REVISTA DE GESTÃO EM SISTEMAS DE SAÚDE

E-ISSN: 2316-3712
DOI: 10.5585/rgss.v3i1.75
Data de recebimento: 12/03/2014
Data de Aceite: 21/05/2014
Organização: Comitê Científico Interinstitucional
Editor Científico: Marcia Cristina Zago Novaretti
Editor Adjunto: César Augusto Biancolino
Avaliação: Double Blind Review pelo SEER/OJS
Revisão: Gramatical, normativa e de formatação

INOVAÇÃO EM HOSPITAIS E A LÓGICA DOMINANTE DE SERVIÇO

RESUMO

O desenvolvimento da pesquisa sobre inovação em serviços resultou em três abordagens: tecnologista, baseada em serviços e integradora. Cada uma possui um enfoque específico sobre o papel da tecnologia e o caráter endógeno ou exógeno das inovações em serviços. O caminho escolhido pelo estado da arte da pesquisa na área tem sido o de consolidar uma perspectiva integradora. Novas pesquisas têm usado a lógica dominante de serviço permitindo um olhar integrado das atividades econômicas sob uma lógica de valor atrelado aos serviços. Este enfoque tem criado a possibilidade de expandir a abordagem integradora, focando em como as inovações alteram a proposta de valor de um determinado serviço por meio de novas tecnologias, pela inovação em métodos ou na relação de serviço. O objetivo deste artigo é desenvolver esta perspectiva a partir da investigação dos serviços hospitalares. Estas atividades, pela sua complexidade e forte interação com diferentes atores econômicos e sociais, permitem trazer à tona muitas das questões teóricas fundamentais que cercam o debate sobre inovação em serviços, além de possibilitar que um novo olhar seja lançado sobre a gestão hospitalar. Tendo como base entrevistas semi-estruturadas, foram realizados estudos de caso sobre inovações em serviços hospitalares no Brasil e na França entre os anos de 2006 e 2010. As inovações estudadas envolvem novos métodos de relacionamento com os usuários, adoção de novas tecnologias e inovações oriundas de Pesquisa e Desenvolvimento. Estes estudos de caso permitiram identificar tipos, atores e resultados do processo de inovação a partir de uma perspectiva integradora ampliada, envolvendo a análise baseada em características e a lógica dominante de serviço.

Palavras-chave: Hospitais; Inovação em Serviços; Lógica Dominante de Serviço; Abordagem Integradora da Inovação.

INNOVATION IN HOSPITALS AND THE SERVICE-DOMINANT LOGIC

ABSTRACT

The development of the research on innovation in services has resulted in three approaches: technologist, service-based, and integrative. Each has a specific focus on the role of technology and the endogenous or exogenous character of innovations in services. The path chosen by state of the art research in the area has been to consolidate an integrative perspective. New research has used a service-dominant logic which allows an integrated view of economic activities based on the logic of value linked to services. This approach has raised the possibility of expanding the integrative approach, focusing on how innovations change the value proposition of a particular service through a new technology, by innovation in methods or in the service relationship. The aim of the present article is to develop this perspective using empirical research into hospital services. These activities, due to their complexity and strong interaction with different economic and social actors, bring to the fore many of the fundamental theoretical questions surrounding the debate on innovation in services, and provide a new perspective on hospital management. Based on semi-structured interviews, case studies on innovations in hospitals in Brazil and France were conducted from 2006 to 2010. The innovations studied involve new types of relationship with users, adoption of new technologies and innovations stemming from research and development. These case studies identified types, actors, and outcomes of innovation in order to develop an approach based on a broader integrative perspective, involving the analysis of characteristics and the service-dominant logic.

Keywords: Hospitals; Innovation in Services; Service-Dominant Logic**;** Integrative Approach to Innovation.

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1 INTRODUCTION

Research on innovation in services has become an important field in the study of innovation management. Initially based on analyses of the diffusion of technological innovations, studies began to include non-technological innovations and, more recently, innovations that combine technical devices and relational elements.

This development resulted in three approaches to innovation in services: technologist, service-based and integrative (Gallouj & Savona, 2009). Each has a specific focus on the role of technology and the endogenous or exogenous character of innovations in services. The path chosen by state of the art research in the area has been to consolidate an integrative perspective, although it is still far from complete. From a theoretical standpoint, the integrative perspective fosters an analysis based on characteristics, which allows a comprehensive identification of types of innovation and organizational models of innovation (Gallouj, 2002). From an empirical point of view, however, there are still many unresolved operational issues, such as the definition of variables and how to investigate and measure them, thus highlighting the important gaps that exist in this field's advancement.

Recently, studies that propose the analysis of a service-dominant logic (Vargo & Lusch, 2006) permit an integrated perspective on economic activities based on the logic of value linked to the service and defined in the relationship with the client/user. This approach has raised the possibility of expanding the integrated approach, focusing on how innovations alter the value proposition of a particular service, through the use of a new technology, innovation in methods or in the service relation

In this paper, the aim is to develop this perspective by examining hospital services. These activities, due to their complexity and close interaction with different economic and social actors, bring to the fore many of the fundamental theoretical questions that are prominent in the debate on innovation in services, as well as providing a new perspective on hospital management. How do hospital services innovate? Who are the main actors of the innovation processes? What is the impact of such innovations on improving healthcare, quality of life and access to services? Although there are many other important issues to be considered, this brief list is quite sufficient to gauge the complexity of these kinds of services and interrelationships that can be identified by analyzing the innovation process. The aim of the research is to use the service-dominant logic as an integrative approach for analyzing innovations in hospital services and thus gather elements that can contribute to the analysis of innovation in services in general. For this purpose, innovations in hospital services that were identified in Brazil and France between 2006 and 2010 through comparative studies, are revisited considering this perspective. On the one hand, this allows a synthesis to be performed of the contribution of studies that used the same research approach and, on the other, illustrates the perspectives the service-dominant logic is bringing to innovation studies. The innovations studied involve new methods of relationship and service provision and also allowed the research to revisit the typology of service innovation based on features proposed by Gallouj (2002) and advance hypotheses regarding the systemic factors that influence the process of innovation in hospital services.

To achieve its objectives, the article is organized into five sections, besides this introduction. First of all, it presents the contributions to an integrated view of production of goods and services. This is followed by a review of the main approaches to service innovation, seeking to highlight the so-called integrative approach to innovation in services. The fourth section explores the possibilities of integrating the integrative approach to innovation in services with the service-dominant logic perspective, linking them around a vision of hospital services. The fifth section presents a selection of case studies of innovations in hospital services. This section aims to illustrate the theoretical elements presented and provide new proposals for the study of innovation in services in terms of the service-dominant logic, which are presented in the last section as a conclusion.

2 AN INTEGRATED APPROACH TO PRODUCTION OF GOODS AND SERVICES

Among the perspectives that adopt an integrated approach to production activities, encompassing goods and services, we highlight three approaches in this article. The first two were developed by French authors linked to a field of knowledge that can be defined as socioeconomics and revolve around the concept of service relations (Bressand & Nicolaïdis, 1988; Zarifian, 2001a; 2001b; 2002a; 2002b). The first analyzes productive activities as having a common goal, namely, the creation of value. The second approach associates goods and services according to similarities in the production process and forms of coordination, based on the service relationship perspective, characterized by an emphasis on incorporating the client /user into the production process. The intensity of the service relationship, in this view, becomes the common criterion for the classification and analysis of productive activities. The source of the third approach is U.S. academia and its basis is the discipline of marketing where the notion of service dominant logic originated (Vargo & Lusch, 2006). The point to be

highlighted in this section is that from different perspectives and using different levels of analysis, these approaches converge towards a view of productive activities, and thus innovation, guided by a service dominant logic.

2.1 Service as a value parameter of productive activities

The first approach's main objective is to demonstrate that service is the appropriate value parameter for contemporary productive activities. Here we find the thesis that service (in the singular) can be understood as a value evaluation logic that characterizes the current stage of development of capitalist economies, a function that labor value and utility value fulfilled in the past. This logic thus permeates all economic activities, whether agriculture, industry or services (plural). This proposal leads to the conclusion that there is no reason to restrict ourselves to the study of a particular sector, as the focus should be on how the service concept permeates and directs economic activity in all sectors. The concept of service as a value parameter thus orients a new dynamic organization of productive activity, characterized by the consideration and incorporation of the customer / user of goods or services in the constitution of the offering, or in the definition of the value that will be produced. The expression of this value, whether material or immaterial, does not interfere in the "invasive" dynamics of the service logic in all productive spheres. Thus, under the concept of service, as a reference value for productive activities, we can seamlessly analyze all economic activities and their organizational forms. In this perspective, we can find some elements of Bressand and Nicolaïdis's (1988) propositions and especially the contributions of Philippe Zarifian (2001a, 2001b, 2002a; 2002b).

Bressand and Nicolaïdis define relational economy as the phenomenon that puts the service logic at the forefront of the production system. The purpose is not to discuss services as a specific sector, but rather the dynamics of the system as a whole, placing services in the "place of honor". The concepts of product, market transaction and company need to be revised. Thus, they claim, "the traditional concept of product was conceived as the stable and predictable result of a production process developed within the clearly established boundaries of an enterprise" (Bressand & Nicolaïdis, 1988, p.141). The introduction of the service logic, with its focus on relational aspects, makes transactions much more complex. The exchange relation can no longer define all interactions required so that customers' needs can be incorporated into the design of goods or services produced.

The integration of customers, in turn, eliminates most of the boundaries that isolate organizations and require that they be reconsidered. But it is mainly in relation to the product concept that the integrated analysis of goods and services is most disturbing. There are not necessarily different moments between production and exchange. In addition, the characteristics of the actors involved in the exchange relation can even change the content of the product. Instead of products companies offer complex goods, or "compacks", value packs delivered to the customer, which could be composed of goods, services or, more often, a combination of both, but primarily intended to provide a service for customers.

The ability to adapt to customer needs becomes the foundation of value creation and therefore the main concern for organizations. The service relationship established between user and producer becomes the center of analysis and crosses sector boundaries. The hypothesis that value stems from this relationship - the construction of relational value – therefore constitutes a basis for the analysis of both industry and the provision of services.

There is a correlative viewpoint in the recent contributions by Zarifian (2001a, 2001b, 2002a; 2002b). His analysis is developed on two levels, which he seeks to articulate :in general, the process of value creation in the production system is associated with a service logic, while, in organizational terms, the model of "industrial service production " - articulating an organization's distinct universes - is the natural response to this new process of value creation.

Zarifian considers the production of service as the process through which the conditions of existence of an individual or group of individuals are transformed. The service must therefore change the conditions of use or the living conditions of an individual receiving the service. Industry, the author holds, also acts in this transformation of conditions, but indirectly, through the goods that provide services. Industrial service production should be understood as "production that incorporates in its technologies, its social organization, in its efficiency objectives, principles that are similar to those developed in large industry and applies them, modifying them, in the production of service" (Zarifian, 2001a, p.69). In other words, whether through assets or services, this production aims at providing a service, deemed to be a positive change in the conditions of a user's activity, where the positive character - a value judgment – is attributed based on the user's own judgment. The value-related service is thus related to the effects of productive activity. Therefore, a service is produced when its effects generate positive changes in user activity.

This convergence of the production of goods and services production, aimed at producing positive effects, is not entirely a smooth one. Within organizations, industrial service production is caught between two contradictory logics: the logic of service

and industrial logic. The service logic entails an expansion of the production process, as the results do not end with the sale of the service, i.e. the act of exchange. The sale is the starting point, argues Zarifian, of a more lasting relation, the service relation that guides the evaluations of the "product" delivered to the customer. The industrial logic, on the other hand, entails the use of methods and evaluation techniques that are typical of industry, although these methods and techniques have evolved significantly in relation to the Fordist organizational model. Some companies are perhaps linking the service logic to the industrial logic primarily as a strategic differentiator.

The solution to this integration problem therefore lies in adopting the concept of service as a parameter for action in all organizational spheres. We return to the notion of service as a value. The author states that, "in the context of logic of service, quality is defined in terms of how the product makes a qualitative improvement in the customer's production or living conditions" (Zarifian, 2002b, p.78). That is, in the case of both a good or service, and here we can resort to the notion of compack, also to express the possible combinations between them, quality will be evaluated according to the effects on the customer's conditions of use. There are therefore a number of elements to consider in assessing quality based on a service logic that cannot be limited to an evaluation of compliance with the prescribed product. The assessment of quality is therefore one of the central points of the possibilities of convergence.

For Bressand and Nicolaïdis (1988), this integration can be perceived when dealing with goods and services as elements to be combined into packages of value delivered to customers, or compacks. These authors hold that services take center stage due to their relational nature. This, however, does not make them a priority in preparing compacks. This will depend on the most appropriate way of attaining the value defined in the relationship with customers/users. Zarifian goes further. He affirms that all productive activity aims at providing a service. However, the service will only be deemed to have been provided if there is a change in the service recipient's conditions of use, or, in other words, if the service-value is attained. As in the case of the production of compacks, Zarifian holds that consideration of the customer's conditions of use is the basis of the service logic and is at the core of judgments of the value of productive activities.

2.2 The service relationship approach

Another approach that shares and supports the hypothesis of an integrated analysis of industrial and service activities is organized around the concept of service relationships. From this perspective, economic activities can be analyzed across the board, as a continuum, which can be differentiated on the basis of the greater or lesser intensity of the service relationship. As defined by Jacques de Bandt e Jean Gadrey, such an approach arises from the fact that it is no longer appropriate to establish an opposition between manufacturing and service sectors of activity as defined in relation to the tangibility and the standardization of their results, but to establish differences between the "... types of activities and logics of operation, according to the importance of the relation of co-production between producer and customer" (De Bandt & Gadrey, 1994, p.14).

One thus abolishes the dichotomy between goods and services, since service relationships can be found, to a greater or lesser extent, in all economic activities. Differences between sectors, seem through the prism of an opposition between goods and services, lose their analytical validity when we find, based on the service relation criterion, that activities of apparently different sectors may have more in common than activities in the same sector. Thus, service activities with little interaction with the customer/user, such as bank branches or automated services for water supply, are closer to Fordist-type industrial activities with their competitiveness rooted in exploiting economies of scale, than other relationship-intensive services such as consultancies, in which the "made-to-measure" solution is the main element of added value and where the user thus plays a key role. These, in turn, would be closer to "custom-made" production models that seek to meet specific customer needs- the solution of a problem - in the context of user / producer relations, than, for example, urban cleaning services which offer a standardized procedure, with little flexibility for relational adjustment. Citing the above authors once again,

> … according to the service relation perspective, it is possible to "see" the industry/services duality in another way, without crossing the border between these two worlds, but drawing it according to the intensity of the relations and interactions between the actors of supply and demand (De Bandt & Gadrey, 1994, p.17).

The service relation involves the direct interactions that take place throughout the production process, in which the participation of the customer constitutes an essential element, thus equating the service relationship with the concept of co-production. It is in this vein, for example, that Prahalad and Ramaswamy (2004) highlight the role of consumers as strategic in value creation. In these authors' words,

> The emerging reality is forcing us to reconsider the traditional system of value creation-centered company that has served us so well over the last hundred years. We now need a new framework for value

> creation. The answer, we believe, part of a different premise centered on co-creation of value. It begins with the changing role of the consumer in the industrial system (Prahalad & Ramaswamy, 2004, p.16).

The service relation also concerns the social aspects involved in this interaction, as well as the mechanisms that regulate it and enable it to be attained (Gadrey, 1994). In the service relationship, the intensity of interaction points to a convergence between use-value and exchange-value. Whether the result of the production process is a product or service, its value is associated with the specific use for which it was intended, and the contours of this use are defined in the context of the service relationship. Unlike the exchange relation, in which the use-values of a good (a product) can be ignored in favor of the equivalences expressed in its exchange values (Marx, 1989), these two meanings of value are intertwined in the production process. Moreover, contrary to the generality that the exchange relation confers on the use-values produced, the service relation encompasses a production process whose value is directly associated with the use of a specific good or service.

The concept of service relationship therefore enables us to characterize the incorporation of the customer / user in the design and production of a good or service, or even a combination of both, as illustrated in the concept of "compack", designed to meet their needs. The concrete conditions of use of the good or service assume a dominant position, because if they are not examined the value of the result of the production process can be compromised. It is not, however, a question of evaluating the similarity between goods and services according to their results (a value pack), let alone restricting this evaluation to a new conception of value (the service-value), but to analyze it according to the degree in which the service relationship influences the organization of the production process. The result of the latter, as we can assume the variability of conditions of use, involves assessments that require diverse criteria. However, the significance of the service relationship is not complete without taking another connotation into account. Its centrality in the analysis of the evolution of production processes in manufacturing or services also stems from the recognition of its implications in changing social relations of production. This attempt to analyze the socioeconomic impacts of the service relationship in the production process leads us to question notions of organizational boundaries, uncertainty and the irreversibility of the production process.

2.3 The service-dominant logic

Vargo and Lusch (2004; 2006) state that service is the main focus of analysis of exchange relations in economics. In their words,

> "...it rests on the premise that, in order to improve their individual and collective well-being, humans exchange the service – the application of specialized skills and knowledge – that they can provide to others for the service that they need from others. If goods are involved in the exchange, they are seen as mechanisms for service provision" (Vargo & Lusch, 2006, p. 43).

The authors differentiate between *operand resources* and *operant resources*. Service consists of *operant resources*, which in order to produce results may use goods - *operand resources* - as mechanisms for production of services.

In this perspective, the service is a result of applied skills and knowledge and whose vehicle can be goods - tangible product – or an intangible product. Therefore, the service - in the singular - can be offered through goods or services (plural). The combination of both, in a value proposition to be offered, may vary freely between tangibility and intangibility, depending on the objectives of the offer.

In contrast with the logic of goods where the service can be added as part of the value package represented by the product, the service, under the service-dominant logic, becomes the center of the exchange relation, with goods maybe constituting elements that comprise the proposed value (or service) supplied.

The value of this proposal will only be validated by the customer when using the service. The dichotomy between use value and exchange value gives way here to the co-creation of value with the customer. It is in the relationship with the customer that value is realized. The co-creation and service relationship cease to be addressed as a strategic option for organizations and become intrinsic elements of exchange. In their words, the service-dominant logic: "makes the consumer endogenous to the value-creation process" (Vargo & Lusch, 2006, p.44).

According to these authors, the centrality of service is not the result of a movement of economic activity from manufacturing to services, or the result of a historical process favoring one particular sector over another. Furthermore, the newfound status of service as the basic unit of exchange is due to the increasing specialization of labor that drives economic actors to search for services that meet their needs through exchange.

Compared to other approaches reviewed, the service-dominant logic has greater analytical breadth. In contrast to the idea of service as a unit of value, the notion of service emerges as a central element of exchange and value as a result of co-creation between

producer and customer. Such elements become inherent to the customer- oriented approach and underline the importance of the relational aspect. However, this does not eliminate the distinction between the service dominant logic and the service relation approach. Whereas in the latter the intensity of the service relationship allows a cross-sectional analysis of different economic activities, from those where service relationships are practically non-existent to those based almost exclusively on the relational component, in the service-dominant logic the relationship is the *sine qua non* of all economic activity, given that the value proposition is accomplished, or not, in the process of co-creation with the customer. As Vargo and Lusch state,

> We suggest that service is more fundamental than relationship. Given specialization, mutual service provision is required (desired); relationship, particularly in the normative sense in which it is most often used, is the means. That is, service is exchanged for service through relationship (Vargo & Lusch, 2006, p.48).

Thus the service dominant logic has fundamentals that have permitted a paradigm shift not only in marketing studies, providing compelling elements for the advancement of innovation studies. By considering service as a unit of exchange and shedding light on the offer as a value proposition, service dominant logic allows innovation to be considered in any element of this proposal, whether tangible or intangible, technological or not.

Regarding the theory of innovation in services, this contribution permits a fertile dialogue with efforts to build an integrative approach to innovation in which goods and services are analyzed together based on their characteristics or the "services" they generate (Gallouj, 2002). Our point is that such an approach overcomes a number of pitfalls reserved for those who seek to analyze innovation in services such as hospital services in which goods and services are combined in multiple ways to make a diverse and often controversial value proposition. This is what we attempt to show in the following sections.

3 THEORETICAL APPROACHES TO INNOVATION IN SERVICES

Analyzing the determinants of innovation, Gallouj (1994) argues that we can consider three theoretical approaches to innovation in services: technologist, service-based and integrative.

The origins of the technologist approach lie in the theoretical work of Richard Barras (1986, 1990) who developed the "reverse product cycle" model. The author argues that innovation in services follow a different cycle than what could be expected in the introduction of technological innovations., Initially, instead of causing a radical impact and extraordinary profits in the Schumpeterian sense (Schumpeter, 1934), the introduction of a new technology leads to small increments in the efficiency of existing services. In the second stage of the cycle, innovations are still incremental but already enable improvements to be made in service quality. In the final stage of the cycle, the new technology introduced allows both the development of entirely new services and the recombination of existing activities, resulting in a reconfiguration of services. Whether new or improved the innovative services result from the adoption of new technologies.

This model maintains industry as the prime determinant of innovation processes and thus restricts the analysis of innovations in services to the impacts of new technologies, especially new information and communication technologies (NTIC). This perspective is also found in so-called taxonomic studies, such as Pavitt's (1984), which circumscribe the trajectories of innovation in services to the dependence on industrial suppliers (Gallouj, 1998). The service-based approach seeks to identify the sources of innovations in the singularities of the production process in services (Gallouj, 1994). The central idea of this approach is that the user-producer relationship, or service relationship, as defined by Gadrey (1994, 2001), offers opportunities for innovation that outweigh the impact of any technology that may be adopted (Hauknes, 1998).

The identification of a special type of innovation may be considered the main contribution of this approach. As highlighted by Hauknes (1998), the intensity of the user/producer relationship in services allows us to consider the user (or customer) as an important source of information and learning, generating new competencies in the firm. He says that innovation in services should be seen as "a process of generalization of skills obtained in specific relationships with the client" (Hauknes, 1998, p.30). In the same vein, Sundbo and Gallouj (2000) argue that the service innovation process is essentially an interactive process. A new kind of innovation emerges in this process, called ad hoc, which is the result of a process of solving user problems through co-production. The authors define ad hoc innovation as "the interactive (social) construction of a solution (strategic, organizational, social, legal, etc.) to a particular problem posed by the client." This type of innovation can be reproduced only indirectly, as the knowledge developed undergoes a codification process, experience is formalized and skills are accumulated by the service provider, all of which will, in turn, be mobilized to solve other customers' problems. In this type of service, ad hoc innovations are produced by the service provider jointly with the

user, aimed at solving a specific problem. However, innovation is partially replicable, since the method used to provide the new solution remains under the control of the service provider (Sundbo & Gallouj, 2000; Gallouj, 2002a).

The integrative approach to innovation in services proposes the joining of goods and services into a single theory of innovation. In this direction, the most outstanding contribution has been given by the Lancasterian perspective on the characteristics of goods and services, revisited by Gallouj (2002), in which each product can be construed as a system combining the technologies deployed (tangible or intangible) and skills necessary for their production (producer skills) and their use (customer skills). Thus "if the representation of the product (good or service) described above is accepted, innovation can be defined as any change affecting one or more terms of one or more vectors of characteristics (of any kind - technical, service or competence) "(Gallouj & Weinstein, 1997, p.547).

Based on this interpretation, Gallouj and Weinstein (1997) and Gallouj (2002) propose a series of models of innovation, differentiated according to their intervention in the characteristics or competencies mentioned, which may be summarized as follows:

- **Radical innovation:** involves creating entirely new products with characteristics that are completely different from those of previous products, and which require totally different producer and customer skills.
- **Improvement innovation:** results from a change in some characteristic of the product, supposedly for the better, without changing the whole system.
- **Incremental innovation by substitution or addition of characteristics**: results from the substitution or addition of a certain technical characteristic or competence required for the production or use of the product.
- **Ad hoc innovation:** it can be defined as "the interactive construction (social) of a solution to a particular problem presented by a particular customer" (Gallouj & Weinstein, 1997, p.549). Key elements of this definition are the coproduction of innovations, namely the importance of the interface between service provider and user, and the possibility of reproducing only partial solutions.
- **Innovation by recombination:** is related to the creation of new products from different combinations of characteristics or new uses for existing products such as so-called architectural innovations (Henderson & Clark, 1990)
- **Innovation by formalization:** this type of innovation is related to the visibility of the forms described above. Thus, it refers to the process of naming a particular service and organizing its sequence, when this sequence involves physical or service characteristics as skills

Based on this new typology of innovation, the integrative approach seeks to encompass all situations that permeate the innovation process, whether in the production of goods or services. Its scope enables this approach to perform analyses that integrate the service and manufacturing sectors, increasing the analytical power of studies of these sectors.

The main drawback of this approach lies in the lack of a clear identification of determinants of innovation. Which elements induce the development of new characteristics? What are the reasons for recombining existing characteristics for the development of a new service? Is it technological advances – tangible or intangible – that define these trajectories of innovation? Or rather customer/market requirements? We believe that the need for a constant qualification and requalification of services in Callon, Méadel, and Rabeharisoa's (2002) terms, is the key to this quest for determinants. By articulating this fact with the notion of service-dominant logic (Vargo & Lusch, 2006) we can say that the determinants of innovation lie in the need to formulate effective value propositions. This can be perceived when analyzing hospital services using an integrative approach.

3.1 An integrative approach to the analysis of hospital innovations under a service-dominant logic

Faridah Djellal, Camal Gallouj, Faïz Gallouj and Karim Gallouj (2004) and Djellal and Gallouj (2007) highlight four recurring approaches to the analysis of hospital services. The first associates the hospital with the idea of a production function, in which the hospital organization is the locus of the optimal combination of production factors in the generation of health care. A second approach sees hospitals as a set of bio-pharmacological and technological capabilities, a true technological platform; while a third associates the hospital with the notion of an information system which, in turn, can be subdivided into two groups: managerial information and medical information. Finally, the fourth approach envisages the hospital as a provider of complex service and center of the healthcare system.

In this article, the analysis of hospital services is based on the socio-technical definition of services (Gadrey, 2001; Gallouj, 2002; Djellal & Gallouj, 2007), which encompasses different conceptions of health services, preserving their heterogeneity and complexity. A hospital may be associated, in many instances, with a technical competence that is being offered to potential users. Buildings, beds and

equipment are examples of how the hospital relies on an infrastructure without which the service cannot be delivered. Many of the services provided in a hospital cannot function without adequate facilities, pipelines, power grids, generators, layout, kitchen and laundry equipment, among others, that comprise a set of "technical capabilities" available to customers/users. Even in a hypothetical situation where there is no client/user to which the service will be provided, the hospital must keep everything in working order to be able to function. In other words, in the service relationship developed around the provision of hospital services, capital goods play an important role, both in their ongoing viability and under the terms of this relation (Delaunay, 1999). However, many of the services developed inside a hospital are only activated when requested, i.e. when a "demand for action" is required. A set of human capabilities thus needs to be mobilized for this purpose. The competence of health professionals, good relationships and empathy on the part of hospital staff or someone willing to give information about the state of health of a family member, are examples of human capabilities involved in the "package" of services expected.

Djellal et al (2004) suggest conceiving the hospital as the location of the delivery of a complex service, and also as the nodal point of a network of relationships that characterizes the service relationship. It is complex because it involves many different logics and contexts in which service relations are established in the composition of hospital activity. The hospital can be characterized as a nodal point because it contains various actors: the medical equipment industry, pharmaceuticals industry, public health policies, healthcare professionals, new technologies, scientific advances, health insurance, and management techniques. In sum, the hospital maintains relationships, upstream and downstream, with the entire health system. In the author's own words,

> Providing hospital services is a complex activity which we can analyze articulating and matching four variables: the elementary service provision (Si) it comprises; the supports or targets of service provision; the characteristics of the service or utilities obtained or sought ; providers' skills (Djellal et al, 2004, p.62).

In this conception we turn to the notion of hospital service construed as a "compack", in the sense proposed by Bressand and Nicolaïds (1988), as a "package" of elementary services, in such a way that the service offered by the hospital is the result of the combination of these elementary services identified within the hospital organization. The hospital service can be interpreted, therefore, as a value proposition offered a result of the articulation of these complex elements, according to the conception of the hospital based on a service-dominant logic.

Hospital innovations can be analyzed using this integrative approach, because the value proposition of a hospital encompasses technical and relational aspects, with soft and hard sides of innovation, as defined by Sebastiani and Paiola (2010), converging to produce a desired offering.

Each of the elementary services that make up hospital service has its own expected quality standards to which it must conform, but the final services provided by the hospital will be demanded, and evaluated in terms of their interaction. In other words, they will be evaluated according to the service-dominant logic (Lusch & Vargo, 2006)

Djellal et al (2004) argue that expanding the scope of analysis beyond the technical aspects of hospital innovation is absolutely necessary, especially if we are to assess the evolution of the hospital product in all its potentiality.

Innovation in hospital services, using this integrative approach, will involve changes in the final characteristics of the service offered, which may be the result of:

- Changes (redefinition, inclusion or deletion) of elementary services;
- Changes in skills (direct or indirect) deployed by service providers;
- Changes in service operations, which may result from two situations: a) the introduction of new technology or new procedures that change the relational service delivery, b) the better use (greater efficiency) of existing operations in service delivery.

The shapes of the innovations in turn, correspond to the types of innovation proposed by Gallouj (2002) and make it possible to associate the integrative approach to innovation in services with the service- dominant logic perspective (Lusch & Vargo, 2006). In all cases, innovation corresponds to a change in the service product, i.e. the characteristics that make up the final service offered by the organization and which constitute its value proposition.

3.2 Cases of innovation in hospital services

The analysis of innovation in hospital services is characterized by a strong medical and technological bias (DJELLAL et al, 2004). Not without reason. This trend is linked to the fundamental importance of healthcare and its remarkable evolution, while technological advances achieved in recent decades have been extraordinary and though improving care have also led to rising costs curves that are at the center of worldwide debates regarding major reforms in health systems (Porter & Teisberg, 2006;

Christensen, Grossman & Hwang, 2009; Herzlinger, 2011; Bohmer, 2012). Studies in Brazil, like the one performed by Bohrer and Vargas (2009) who analyzed Brazilian university hospitals, also show that innovations are concentrated in medical and administrative services. The point here is that medical and technological innovations do not cover all innovations in hospital, which also include innovations based on changes in relationships with users or the introduction of new methods and protocols. Under the service dominant logic, we can say that this bias does not enable one to encompass the complexity of a hospital's value proposition and therefore its innovative potential. In many cases, the analysis of hospitals is permeated by a "good-dominant logic " (Vargo & Lusch, 2006), in which the hospital is likened to a manufacturing organization and its value proposition is reduced to the "production" of admissions, bed occupation times, hospitality and diagnostic procedures. This logic is not only present in academia but indeed forms the basis for, the structuring of health system financing mechanisms. In this perspective service takes a second place.

Over a period of five years, research conducted by some of the authors of this article sought, through studies comparing cases in Brazil and France, to reveal the dynamics of innovation in hospitals in different ways: identification of innovation logics, studying the role of R&D as a determinant of innovations and the impacts of the adoption of technological innovations, especially the electronic medical record (Vargas, 2006; Bohrer, 2010). These studies' theoretical framework for the analysis of innovations drew on Gallouj's (2002) contribution, known as the characteristic-based approach, which allows the integrated analysis of innovation in goods and services based on the "services" that are provided. In this approach, a service - in this case the hospital - is decomposed into different elementary services that are offered by a combination of goods and services, technologies and relationships, which are reduced to the same unit of analysis, or characteristics, according to the terms proposed by Lancaster (1966). Some of the surveyed cases are examined here for the first time from the perspective of the service-dominant logic. In addition to identifying the characteristics of each service delivery, the goal is to identify the elements of the value proposition. The potential articulation of these perspectives is explored in order to contribute to the advancement of the integrative approach to service innovation.

Changes in the value proposition, rather than the introduction of specific technologies, are the basis of the innovations identified by Bohrer (2010) in university hospitals in Paris. Cases such as the creation of the **perinatal center** at the Armand Trousseau Hospital and the **chest pain unit** at the Georges-Pompidou European Hospital demonstrate an important aspect of service dominant logic. The high degree of specialization leads to the need for integration of services so that the value of the proposed service can actually be exploited.

In the case of the **chest pain unit**, the increasing specialization of medical knowledge in this area gave rise to the need to integrate them into a single service able to perform comprehensive, accurate and timely diagnoses. "Chest pain" is the vehicle of integration of these specialties and embodies the potential value of the proposed new service. Gallouj (2002) affirms that in this case a set of previously dispersed characteristics are joined together in a new service, an innovation resulting from the recombination of these characteristics. What does this recombination produce in terms of innovation? According to Vargo and Lusch (2006), a new value proposition resulting from the aggregation of previously dispersed expertise, which users would have difficulty recognizing. .

The **perinatal center** illustrates a similar initiative involving, in this case, different public and private organizations. The transfer of a gynecology and obstetrics service to a pediatric hospital located next to a private obstetrics clinic which was having problems meeting regulatory requirements, was the key for the integration of specialties in the new center. The new service combines public hospital and private hospital services, providing an unprecedented value proposition capable of attracting both end users and the interest of public funders of the French hospital system. New equipment was introduced, new protocols adopted and new relationship models developed. No specific technology or defined protocol can, alone, synthesize the meaning of innovation, the new value proposition made possible by the center.

In both cases, the dominant service logic renders the concern with the technological or non-technological character of innovation obsolete. The different characteristics, using Gallouj's (2002) terms, combine into a new value proposition that is unique precisely because of the arrangement developed. As proposed by Vargo and Lusch (2006), the value proposition is realized only when validated by customers.

The service-dominant logic seems to be an important way to identify the determinants and logics of innovation in hospital services.

Due to the reduction in the number of births and cesarean sections that were being performed, the *Divina Providência* Hospital, located in Porto Alegre (Brazil), whose market positioning is traditionally linked to maternity, set up a Neonatal Intensive Care Center. This new service involved the adoption of technological innovations, with the purchase of new equipment and the construction of rooms in accordance with technical requirements. Applying the characteristics-based approach (Gallouj, 2002),

Vargas (2006) was identified that innovation was characterized by the introduction of new skills, new tangible and intangible technologies and therefore a new relationship model linking the hospital with doctors and patients. Changes thus take place in the whole system of features characterizing the service and identifying an innovation for the organization.

But what motivated the innovation? Technological advances such as new surgical equipment? A requirement of some body that regulates obstetrics practice? No, the motivation for this initiative was linked to the identification of obstetricians who, due to the lack of a neonatal intensive care unit, started to advise their patients not to have their deliveries in the hospital. Obstetricians are the main intermediaries between hospitals and users in the choice of hospital, given that the same health insurance offers similar hospital admission options to their clients and it is the doctor's opinion that more often defines the choice of hospital. Articulating the characteristics-based approach with the service-dominant logic, one can observe that obstetricians opt for hospitals where they are able to co-create value in the service, offering safe and quality care. The technological innovations adopted were, in the terms proposed by Vargo and Lusch (2006), means for the development of an innovative value proposition for the hospital, which enabled it to recover its previously recognized market positioning.

Bohrer (2010) identified, In Parisian university hospitals, that a new value proposition may stem from the integration of dispersed medical and technological expertise, thus resulting in an innovative service. The identification of the need for integration can be considered an inducer of innovation based on the entrepreneurial behavior of actors who perceive the users' need and the dispersion of specialized providers. A similar situation led the *Santa Casa de Porto Alegre* (a Brazilian hospital) to realize the strategic importance of having a hospital devoted entirely to cancer treatment.

The construction and setting up of the hospital gave rise to the need to mobilize the most advanced treatment techniques available. This required the purchase of state-of-the-art technology equipment, the latest information systems and a specialized approach towards patients, involving not only medical aspects, but psychosocial factors that affect people with the disease. Thus a totally new organization emerged, based on hard and soft innovations (Sebastiani & Paiola, 2010), in which the integration of specialists constitutes the hallmark of a new value proposition.

The evolution of the value propositions of hospital services has led, paradoxical as it may seem, to the construction of alternatives to hospitalization. This is the case of initiatives taken by the *Centre Hospitalier de Boulougne-sur-Mer*, which have had a nationwide impact leading to changes in French hospital legislation and its funding model. The most famous one is REDIAB, a network dedicated to the prevention and treatment of type 2 diabetes which is not genetic but caused by an inappropriate lifestyle. The REDIAB involves all health professionals in Boulogne-sur-Mer l, through an information system in which these professionals, whenever they identify a case of type 2 diabetes register patients on the network after obtaining their consent. This provides multidisciplinary care for patients mobilized by REDIAB, regardless of the institutional affiliation of health professionals, under coordination of the hospital. This involves endocrinologists, nurses, psychologists, nutritionists, and physical education teachers. The results collected so far also indicate that patients treated within the REDIAB record better results than those treated solely in the hospital. A new value proposition based on continuous and integrated care made the hospital come out from behind its walls and the results have shown that users are co-creating value and thus validating this proposal within the network.

If the REDIAB has established a new concept of hospital service capable of integrating different health professionals, the *Centre Hospitalier de Roubaix* has gone further in focusing on its users - Roubaix is one of the cities with the worst social indicators in France – forging a partnership with independent doctors, city hall and community associations to create a **network to combat allergies** and another one **to combat child abuse**.

Roubaix Hospital found that most cases of allergy were related to users' inadequate housing conditions. The network visits areas where allergy problems are most frequent and municipal social workers conduct a survey of living conditions. Doctors and nurses at the hospital who specialize in this type of treatment take part in the visits and evaluations. In conjunction with civil defense units, the network develops projects and seeks to raise funds to address the source of the problem.

The actions of the network to combat child abuse are based on the same principles. Alarmed by the number of children who arrived at the hospital as victims of violence, the board of Roubaix hospital initiated a project that sought, internally, to monitor these children effectively, focusing mainly on their families. Coordinated by the nurse responsible for the hospital's pediatric unit, the project evolved into a network that connects public safety agencies, community associations, other healthcare facilities in the region and liberal doctors. The network provides therapeutic care for affected children and engages in actions to mitigate the effects of socioeconomic factors that may encourage violent behavior.

These initiatives of Boulonge-sur-Mer and Roubaix hospitals combine the introduction of new

therapeutic equipment and information systems, thus constituting technological innovations. But the most important aspect of these initiatives is that they mobilize new forms of relationships – inside and outside the hospital - with direct users and other people that make up the social network in which the hospital is located. They constitute new value propositions that enhance the performance of hospitals and undoubtedly have a positive effect on traditional healthcare activities. Furthermore, these hospitals' experience reflects another aspect of the service-dominant logic. Even though they are public hospitals their value proposition is constantly being questioned, evaluated and reclassified (Callon, Méadel & Rebarisoha, 2002), showing that the articulation between the Gallouj (2002) and Vargo and Lusch (2006) approaches can also be useful for understanding the determinants of innovation in the public sector.

4 CONCLUSION

The evolution of research on innovation in services has led to the construction of an integrative approach which, based on the analysis of characteristics, allows integration of goods and services in a single analytical framework. It has also led to the development of a new typology of innovation and the possibility of incorporating innovations that are not tied to technological devices into the analysis, thus expanding the field of research and bringing research closer to what actually occurs in the management and development of services.

However, an important gap remains. The approach based on characteristics, such as the one developed by Gallouj (2002), does not reveal the nature of the intrinsic determinants of innovation. The characteristics are created, recreated, and recombined and the analytical system proposed can identify whether innovation is produced by tangible or intangible technologies, or if it is radical or not. But what drives innovation? This question needs a more robust investigation.

In this research, we address this issue by articulating the integrative approach with the service-dominant logic perspective (Vargo & Lusch, 2004; 2006). The latter considers that economic activity revolves around the exchange of service for service. Thus, economic actors, particularly firms, prepare their offerings around a value proposition that will be validated or not in the process of co-creating value with the customer. The need for an effective value proposition, which is recognized by the customer, constitutes, in our view, the determinant of innovative activity within the firm and makes it introduce new means and new value propositions, composed of various combinations of goods and services.

The study of innovations in hospitals has been very important for the advancement of knowledge on innovation in services in general (Djellal et al, 2004; Djellal; Gallouj, 2007). We aim to continue this tradition by implementing the theoretical articulation proposed in the analysis of innovations in hospital services. To achieve this we used research conducted by some authors of this paper, between 2006 and 2010, in Brazilian and French hospitals. Our goal was not to undertake an exhaustive analysis of innovation processes, which can be found partially in other studies (Vargas, 2006; Bohrer, 2010), but to show how innovations that have been registered (but not yet analyzed) as well as the determinants of these innovations, can be reinterpreted and understood using the theoretical articulation proposed here.

The cases analyzed here corroborate the validity of our theoretical proposal, showing that different types of innovations - involving technology, information systems, relationships, new methods, new organizational forms – were motivated by the desire to build new value propositions based on a service-dominant logic.

The complexity of innovation in hospitals can thus be seen from a broader perspective. In fact, through a double-edged approach in which the service-dominant logic provides elements for understanding the determinants and objectives of the initiatives studied, whereas the integrative approach based on characteristics allows the innovation process to be scrutinized. The client – who, in the case of the hospital may be the patient, funder, or regulator - is intrinsically taken into account in the analytical model adopted, extending the range of actors usually considered in the innovation process. Especially for hospitals, this approach constitutes an important contribution to the final incorporation of the client into innovation management.

This new perspective allows the management of innovation in services to be re-examined since the tools that can deal with this range of means and motives for innovation need to be identified and developed. Among the many challenges, that remain, one should highlight the one posed by the construction of specific categories for the theoretical articulation undertaken here and illustrated in the cases analyzed. This effort goes beyond the scope of this article, but brings a new "value proposition" to the research on innovation in services. It behoves us to test and develop it in view of the growing importance of service activities - especially health services - in our society.

REFERENCES

Barras, R. (1986). Towards a theory of innovation in services. *Research Policy*, 15, 161-173.

Barras, R. (1990). Interactive innovation in financial and business services: the vanguard of the service revolution. *Research Policy*, 19, 215-237;

Bohmer, R. (2012). *Arquitetura e planejamento na gestão da saúde*. Porto Alegre: Bookman.

Bohrer, C. (2010). *P&D e inovação em serviços: estudos de casos em hospitais universitários do Brasil e da França.* Doctoral Dissertation. University of Brasília, PPGA/FACE.

Bohrer, C. & Vargas, E. R. (2009). Inovação nos serviços hospitalares: estudos de caso em hospitais universitários. In *Proc. XXXIII Enanpad*, p. 1-16, São Paulo: Anpad.

Bressand, A. & Nicolaïdis, K. (1988). Les services au cœur de l'économie relationnelle. *Revue d'Économie Industrielle*, 43, 141-163.

Callon, M.; Méadel, C. & Rabeharisoa, V. (2002). The economy of qualities. *Economy and Society*, 31(2), 194-217.

Christensen, C. ; Grossman, J. & Hwang, J. (2009). *Inovação na gestão da saúde : a receita para reduzir custos e aumentar qualidade*. Porto Alegre : Bookman.

De Bandt, J. & Gadrey, J. (dir) (1994). *Relations de service, marchés de services*. Paris: CNRS Editions.

Delaunay, J-C. (1999). Capital and other inputs in the production of services: what impact on service relationships? *International Journal of Service Industry Managment***,** 10(2), 157-170.

Djellal, F. ; Gallouj, C. ; Gallouj, F. & Gallouj, K. (2004). *L'hôpital innovateur: de l'innovation médical à l'innovation de service*. Paris: Masson.

Djellal, F. & Gallouj, F. (2007). Innovation in hospitals : a survey of the literature. *European Journal of Health Economics*, 8, 181-193.

Gadrey, J. (1994). Les relations de service dans le secteur marchand. In: *Relations de service, marchés de services*. Jacques De Bandt & Jean Gadrey (dir). pp. 23-42. Paris : CNRS Editions.

Gadrey, J. (2001). Emprego, produtividade e avaliação do desempenho dos serviços. In *Relação de Serviço: produção e avaliação*, M. S. Salerno (org). pp. 23-65. São Paulo: Editora Senac São Paulo.

Gallouj, F. (1994). *Innovation dans les services*. Paris: L'Harmattan.

Gallouj, F. (1998). Innovating in reverse: services and the reverse product cycle. *European Journal of Innovation Management*, 1 (3), p.123-138.

Gallouj, F. (2002). *Innovation in the service economy: the new wealth of nations*. Cheltenham: Edward Elgar.

Gallouj, F. & Weinstein, O. (1997). Innovation in Services. *Research Policy*, 26, 537-556.

Gallouj, F. & Savona, M. (2009). Innovation in services: a review of the debate and a research agenda. *Journal of Evolutionary Economics*, 19, 149-172.

Hauknes, J. (1998). Services in innovation – Innovation in services. *Step report*, n.13.

Henderson, R. & Clark, K. (1990). Architectural Innovation: the reconfiguration of existing product technologies and the failure of established firms. *Administrative Science Quarterly*, 35, 9-30.

Herzlinger, R. (2011). *Valor para o paciente: o remédio para o sistema de saúde*. Bookman: Porto Alegre.

Lancaster, K. (1966). A new approach to consumer theory. *Journal of Political Economy*, 74(2), 132–156.

Marx, K. (1989). *O Capital: crítica da Economia Política*. Livro 1, v.1. Rio de Janeiro: Bertrand Brasil.

Pavitt, K. (1984). Sectoral patterns of technical change: towards a taxonomy and theory. *Research Policy*, 13, 343-373.

Porter, M. & Teisberg, E. (2006). *Redefing healh care: creating value-based competition on results.* Boston: Harvard Business School Press.

Prahalad, C. K. & Ramaswamy, V (2004). *O Futuro da Competição: como desenvolver diferenciais inovadores em parcerias com clientes*. Rio de Janeiro: Elsevier.

Schumpeter, J. (1911/1985). *A teoria do desenvolvimento econômico***.** São Paulo: Nova Cultural.

Sebastiani, R. & Paiola, M. (2010). Rethinking service innovation: four pathways to evolution. *International Journal of Quality and Service Sciences*. 2 (1), 29-94.

Sundbo, J. & Gallouj, F. (2000). Innovation as a loosely coupled system in services. *International Journal of Services Technology and Management*, 1(1), 15-36.

Vargas, E. R. (2006). *A dinâmica da inovação em serviços: o caso dos serviços hospitalares no Brasil e na França*. Doctoral Dissertation. Federal University of Rio Grande do Sul, PPGA/EA.

Vargo, S. & Lusch, R. (2004). Evolving to a new dominant logic for marketing. *The Journal of Marketing*, 68 (1), 1-17.

Vargo, S. & Lusch, R. (2006). Service-dominant logic: what it is, what it is not, what it might be. In The Service-Dominant Logic of Marketing: dialog, debate, and directions, Robert F. Lusch & Stephen L. Vargo (ed.). pp. 43-53, New York: M.E. Sharpe.

Zarifian, P. (2001a). La valeur de service. In *L'émergence d'un modèle de service***.** Jean Gadrey & Philippe Zarifian (eds). pp. 92-120, Paris: Liaisons.

Zarifian, P. (2001b). Service et efficience: le rôle essentiel de la compétence. In: In *L'émergence d'un modèle de service***.** Jean GADREY &Philippe ZARIFIAN (ed). pp. 121-156, Paris: Liaisons.

Zarifian, P. (2002a). Valor, organização e competência na produção de serviço: esboço de um modelo de produção de serviço. In *Relação de Serviço: produção e avaliação*, Mario Sergio Salerno (org). pp. 95-149. São Paulo: Editora Senac São Paulo.

Zarifian, P. (2002b). Mutação dos sistemas produtivos e competências profissionais: a produção industrial de serviço. In *Relação de Serviço: produção e avaliação*, Mario Sergio Salerno (org). pp. 67-94. São Paulo: Editora Senac São Paulo.