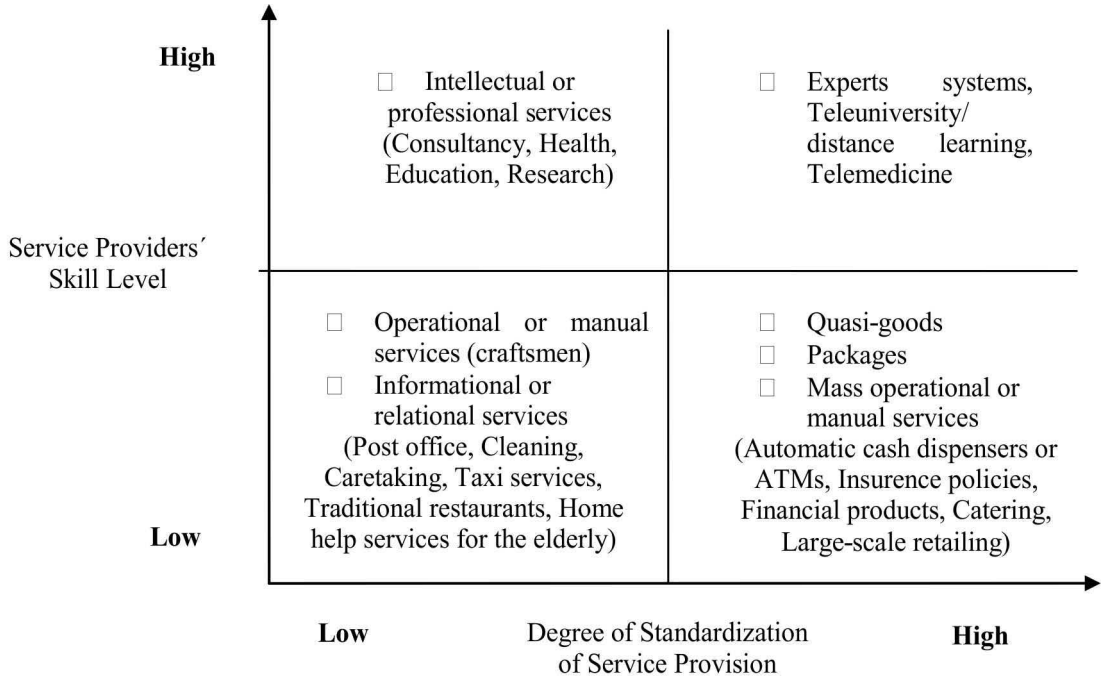

Figure 5. **A typology of "products" by degree of standardization of service provision and service providers' skill level.** Source: Gallouj (2002, p.44).

Still within an economic perspective, Meirelles (2010) proposes a matrix of service competitive strategies based on two variables: capital intensity and operation scale. It is based on the assumption that investment in capital and technological development is a structural tendency of the services sector in modern economy, rather than an external influence, originated from the industry's technological developments. In this perspective, the services strategic possibilities are expanded, especially in regards to exploring scale economies, and profiting from productivity. Figure 6 bellow presents four strategic possibilities identified in services: i) Reputation and Customer Loyalty; ii) Control and Standardization of Procedures and Economies of Learning; iii) Technological Updating and Innovation; iv) Physical Infrastructure and Scale Economy.

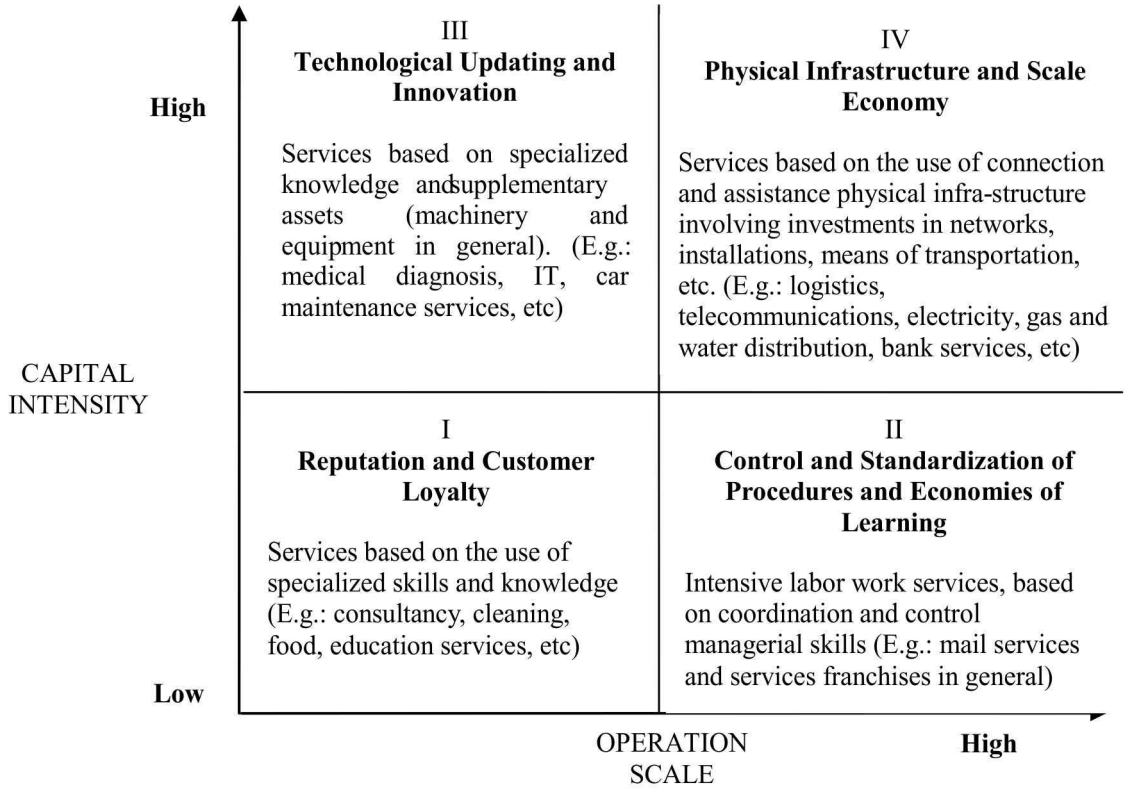

Figure 6. **Matrix of Competitive Strategies in Services**. Source: Meirelles (2010)

Great part of the service companies is positioned in quadrants I and III, in other words, small and medium businesses, with low operation scale. Companies in quadrant I are traditional services providers, based on the use of specialized skills and expertise, but low technological content. Quadrant III concentrates companies of a more technological profile, where the service rendered is more intensive in capital, supported by complementary assets.

In quadrants II and IV we find the service companies that opt for large scale operation, supported by managerial coordination skills and high investments. In the case of quadrant II (low capital intensity), the companies are usually structured in wide branch network or outsourcing with franchise contracts, for instance. Companies of high capital intensity (quadrant IV), on the other hand, are supported by a physical network of cables and wires, such is the case of telephony and electric power distribution. In these two cases, of low or high capital intensity, exploration of scale economy is the main source of competitive advantage.

In the cases of low capital intensity, economy of scale relates mainly to shared work earnings, depending, therefore, on people and processes managerial abilities, which can be called economy of learning. In the case of high capital intensity, the economy of scale is a natural outcome of the assets own nature, which are highly specific and indivisible, in other words, they are network economies (Meirelles 2010).

Capital intensity and operation scale are considered the main sources of entrance barrier in the traditional literature of industrial organization, based on investment costs or even on technology domain (Scherer and Ross 1990).

Following the same theoretical line, Meirelles (2010) propose that the nature of the barriers and the degree of entrance difficulty in services can be analyzed according to capital intensity and operation scale. The larger the capital intensity, the larger the expenses in back office, related to the construction and operation of physical connection networks. In these cases the typical barrier of entrance is costs and the associated strategy is to reduce costs, in the sense of exploring all costs advantages. On the other hand, the smaller the capital intensity, the larger the investments in front office, related to the expenses in activities that provide satisfaction and loyalty, as is the case of expenses with training and marketing.

In these types of services, relational barriers prevail and the associated strategy is differentiation, defined by expenses that guarantee the companies position in the market.

Relational barriers are a result of the bonds established between service provider and user. These bonds are fundamental in establishing advantages of users' preferences, because, they are ultimately the warranty that the service's final result will meet the expectations. There are situations in which bonds demand investments in activities that provide satisfaction and fidelity, as is the case of expenses with training, marketing etc. However, these expenses do not constitute a relevant factor of entrance impediment. Usually the impediment to the entrance is gagged by the duration of the relationship and by the company's reputation. Recommendations by third parties are very common in these cases, since they know the quality of the services rendered (Meirelles 2010).

It is important to observe that in situations of high capital intensity, the exploration of economy of scale will not necessarily take place. And vice-versa, favorable situations for the exploration economies of scale do not necessarily derive from high capital intensity. They are situations in that the competitive advantage is in the exploration of managerial aspects that allow large scale supply. This is the case, for instance, of mail services and some franchise service (Meirelles 2010).

Figure 7 shows a matrix proposed by Meirelles (2010) in which four types of entrance barriers are identified: relational; cost and or technological; and of scale. In situations of low capital intensity and small operation scale (quadrant I), relational barriers prevail. Relational barriers can be reinforced in situations of high technological content, where the domain of knowledge is specific to that relationship, mainly when service provision involves the use of dedicated assets. This is the case of the companies in quadrant III. In these situations, besides relational barriers, there are technological barriers, defined by specialized technical knowledge, and cost barriers, due to expenses for the acquisition, maintenance and technological updating of machines and equipment, as well as in training to their use. The cost barriers are strongly present in situations of high capital intensity and large operation scale (Quadrant IV), though much more stressed than those verified in quadrant III, due to the high volume of investment and high risk involved.

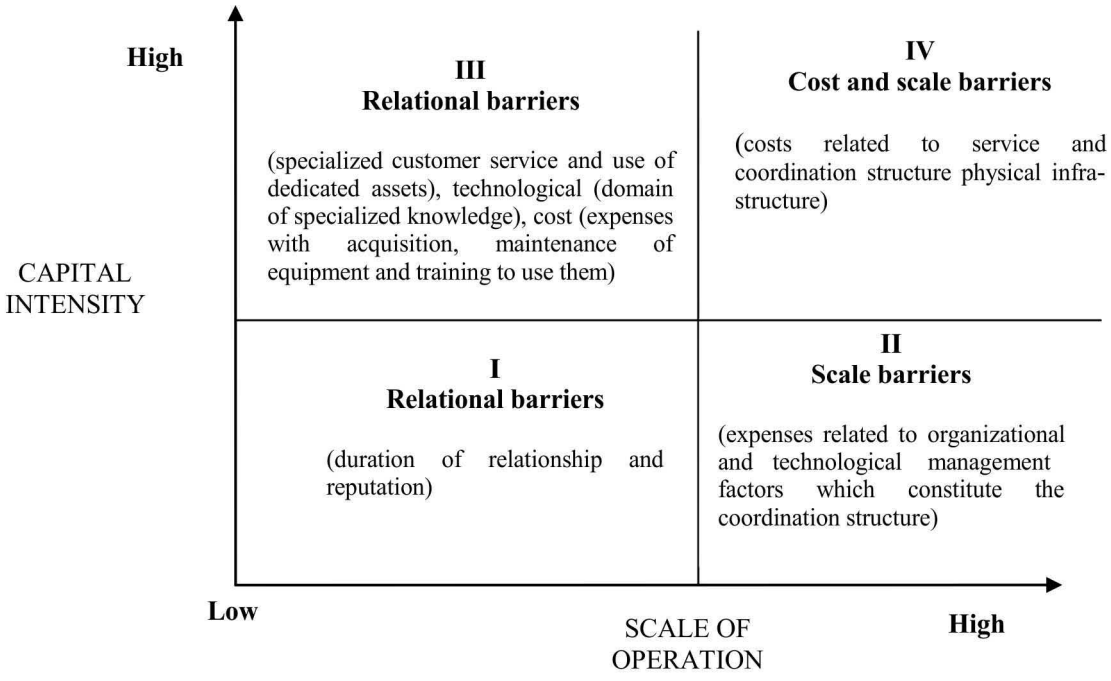

Figure 7. **Matrix of Barriers of Services Entrance.** Source: Meirelles (2010)

This view of entry barriers brings a new perspective in service strategies, since the literature on services has been pointing out that there are few entry barriers in services. Schmenner (1995) for example says that there are few barriers in service industries, since these are activities based on the intensive use of labor work and almost operations do not require high investment in capital.

By the opposite, according to Meirelles (2010) capital intensity is a central variable in service strategies and can explain not only entry barriers but also the fast growing of service firms. Even in services based on the intensive use of labor work, there are important barriers, related to the bonds between users and producers.

AN INTEGRATING PROPOSAL

What is clear from the analysis of the three proposals for classification of services' strategic positioning presented here is that there are several similarities between the operations literature and economics, especially in the authors whose focus is on the component elements of the process of service delivery and how the coordination of these elements results in different types of services strategies.

As we can see in table 5 below, there are three main variables of work process: capital intensity, customer contact and scale. Although nominated in different ways by the authors, each of these variables is presented in both theories.

Table 5

Variables of work process in operations and economic vision

Variables	Operations vision	Economic vision
Customer contact	- Contact time/Customization/Discretion (Silvestro 1999) - Front or back office oriented (Silvestro 1999) - Interaction and Customization (Schmenner 1995) - Customer freedom/control of service system by management (Collier and Meier 1998)	- Service diversity (Miles 1987, 1993) - Degree of Standardization (Gallouj 2002)
Capital	- People/equipment oriented (Silvestro 1999) - Degree of labor intensity (Schmenner 1995)	- Production process people, physical or information based (Miles 1987, 1993) - Service providers´ skill level (Gallouj 2002) - Capital Intensity (Meirelles 2010)
Scale	- Volume of customers (Silvestro 1999) - Repeatable service encounter (Collier and Meier 1998)	- Scale (Meirelles 2010)

Source: Adapted by the authors.

It is interesting to notice that some authors nominate their variables according to the degree of intensity, sometimes considering the same variable by the opposite scale. For instance capital intensity is considered by some authors according to people focus (Silvestro 1999) or degree of labour intensity (Schmenner 1995). The same happens with customer contact, it has been considered by some authors according to the degree of interaction and customization (Schmenner 1995) or diversity (Miles 1987, 1993), while others considers the degree of standardization of service provision (Gallouj 2002). Sometimes one variable is related to another such as capital intensity and technological content or scale.
Table 6 below presents a proposition for an integration Matrix as a means of gathering the contributions from those three typologies, based on the combination of capital intensity and technological intensity into a single vector, since that incorporates technological intensity. The contact intensity and scale are dealt with separately in two other vectors.

Table 6

Matrix of services integration strategy

	High Contact		Low Contact	
	Low Capital Intensity	**High Capital Intensity**	**High Capital Intensity**	**Low Capital Intensity**
Large scale	**I** - Control and Standardization of Procedures; - Reputation and Loyalty.	**III** - Physical infrastructure and Exploitation of Economies of Scale -Technological updating and Innovation - Reputation and Loyalty	**V** - Physical infrastructure and Exploitation of Economies of Scale -Technological updating and Innovation	**VII** - Control and Standardization of Procedures; - Exploitation of Economies of Learning
Small scale	**II** -Reputation and Loyalty	**IV** -Technological updating and Innovation - Reputation and Loyalty.	**VI** -Technological updating and Innovation	**VIII** - Low cost and low quality

Source: by the authors.

With this systemization it is possible to include strategy typologies exceptions and paradoxes that are proposed in the literature on operations management, and presented here. Regarding customization strategy both high and low contact intensity may occur, contrary to what most of the current literature defends. In general, customization and high contact intensity are associated, although services such as the most different types of repairs (clothes, for instance), or financial services in general, are clear examples of low customers contact intensity. That contact will usually only happen at "delivery", after a more intense back office service work generates a customized service.

In an inverse manner, massification, which is most of the time associated to technology and capital intensity, is also associated to low contact intensity. However, there are clear cases of massification and high contact intensity, like restaurant and franchise services in general, where processes standardization does not eliminate high contact with customer.
Studies and proposals of services classification and strategies also associate technology and capital intensity to services "industrialization". This is true in many situations, such as self-services in general. On the other hand, high capital intensity services which demand great contact intensity, like hospital services in general, should also be highlighted for their complexity and need for customer's "direct participation."

Another aspect that deserves attention is that technological intensity today no longer allows for dichotomy between customization and massification in the services operation process, even when contact is low. As an example, one can mention the services provided by Amazon.com, in which information technology allows for volume processing (mass) plus service personalization (customization according to customer's request).

Finally, it is worth noticing that differently from a sort of typologies, like that of Schmenner (1995), Silvestro (1999) and Gallouj (2002), in which the degree of standardization and professional training is related to certain types of services (for example, consultancy services associated with high degree of training, yet low standardization), it is possible to implement in any service category a variety of business / service modalities, including standardization and customization, high or low operation scale, with high or low technological content.

This perspective deprives the business strategies

in services of its sectorial character. For instance, high capital intensity in hotels, through the use of information technologies and integration management softwares, allows a high level of standardization and high processing capacity, without, necessarily, reducing contact intensity with customers.

Figure 8 below shows different forms of hotel services, according to different combinations between contact intensity, capital intensity, and scale of service processing, which generate different businesses strategies.

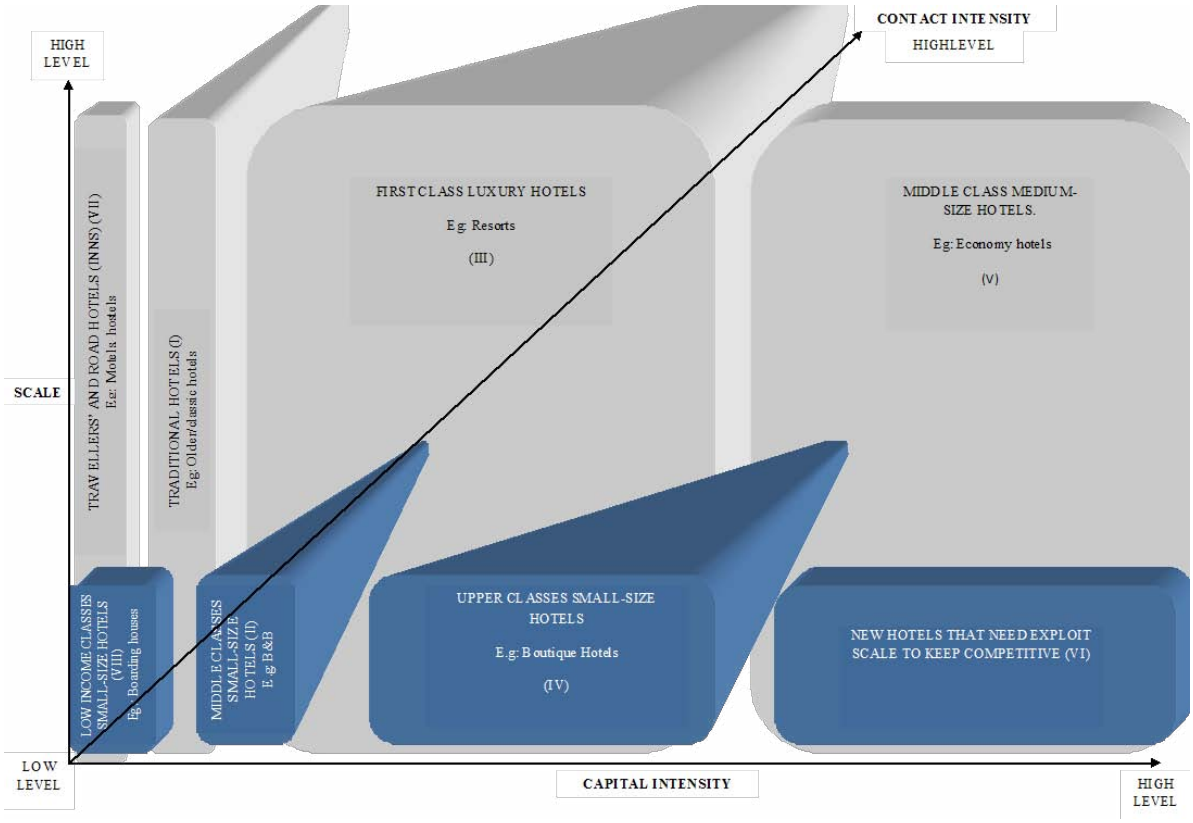

Figure 8. **Application of integration Matrix for hotel services.** Source: by the authors.

In accordance with the integration Matrix strategy proposed here, the competitive advantages go beyond traditional visions of positioning which are based on cost and/or differentiation, as it includes innovation, above all. Actually, the competitiveness tends to be higher when the three advantages are associated, as indicated by the arrow in figure 8. The arrow indicates the direction of technological innovation and capital intensity. However, it is important to notice that companies do not necessarily follow the arrow path, in their pursuit of higher competitive outcomes. In the case of hotel services, it is possible to identify four positioning possibilities according to advantage factors such as:

1. Cost: low customer contact and low capital intensity, possible large scale operations (hotels along highways) or not (small-sized hotels for low income customers).

2. Differentiation: high contact and low capital intensity, possible large scale operations (traditional hotels) or not (small family hotels for high income customers).

3. Cost and differentiation: high contact, high capital intensity and large scale operations (upper class hotels and franchises).

4. Innovation: high capital intensity (services information systems through Internet, integrated management systems, and high investments in intelligent building structures), both in small operation scale (differentiation gains) and in large operation scale (cost gains). Paradigmatic examples: boutique hotels and low budget or super low budget hotels.

Despite a growing tendency for efficiency gains

in detriment to differentiation, in the case of the hotel industry, mainly represented by the growth of the so-called budget hotels – organizations that invest heavily to standardize processes enough so to profit in scale – this investment in efficiency through innovation has also greatly benefited hotels whose strategy is focused on the provision of low scale services. After all, back office processes standardization makes it possible to revert the investment in front office services customization and differentiation, as is the case of boutique hotels.

Another important aspect of the hotel industry is the market saturation of traditional and first class (luxury) hotels, as well as the great investment in intelligent building structures, two additional factors that benefit budget hotels, on the one hand, and boutique hotels, on the other.

FINAL CONSIDERATIONS

This theoretical essay aimed to identify common elements present in some services strategies typologies in the literature on operations and economy, whose perspective is based on the services provisioning process. In that sense, managerial and customer relationship aspects, as well as economical and technological aspects were gathered.

Based on the theoretical contributions from both operations management and economic theories an integration Matrix was proposed, derived from the combination of three variables: capital intensity, operation scale and customer contact intensity.

From this integrative proposal, it is possible a broader analysis of services strategies that transcends sector boundaries and allows strategic combinations traditionally seen as incompatible, such as standardization and contact with the consumer. High capital intensity, a characteristic increasingly common to all services, allows a high level of standardization and high processing capacity, without, necessarily, reducing contact intensity with customers.

The Matrix proposes modalities of service provision that include standardization as well as customization, small or large operation scale, high or low capital intensity. Eight service provision possibilities can be identified according to the combination of capital intensity, operation scale and degree of customer contact. For each of these combinations four strategies can be exploited:

- Reputation and Loyalty: strategies commonly explored in low capital intensity, high contact, and small operation scale processes.

- Physical infrastructure and Exploitation of Economies of Scale: strategies frequently adopted in situations of high capital intensity, low contact and large operation scale.

- Technological updating and Innovation: typical strategies for high capital intensity, both in large and small operation scale processes.

- Low cost and Low quality: strategy adopted by companies that opt for low capital investment, and small operation scale. Competitiveness tends to be higher as technological updating and innovation strategies are combined with investments in physical infrastructure and exploitation of economies of scale. However, it is important to notice that services companies do not necessarily position themselves in pursuit of growing competitiveness. Within the same industry, as is the case of hotels, companies of different size, different efficiency levels, and varied market segmentation co-exist.

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