FROM HEALTH SERVICE QUALITY TO HEALTH SYSTEM QUALITY. A NETWORK INNOVATION ADOPTION AND DIFFUSION

Chiara Cantù
Adjunct Professor
SEGESTA - Catholic University of Milan, Italy
e-mail: chiara.cantu@unicatt.it

Alessandra Tzannis
Adjunct Professor
SEGESTA - Catholic University of Milan, Italy
e-mail: alessandra.tzannis@unicatt.it

Working paper

ABSTRACT

Growing demand for health care due to the ageing of the population, rising costs, constrained resources, and evidence variations in clinical practice have increased interest in improving the attention on quality for health services. Quality in this context is mainly based on two dimensions: access and effectiveness. But, due to the challenging environment, to the objectives of the health services and to the structure of the NHS, this is no more sufficient. Attention to issues such as service innovation, attributes and conditions for its adoption and diffusion, patient's centered care via technological supports, lead to a new scenario of health care services based on the sharing of competencies of different actors belonging to a net system. Those are the elements on which the present work focuses.

In this context the main aim of this work is to investigate the link between quality in health services and adoption and diffusion of innovation thanks to a network approach.

Quality in health services is reached through the network. The network allows a particular process of services innovation adoption and diffusion that produces not only technical but also relational quality. In this way the quality of a specific innovative service generates benefits also for the health system considered as a whole.

In the conceptual framework previously described, this work goes more in depth in the features of the several actors that are involved in the generation of new services and upstream in analyzing which are the conditions for an improved quality of health services thanks to the adoption and diffusion of innovations. In particular the attention is focused on the resources provided by the different actors belonging to the network and on the characteristics of each organization involved in the creation of the innovative services.

After a literature review this work investigates the case of an Italian innovative health service provided by a rehabilitative structure, Villa Beretta, a detached ward of the Valduce Hospital.

The paper emphasizes how the development of the innovative services presented are based on the interrelationships of several actors specialized in different core activities. More and more the hospitals have to face complex needs. For this reason the hospitals need to attract several actors that provide specific resources. In this way the focus is centered on how those actors cooperate in order to grant value not only to their health performances but also to the entire system.

KEY WORDS

Health services, quality, service innovation, innovation adoption and diffusion, heterogeneous actors, networking, technology, telemedicine,

INTRODUCTION

The health and social context is more and more characterized by high complexity and instability (Jones, 1997). Within this new scenario, it is necessary to develop new models of management that can effectively capture and exploit the many opportunities arising from the change (Gulati, 2000; Venkatraman, 2002). That is why since the seventies the main exponents of the economic doctrines began to take a holistic view of reality (Normann, 2002). This holistic view acquires a greater importance even more nowadays with the corporatization process through which the principles of enterprise are introduced in the health system. In addition to redefine the structure of the industry and empower entrepreneurial companies operating in it, the network approach can support organizations in order to implement services both to protect the health rights of citizens and to increase and develop innovation. Within the new scenario, all actors of the health system interact with various levels of responsibility, in the belief that the path of cooperation is the foundation of an effective and efficient health system, able to optimize tangible and intangible resources and to ensure a value added offer based on innovation. The basic assumption is that the exchange of resources between the actors involved might generate a higher bid for patients and a significant cost saving for the system and the community. This approach is shared at all levels of the national and regional service chain and applied in the specific local context through programs and ad hoc interventions.

According to this perspective all kind of enterprises are perceived as a set of resources, relationships and actors that in order to achieve their objectives, relate to one another, creating a network of ties and exchanges (Håkansson, 1989). This network approach is developed first in the industrial markets, where the nature of the B2B sector provides a rich application of such a relational logic (Fiocca *et al*., 2007) to spread later in other business contexts including the socio-sanitary services. "A network that is reinforced thanks to a reciprocity of knowledge and a real focus on exploiting the contribution and professionalism of every single person who is part of it" (Timo Järvensivu, 2007) reaffirms the importance of an integrated and coordinated delivery of health.

The adoption and diffusion of health services based on networking attitude allows the generation of quality not only for a specific innovative health service but also for the entire health system. From this perspective the role of patient is enhanced: the patient becomes an active actor and so a key referent for the quality evaluation.

In addition to this, the quality generated through the network is higher than the quality that a single organization could reach.

According to this, the health system seen as a network provides a new concept of "health" that shifts from a traditional perspective of care to a holistic health perspective.

AN OVERVIEW OF THE CONCEPT OF QUALITY IN THE HEALTH CARE CONTEXT

During the last years, health quality issues emerged as important considerations in developing and implementing public policy. But health care quality is difficult to define. Different audiences view health care quality from different perspectives and are concerned about different issues. For example, clinicians may define quality based on medical outcomes or processes. Economists may define quality based on social welfare and may include features that consumers happen to care about, but that clinicians do not (for example the appearance and size of hospital rooms). Health plans may further differ and focus on concepts of preventive care or organizational efficiencies (Wong, Mcnamara and Greenberg, 2004)

Service quality has been perhaps the most explored topic in services marketing. Past research has linked service quality to a firm's performance (Zeithaml, Parasuraman and Berry, 1993;

Boulding *et al*., 1993), customer satisfaction (Cronin and Taylor, 1992; Oliver, 1994; Taylor and Baker, 1994) and purchase intention (Zeithaml, Parasuraman and Berry, 1993; Lee, Lee and Yoo, 2000). Patient perception of service quality is a key determinant of a health care organization's success due to its primary role in achieving patient satisfaction (Williams and Calnan, 1991) and hospital profitability (Cleverley and Harvey, 1992; Donabedian, 1996). The literature on service quality delineates two rather distinct facets of the construct: a technical dimension (the core service provided) and a functional dimension (how the service is provided) (Grönroos, 1983). This closely parallels the outcome and process dimensions of service identified by Berry, Zeithaml and Parasuraman (1985). Innovation, outcome and process dimensions of service quality are then complex constructs coming from the integration of different perspectives and different theoretical frameworks having a greater influence on patient's behavior and needs.

In order to define health care quality we cannot ignore the history and the evolution of the concept of quality then. In particular, a series of theoretical approaches can be underlined considering quality as:

- efforts to be pursued so that the organizational processes can be set in a perspective of quality, such as product and service improvements aimed at achieving a competitive advantage, leading change, creating trust and long lasting relationships, rationalizing costs, and developing a teamwork attitude (Deming, 1982; Mutter *et al*. 2011);
- the natural desire most employees have to do a good job, the "zero defects attitude" for which quality means to answer to a set of requirements that are the description of what the customer needs. The focus of the commitment to quality is more and more the individual participating to the process improvement (Crosby, 1979; Butt and Cyril de Run, 2010);
- not only as needs satisfaction, as a service for a specific need, but quality as a mean to satisfy the customer's expectations in accordance with the suitable characteristics, considering quality as "suitability" and "standards compliance" (Juran, 1995; Yasin *et al*., 2011);
- Total Quality Control that is an effective system to integrate the quality development, its maintenance and the efforts to improve the organization in order to allow marketing strategies, design, production and services the cheapest levels to grant customer satisfaction. The philosophy behind this idea is that the determination of product/service quality levels is to be determined mainly by the customer, instead of considering the design requirements, the marketing strategies or the manager's objectives (Feigenbaum, 2002; Nwabuezea, 2011);
- a process-oriented way of thinking able to develop strategies that ensure continuous improvement through the involvement of people at all levels of the organizational hierarchy. The assumptions of such a way of looking at quality relate to the constant effort to improve relations, special attention to training and education, the building of informal leadership within the workforce, the development of improvement activities in small groups, training for supervisors making them able to more easily communicate and have relationships with employees, the encouragement of social life at work and discipline (in terms of procedures to follow) in the workplace (Imai, 1986; Iannettoni *et al*., 2011).

A definition of quality, more specific to the health sector, may be: do only what is useful (effective theory), in the best way (effectiveness) with the least cost (efficiency), for who (accessibility), and only to those who really need (appropriateness), making do care who is competent to do it (competence), obtaining the best results considered (satisfaction) (Donabedian, 1990).

The result is the complex phenomenon of innovation made necessary to set up a general plan of reform to improve health services. The reforms during years introduce the concept of accreditation of healthcare organizations and the systems of assessment and improvement for activities.

The decrees of the reform allow the health sector to move from a system of financially dependent structures, organized on functional models, to a business system where the health care organization is assessed in terms of quantity and quality in the production of its services (Arnetz, 1999). Hospitals moved from a functional organization based on the labor division, to structures working for processes in which work is done by small groups with multidisciplinary expertise, but united by shared values, objectives and responsibilities. This approach leads to a continuous improving involving all quality dimensions (Badri, Attia and Ustadi, 2008) such as expected and practical effectiveness, technical competence, acceptability, efficiency, accessibility, appropriateness, timeliness and humanization.

Quality must be understood in a systemic way and these matters can be more or less relevant depending on who treats them. The hospital administrator will give priority to efficiency and cost control in the definition of service quality of service (Rosenthal *et al*., 2004). For the nurse coordinator the concept of quality favors both the technical and the relational level. The customer will see in the service quality the immediate satisfaction to his/her perceived needs (Gill and White, 2009). The organization shall ensure the adequacy of processes and performance as the professional competence alone may be unusable (Chang, Kwat and Mattila, 2005).

The quality measurement in the systemic perspective can be analyzed considering three correlated dimensions: the structure (organizational quality) that is the static part of the system, the equipment; the process (professional quality) that is the sum of the collective behaviors of personnel and customers on a scientific, ethic and social basis (diagnostic procedures, continuity of care, professional standards, comfort, privacy, etc.); and the outcome (perceived quality) that is the evolution of the patient's health due to the care process (Donabedian, 2005). All the three levels are equally important and among them a cause-effect relationship is required. As a result customers measure the service quality between the ideal quality and the acceptable one and express satisfaction about the service they receive considering the discrepancy between the expected and the received quality. So ending customer satisfaction is simply the difference, or better the gap, existing between expectancies and the service experienced (Zeithaml, Parasuraman and Berry, 1991).

It results necessary, then, to make innovative choices in defining strategies and in searching for quality elements in order to lead to situations of competitive advantage. First of all consider the patient as a playing, aware and informed "actor", "seeing the person in the patient" (Goodrich and Cornwell, 2008). The customer must have an active role in the health organizations, must also be addressed by all health professionals, and his/her needs and values must be respected.

In addition to providing quality health care services, the health care organizations may compete if they support comfort, kindness and courtesy, information capacity, "leading by the hand" the patient throughout the disease process (Kenagy, Berwick and Shore, 1999), and empowering him (Mallory, 2011).

In this perspective, "service quality" becomes a complementary concept to the "service innovation" one (that means fist of all adoption and diffusion of the innovation). Service quality is strictly related to the management of the organizational structure founded on a networking attitude. Furthermore the service quality is also strictly related to the management of the innovation adoption and diffusion process.

THE ADOPTION AND DIFFUSION OF INNOVATION THROUGH RELATIONAL EMBEDDEDNESS

Although the increasing importance of services the adoption and diffusion of service innovations has not received sufficient attention. Several studies have investigated the diffusion of an innovation in an industry or market (Rogers, 1983) but in most cases related to new products diffusion (Gatignon and Robertson, 1989).

The adoption and diffusion of innovations has been widely studied by several schools among which medical sociology (Coleman, Catzs and Mendel, 1957), sociology (Rogers, 1962), cultural anthropology (Barnett, 1953) and economics (Stoneman and Ireland, 1983). This topic has been investigated in different perspectives in a broad continuum of disciplines including social science, marketing, engineering and management (Greenhalgh *et al.*, 2005; Rogers, 2003; Everdingen and Wierenga, 2002).

Through innovation adoption, especially in industrial markets, organizations aim to achieve a competitive advantage (Chisnall, 1989). In fact the adoption of an innovation allows the increasing of efficiency and effectiveness of organizations' activities (Chisnall, 1989). As well emphasized by Rogers (1983) the more the perceived advantage of an innovation relates to the degree to which it supersedes an idea, the better this could be a predictor of the rate of adoption of the innovation (Rogers, 1983; Robinson, 1990).

There is a strictly relation between adoption and diffusion. Market-level diffusion forms a context for single adoption decisions (Valente 1995) that are made in a certain social context (Montgomery, Lipshitz and Brehmer 2005). Referring particularly to the industrial context, Swanson (1994) describes innovation diffusion as "the pattern of its adoption by an organizational population over time."

The diffusion is so considered a process of formal and informal exchange among members of a system. Furthermore, as well emphasized by Subramanian (1996), the innovation adoptions are organizational responses to external features and changes. In fact several studies has emphasized that the more the level of competition and the intensity of innovation activities is high in an industry, the more organizations in that industry will be willing to adopt an innovation (Gatignon and Robertson, 1989). The adoption could be defined as a process that ends up with taking the innovation into use with the intention of using it now and in the future (Woodside and Biemans, 2005; Klein, Conn and Sorra, 2001).

From this perspective innovation adoption is mainly influenced by relative advantage, considered as the degree to which an innovation is perceived as being better than the ideas that it supersesed, as well as by its compatibility, its consistency with past experiences. In this way, for instance, perceptions of innovation features and socioeconomic distinctiveness have been identified in determinants of technological innovation adoption (Gatignon and Robertson, 1985).

Furthermore focusing on the innovation adoption process, Frambach and Schillewaert (2002) articulate the process, in awareness, consideration, intention, adoption and continued use. This consideration is strictly related to the interpretation of innovation adoption formulated by Rogers (1962), Becker and Whisler (1967). These authors recognize 4 stages of the innovation adoption process: awareness, interest, evaluation, trial and adoption. Adoption becomes a decision to continue fullscale use of an innovation and subsequently to install the same innovation within the organization (Klein, Conn and Sorra, 2001).

Moreover organization size and organization structure are important determinants of organizational innovativeness (Kennedy, 1983) and the acceptance of new ideas and products (quality). A high degree of centralization may obstruct the opportunity for new products to be implemented in an organization (Zaltman, Duncan and Holbek, 1973). Furthermore

More and more the organizational perspective has to consider both its internal structure and its external constellation in which it operates, (Norman and Ramirez, 1993) focusing not only in social network but more and more on industrial network (Makkonen, 2010).
In the social network perspective, scholars emphasized how the innovation adoption and diffusion process could be influenced by the interaction between members of a social system (Zaltman, Duncan and Holbek, 1973). The existence of external contingencies and network externalities facilitates adoption. This means that benefits of adoption for the adopter increases as the cumulative number of adopters increases (Katz and Shapiro 1994). It's the process of adoption that strengthen the exchange and sharing of ideas and resources on a cognitive (networked organizations), affective (social support) and behavioural (teamwork) level (Ribeira-Soriano and Urbano, 2008). From this it follows that collaboration between firms is a process that has also a social base. That means organizations linked among them through interpersonal relationships in a social embeddedness perspective (Granovetter 1983; 1985). The concept of embeddedness is closely related to the sharing and belonging to a context that has both interpersonal and interorganizational relationships at its base, thus developing relational (Andersson and Forsgren, 2000; Hansen, 2004; Lechner *et al*. 2006; Ford *et al*., 2003; Johanson *et al*., 2005) and network embeddedness (Echol and Tsai, 2005; Granovetter, 1985; Håkansson and Snehota, 1989; 2006; Halinen and Tornroos, 1998; Johanson, 2007). A high degree of embeddedness is the result of a high interdependence between how, when and why two actors exchange resources and how and what kind of resources the actors combine in the interaction. Interaction is "a constant process of action and reaction involving activities, actors, and resources" (Hakansson et al., 2009: 197). Interaction is so the base of networking. In this way the network evolves across time and space (Håkansson *et al.*, 2009).
Considering that the interaction is a process over time, networking is a response to a pre-existing situation (path dependence). Path dependence sometimes occurs as a hindrance and sometimes as a driving force in technical development (Håkansson and Waluszewski, 2002).
Through cooperation, link, ties and bonds generate the dynamics of networking (Hakansson and Snehota, 1995) and its transformation. This transformation is related to resources shared and combined that generate new resources, and involved new activity and actors. These one are considered as the result of interaction (Hakansson et al., 2009). The dynamics of the network allows the spread of innovation and its diffusion. Networking "in the narrow sense, that is, developing bonds to certain other players in the network amounts to making alliances for the short or the long term (Hakansson and Snehota, 1995: 266)". The development of relationships to diffuse innovation is founded on the creation and consolidation. Creation aims to create new relationships while consolidation aims to improve existing relationships.
This consideration acquired an increasing importance in the process of innovation diffusion and adoption, also related to innovative health services.

RESEARCH APPROACH

The Italian NHS (National Health System) is based on a net model. The local health assistance (LHA) manages the healthcare on the territory through structures like districts, laboratories, semi-residential structures. The degree of complexity is determined by the dimension of the served territory, by the presence of directly managed hospitals and by the presence on the territory of autonomous hospital structures: in fact, in each Italian region, LHA hospitals are also flanked by IRCCS, private but state equalized structures (aid qualified institutes, research institutes) and accredited private clinics (Borgonovi, Camussone and

Occhini, 2004), while the emergency and live aid performances remain a peculiarity of the public health hospital service.
The Italian health system pursued during years the research of quality. This research has been well influenced by the network structure of the territorial system and on the other side by the evolution of IT. In particular, in the Italian context considered, the history of quality in health care began in 1992 with the D.L. 502 and in 1993 with D.L.517. In 1999 the subsequent decrees reiterate the need to ensure the quality of care and propose the method of review, providing for agreements between the Region and Health Companies and better define the areas of efficacy, efficiency, adequacy and performance (Coluccia, Ferretti and Cioffi, 2009).
The health system coming from the proposals of the decrees is based on a network structure requires specific IT supplies, to grant integration and coordination with the surrounding territory. More and more the integration between IT and health care generates innovative health care services such as Telemedicine services. These latter allow to grant services over time and distance using computer and telecommunication technologies to expand access, improve quality and control costs, and to facilitate information exchange between primary care physicians and specialists (Whitlock *et al*., 1999; Sood *et al*., 2007).
It is in this context characterized by different actors and roles, different competencies and different approaches that fits our research and analysis. The main aim of this work is to investigate the emerging of innovative services (adoption and diffusion of innovation) in health context based on the involvement of several actors specialized in different core competences.
In the conceptual framework previously described, this work aims to go more in depth in the features of the several actors that are involved in the generation of new services and upstream in analyzing which are the conditions for the adoption and diffusion of the service innovation. In particular the attention is focused on resources provided by different actors and on the characteristics of each organization involved in the creation of the innovative services.
The task of the analysis is to construct the context and boundaries of the phenomenon as theory interacts with empirical observation (Dubois and Araujo, 2004). The research development is based on a systematic combination of the continuous interaction between theory and the empirical world (Dubois and Gadde, 2002; Piekkari, Plakoyiannaki and Welch, 2010).
We adopted a case study approach as a suitable method for studying relationships and the process of service innovation creation. The case study approach investigates the dynamics of the phenomenon and provides a multidimensional view of the situation (Easton, 1995; Eisenhardt, 1989; Halinen and Törnroos, 2005). Adopting a case study approach, we investigated how actors and resources work in different settings and contexts (Ford *et al*., 2002; Dubois and Gadde, 2002; Halinen and Törnroos, 2005), considering operational links (Dubois and Gibbert, 2010). As especially suitable for case studies (Dubois and Gadde, 2002), we adopted an abduction process that enables data-driven theory generation (Järvensivu and Törnroos, 2010): choices related to the theoretical framework influenced the empirical investigation. The study became more theoretically and empirically focused. Furthermore, a constant interaction between theory and empirical observation characterizes the process of systematic combining involved in the case study (Dubois and Gadde, 2002) based on abductive process (Piekkari *et al*., 2010).
In particular, we analyzed as case study Villa Beretta, a detached ward of Valduce Hospital (Italy), specialized in rehabilitation services.
Data were collected through semi-structured interviews lasting from 60 to 120 minutes. Interviews were recorded and taped. These primary data were combined with secondary data gathered from the organization's website, reports, trade press and other internal documents. A holistic description generated by multiple sources of evidence (Järvensivu and Törnroos,

2010) has been required to reach the aim of the research that is to analyze in greater depth the impact generated by the evolution.

VILLA BERETTA

Valduce Hospital, located in Como, offers confinement ward and outpatient services. The hospital guarantees high-quality, medical care and rehabilitation services for individuals with physical disabilities. The hospital treats many types of physical disorders, with special programs for traumatic brain injuries, spinal cord injuries, strokes, neuromuscular diseases.
Valduce Hospital provides specialized rehabilitation services through a detached ward: Villa Beretta. Villa Beretta Rehabilitation Center's activity focuses on diagnosis and treatments of cognition and their outcomes, and in particular on:

- cognition: language disorders, attention problems, disorders of action, recovery from coma;
- motor control/mobility: understanding how movements, such as walking, are planned and carried out in healthy people and determining how to restore useful movement to people with paralysis, amputation and spasticity;
- outcomes: measuring how well people with disabilities function after completing the rehabilitation process and determining if treatments delivered are effective;
- respiratory disorders: the Centre treats patients with neuromuscular disorders and respiratory insufficiency using nasal intermittent positive pressure ventilation (NIPPV) through a nose mask to support ventilation during the day-time and/or during sleep.

The structure involves Medical Diagnostical Equipment based on:

- electrodiagnostic centre: combines the latest advances in clinical neurophysiology with computer technology to measure a patient's brain activity and to assess peripheral nerve and muscle function;
- laboratory of respiratory physiopathology: blood gas analyzer, spirometer, polisonnography;
- gait and movement analysis lab (dynamic EMG - electromyography, 3D motion analysis): this Lab helps physicians evaluate causes of walking and related movement problems. This sophisticated lab analyzes muscle function and dexterity and is especially useful for patients with central nervous system disorders or neuromuscular disease. For patients with central and peripheral nervous system damage, motor control analysis provides a specific basis for corrective physical, medical, and surgical therapies.

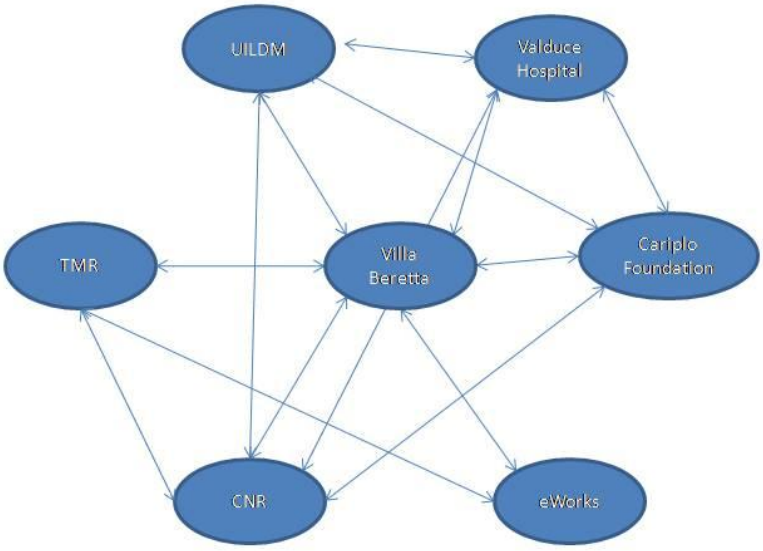
Considering the main innovative services provided by Villa Beretta, we decided to focus on two projects of Telemedicine (eCare Project and Spider Project).

eCare Project

This project is based on the use of wideband communication, and allows users to maintain a direct contact with health operators staying at home.
The users may request a planned consultation with health rehabilitative operators or request services on demand in case of need.
The patient can also be cared by different health operators independently from their place of localization, also geographically distant. A particular use of this kind of technological service is related to disabled in a chronic condition. These ones may use the consultation service to allow health operators to evaluate the performing of the treatment and planning a deepen analysis.
The service is addressed both to patients who have been treated in Villa Beretta and to patients coming from outside that means patients having difficulties in transport and mobility that request the health services provided by Villa Beretta even if they are located in different Italian regions.

In order to provide this innovative service, Villa Beretta involves both local and others health operators located in different Italian health organizations. These health operators cooperate being interested in developing a long lasting program of "second opinion".
The main value of this project is to reduce monitoring visits aimed at verifying the continuity of the treatment. Moreover the reduction of continuous transfers for patients in specialized centres increases their quality of life and also supports families in the assistance process.
The main actors involved in the project can be identified in eWorks, Rizzoli Institute, Cariplo Foundation, CNR, UILDM Como, Valduce Hospital and other organizations (figure 1).

Figure 1- Network picture (eCare project)



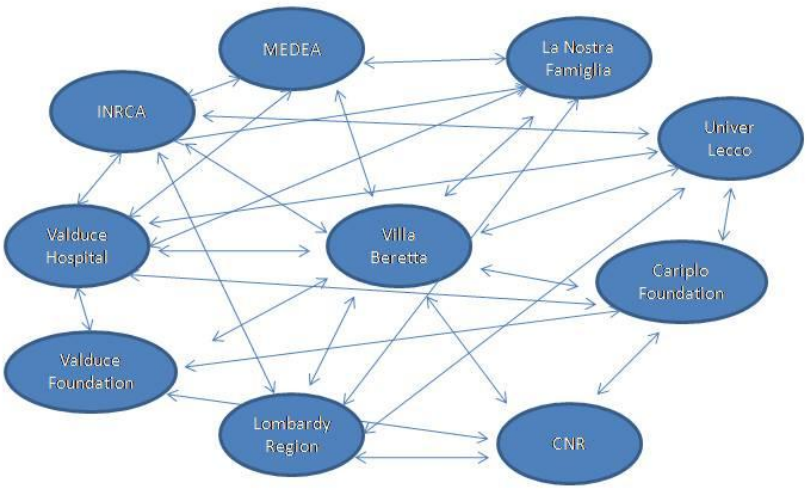
- UILDM Como (Italian Union of the Fight against Muscular Dystrophy) fosters scientific researches, health information and social integration. It supports scientific research and health information on muscolar dystrophy, and promotes the social integration of patients with special needs.
- TMR (Telemedicine Rizzoli Institute) supports the development of different applications, from Telemedicine to tele-didactics in order to ensure scientific and health knowledge of the Orthopaedic Rizzoli Institute and of other specialized centres of excellence.
- Cariplo Foundation supports the fulfilment of public interests in different sectors, from art to culture, from education to scientific research. Foundation serves the common wellbeing also providing financial contributions.
- National Research Centre is a public institution that supports the diffusion and sharing of knowledge in scientific, economic and social development. Its duty is to carry out, promote, spread, transfer and improve research activities.

- eWorks' activity is focused on internet real time video communication software development. The firm develops worldwide videocommunication using a technological platform.

Spider Project

The main aim of "SPIDER@Lecco" is to develop a sustainable ecosystem for rehabilitation founded on cooperation among centres of excellence located in Lecco territory. These centres can develop in this way relationships with local organizations combining their competences to provide high level services. The integration of competences and the development of innovative health services is based on the sharing of high technologies for rehabilitation.
The guidelines of the project pertain to the valorisation and the upgrading of existing infrastructures, and the adoption and diffusion of high technology in health services. The process of adoption and diffusion of innovation is based on a knowledge management and project management approach.
The development of the "SPIDER@Lecco" project involves different organizations such as Cariplo Foundation, Lombardy Region, the Association La Nostra Famiglia, Valduce Foundation, CNR, Casatenovo INRCA and Bosisio Parini IRCCS E. Medea. The project is co-ordinated by the Univer Lecco.
The project is about 36 months and its core innovation is identifiable in an interdisciplinary approach based on the cooperation among organizations having different competences.
Each actor contributes to the project providing different resources (figure 2).

Figure 2 - Network picture (Spider project)



- Medea, for example, promotes biomedical and health research in close association with clinical practice to test new rehabilitation techniques and improve existing ones. Medea

evaluates and follows-up the results of the rehabilitation developing subsequently the operational protocols.

- Medea belongs to the Association La Nostra Famiglia, a good testing ground for quantitatively and qualitatively sound the research, especially in rehabilitation. According to La Nostra Famiglia's vision, the care of patient presupposes the integration of the traditional clinical approach with psychoeducational and social interventions in order to achieve the best possible functional recovery for the patient.
- Casatenovo INRCA is a research institute specialized in geriatrics and gerontology. INRCA contributes to the project promoting the link between the scientific research interaction and the entrepreneurial activities, using the net configuration as reference model of its organizational system. Through this system INRCA can operate both at a local and at a national level.
- Also in this project Cariplo Foundation provide financial services and CNR supports the diffusion of knowledge.
- A financial support is also guaranteed by Lombardy Region.
- Valduce Foundation supports the research from an economical point of view and also grants the researches, monitoring the activities and publishing the results.
- UniverLecco is an association made up by public and private organizations which aim is to promote the socio-economic growth in Lecco territory, collecting research and entrepreneurial resources.

DISCUSSION

As it emerges in the projects presented we can stress the following points:

- The development of the projects is strictly related to the interconnections among several organizations providing the care process. These ones operate in different geographical areas and/or are specialized in different core competences.
- The results of the projects are based on relationships that begun in previous projects. The service innovation adoption and diffusion is the result of temporal interconnections (path dependence). Organizations that previously participated and tested telemedicine projects can contribute to the development of new projects supporting the replicability of the process increasing the service value and the accessibility to the innovation.
- The share objective identified by the organizations is to increase the quality of the healthcare assistance. The organizations aware that technical quality could not be sufficient to provide adequate health services, concentrated their attention on functional/process quality. Focusing on technical quality, we can observe that health care improves the performance of health operators thanks to the possibility to register and review the virtual examination improving in this way the follow up. The attention should be focused not only on the patient but also on the family/caregivers. The advantages related to telemedicine are linked to the possibility for the doctor to control patients in daily life. In addition to this, social and economic costs are reduced (decrease of physical examination in hospital/health organizations and reduction of system overloaded).
- The adoption of innovative service by health organization is strictly related both to the farsightedness of health operators and to the relationships in which the operator is involved (relational embeddedness).
- The innovative service is based on shared technologies. These ones support the dyadic relationship doctor/specialist-patient/caregiver facilitating the sharing of health data and information. In this way technology becomes an important driver of service innovation that can not be sufficient. In fact telemedicine involves doctors, patients, caregivers, provider of technology, research centers, etc. but the potentialities of telemedicine can be

really exploited only through their networking. This latter requires and allows the sharing of competences in order to provide a more complete holistic service not only limited to the health aspects but also considering the quality of life.

- The adoption of telemedicine services and their diffusion is strictly related to the environment. Nowadays the absence of legislative rules related to health service supported by technology credit is a limit for telemedicine development.
- The interconnection of relationships and actors may increase the value generated by the innovative service but can also limit its diffusion due to the myopia of a single actor. For instance if some organizations pertaining to local service diffusion do not credit the importance of such innovativeness they become an obstacle to the entire system adoption.

Following the previous considerations the development of technologies' potentialities allowed the improvement both of health services and of their quality.
Going more in depth the innovative services are generated not only by technology but also by the networking attitude that characterize the organizations involved.
The interconnections of relationships and the resulting resource sharing support the development of the social health network and the improvement of the dyadic relationship "doctor-patient". This brings to the identification of a new role for the patient who becomes an active player. Being part of the innovation process the patient is understood as an individual, as a psycho-physical whole and therefore in need of medical care, as well as psychological and spiritual assistance. The way the system sees and treats the person, in his multi-dimensionality, is reflected accordingly in the process of development of social and health benefits paid by the organizations. This approach recognizes that offering innovative services based on quality (able to combine technical and non technical elements) is the more effective way of action due to the possibilities coming from networking.
In fact, higher quality levels of health services are generated not only by the introduction of an innovative technology but also by an innovation considered as "a new way to work together". From this perspective the stakeholders can benefit from a cooperation approach in which resources sharing and competences combining allow the reaching of two kind of objectives: a specific objective related to the single organization and a common one related to patient satisfaction.
As described in the table 1 and table 2, we can observe that the development of each project is articulated on interconnected dyadic business relationships. Through each relationship the actors involved combine several competences, capabilities, financial resources, technical equipments and other resources. This resources combining generates benefit for each actor and for the other organizations located in the territory, both from an innovation dimension and quality dimension.
Particularly we define technical quality as "what is supplied" (core service) and functional quality as "how it is supplied" (process dimension) (Gronroos, 1993).

Table 1 – Actors, resources and benefits (e-Care Project)

Actors involved	Shared and combined elements	Quality Benefits
Villa Beretta-Valduce Hospital	Rehab. competences , healthcare capabilities, routines, protocols, technologies/equipments and data	Innovation generation Functional quality
Villa Beretta - UILDM	Rehab. competences, health information, research report, muscolar dystrophy knowledge, management of territorial special needs	Innovation diffusion Functional quality

Villa Beretta – TMR	Scientific and health knowledge , tele-didactics, intermediation within health specialized centres	Innovation diffusion
Villa Beretta – eWork	Telemedicine technologies, software, tools	Innovation generation Technical quality
Villa Beretta – Cariplo Foundation	Financing resources	Innovation facilitation Technical support
Villa Beretta - CNR	Research capabilities, coordinating capabilities, research development competences, territorial sharing of results, bids	Innovation generation Innovation diffusion Technical quality
Valduce Hospital – UILDM	Therapeutic program	Innovation generation Innovation diffusion Functional quality Technical quality
Valduce Hospital – CNR	Improvement of activity research	Innovation generation Innovation diffusion Technical quality
Valduce Hospital – Cariplo Foundation	Financing resources	Innovation facilitation Technical support
TMR – eWorks	Technology adaptation to health care needs	Innovation generation Technical quality
TMR – CNR	Capabilities to develop innovative projects	Innovation generation Innovation adoption Technical quality
UILDM – Cariplo Foundation	Financial resources, knowledge of territorial needs	Innovation facilitation Technical support
UILDM – CNR	Specialized guide lines	Innovation adoption
CNR - Cariplo Foundation	Financial resources	Innovation facilitation Technical support

Table 2 – Actors, resources and benefits (Spider Project)

Actors involved	**Shared and combined elements**	**Quality Benefits**
Villa Beretta-Valduce Hospital	Rehab. competences , healthcare capabilities, routines, protocols, technologies/equipments and data	Innovation generation Functional quality
Villa Beretta – Cariplo Foundation	Financing resources	Innovation facilitation Technical support
Villa Beretta - CNR	Research capabilities, coordinating capabilities, research development competences, territorial sharing of results, bids	Innovation generation Innovation diffusion Technical quality
CNR - Cariplo Foundation	Financial resources	Innovation facilitation Technical support
Villa Beretta - MEDEA	Biomedical knowledge, research competences, clinical practice	Innovation generation Technical quality
Villa Beretta - INRCA	Research output, geriatrics and gerontology knowledge	Innovation diffusion Technical quality
Villa Beretta – La nostra famiglia	Psycho educational capabilities, social supports, clinical approach	Innovation generation Innovation diffusion Functional quality
Villa Beretta - UNIVERLECCO	Information Exchange about services	Innovation diffusion
Villa Beretta – Lombardy Region	Policy guidelines , management of territorial needs	Innovation facilitation Innovation diffusion
Villa Beretta – Valduce Foundation	Information sharing, financial resources	Innovation diffusion Technical support

Valduce Hospital – La Nostra famiglia	Rehab. competences , healthcare capabilities	Innovation generation Technical quality Functional quality
Valduce Hospital - INRCA	geriatrics and gerontology knowledge	Innovation generation Functional quality
Valduce Hospital – Valduce Foundation	Information sharing, financial resources	Innovation diffusion Technical support
Valduce Hospital – Cariplo foundation	Financial resources	Innovation facilitation Technical support
Valduce Hospital - MEDEA	Biomedical knowledge, research competences, clinical practice, operational protocols	Innovation generation Technical quality
Valduce Hospital - UNIVERLECCO	Information Exchange about services	Innovation diffusion
INRCA - MEDEA	clinical practice, operational protocols	Innovation generation Technical quality
INRCA - UNIVERLECCO	Information Exchange about geriatrics and gerontology services	Innovation diffusion Higher Information
INRCA – La nostra famiglia	geriatrics and gerontology knowledge, rehabilitation competences	Innovation generation Functional quality
INRCA – Lombardy Region	Management of special needs	Innovation diffusion Tecnical support
MEDEA – La nostra famiglia	Biomedical knowledge	Innovation generation Functional quality
La nostra famiglia – Lombardy Region	Special bids	Innovation diffusion Tecnical support
UNIVERLECCO – Lombardy Region	Policy guidelines Financial support	Innovation diffusion Tecnical support
UNIVERLECCO – Cariplo Foundation	Financial resources	Innovation facilitation Technical support
Cariplo Foundation – Valduce Foundation	Financial resources	Innovation facilitation Technical support
Cariplo Foundation - CNR	Financial resources	Innovation facilitation Technical support
CNR – Valduce Foundation	Research capabilities, territorial sharing of results, bids	Innovation facilitation
CNR – Lombardy Region	coordinating capabilities, research development competences, bids	Innovation facilitation Technical support

Through the development of relationships each actor involved increases its knowledge and the ability to generate innovation. In this way the quality, both technical and functional, is positively influenced by the interaction of actors, resources and activities.
From this perspective innovation is founded on the combining of technical and social resources. The interconnected relationships that outline the network allow the generation of innovation. Through the interaction among the several actors the innovation generated can be re-combined facilitating in this way its diffusion and adoption.
Although a growing awareness that the patient and his satisfaction are the collective objective of the actors involved in the network, the translation of these principles into action still faces considerable difficulties.

CONCLUSIONS

The final aim of the development of innovative services in health context should be related to the global assistance provided to the patients and his/her caregiver.

That means to improve quality of the medical assistance thanks to the combination of different competences but also to support the patient outside the hospital in order to maintain a better quality of life. This latter is identified in the health recovery and in the granting of safety (long lasting monitoring).
The adoption of service innovation by health organizations depends not only on the capability of health operators to be far-sighted but also on the capability of organizations to develop and maintain relationships in a wide social health network. From this perspective the exploitation of innovative health services and their diffusion should consider the development of relationships with different kind of operators: hospitals, technology providers, research centers, foundation, local associations and organizations, etc. but also specialists such as speech therapist, psychologist, radiologists, physiotherapists and social assistants. The strictly cooperation among those actors should develop a therapeutic alliance.
Combining the first aspect and the second one, efficiency and effectiveness of health innovative service could be reached if and only if technology is considered as a tool of the innovative process. This tool requires and allows a second thought about the role of actors involved and the reorganization of the entire disease management. The innovation is not the tool but the message carried out by the tool. Moreover this kind of approach grant a sustainable service considered as a reduction of social and economic costs not only at a local but also at national level.
Limits of the research presented pertain to the focusing on the organization's perspective. Further researches should consider the patient point of view. It could be interesting to go more in depth in the patients' adoption process considering their vocation to use technology for health diseases. In addition to this, further researches could consider the application of telemedicine to different kind of diseases. In fact our analysis is focused on chronic diseases that present a stable clinical picture unlike to acute diseases.

REFERENCES

- Andersson, U. and Forsgren, M. (2000), "In Search of Centre of Excellence: Network Embeddedness and Subsidiary Roles in Multinational Corporations", *Management International Review*, 40(4), pp. 329-350.
- Arnetz, B.B. (1999), "Staff perception of the impact of health care transformation on quality of care", *International Journal of Health Care Quality Assurance*, 11(4), pp. 345-351.
- Badri, M.A., Attia, S.T., and Ustadi, A.M. (2008), "Testing not-so-obvious models of healthcare quality", *International Journal of Health Care Quality Assurance*, 21(2), pp. 159-174.
- Barnett, H.G (1953), *Innovation: the basis of cultural change*, New York: McGraw Hill.
- Berry, L.L., Zeithaml, V.A. and Parasuraman, A. (1985), "Quality counts in services too", *Business Horizons*, 28(3), pp.44-52.
- Boulding, W., Kalra, A., Staelin, R. and Zeithaml, V.A. (1993), A dynamic process model of service quality: from expectations to behavioral intentions", *Journal of Marketing Research*, 30(1), pp. 7-27.
- Brown, L.A. (1981), *Innovation Diffusion: A New Perspective*, London: Methuen.
- Butt, M.M. and Cyril de Run, E. (2010), "Private healthcare quality: applying a SERVQUAL model", *International Journal of Health Care Quality Assurance*, 23(7), pp.658 – 673.
- Chang, H., Kwak, T. and Mattila, A.S. (2005), "A Case Study to Determine the Impact of Offering Selective Menus on Customer Satisfaction in a Health-Care Foodservice Operation", *Journal of Foodservice Business Research*, 8(1), pp. 53-78.
- Chisnall, PM. (1989), *Strategic Industrial Marketing*, Englewood Cliffs, NJ: Prentice Hall.
- Chon, H, White, R.E. and Prybutok, V. (2001), "Relationships among organizational support, JIT implementation and performance", *Industrial Management Data Systems*, 101(5/6), pp.273.

- Cleverley, W.O. and Harvey, R.K. (1992), "Is there a link between hospital profit and quality?", *Healthcare Financial Management*, 46(9), pp.40-45.
- Coleman, J., Katz ,E. and Menzel, H. (1957), "The diffusion of innovation among physicians", *Sociometry*, 20, pp. 253-270.
- Coluccia, A., Ferretti, F. and Cioffi R. (2009), "Cenni teorici sul concetto di qualità percepita in sanità", *Giornale Italiano di Medicina del Lavoro e Ergonomia*, 31(3), supplemento B, Psicologia, pp. B31-B42.
- Cronin, J.J. and Taylor, S.A. (1992), "Measuring service quality: a reexamination and extension", *Journal of Marketing*, 56(3), pp. 55-68.
- Crosby, P.B. (1979), *Quality is free*, New York: McGraw-Hill Company.
- Deming, W.E. (1982), *Quality productivity and competitive position*, Massachussetts Institute Technology.
- Domingo, R.S. and Urbano, D. (2009), "Overview of Collaborative Entrepreneurship: An Integrated Approach Between Business Decisions and Negotiations", *Group Decis Negot*, 18, pp. 419-430.
- Donabedian, A. (1990), *La qualità dell'assistenza sanitaria, principi e metodologie di valutazione*, Roma: La Nuova Italia Scientifica.
- Donabedian, A. (1996), "The effectiveness of quality assurance", *International Journal for Quality in Health Care*, 8(4), pp. 401-407.
- Donabedian,A. (2005), "Evaluating the Quality of Medical Care", *Milbank Quarterly*, 83(4), pp. 691-729.
- Dubois, A. and Araujo, L. (2004), "Research methods in industrial marketing studies", in Håkansson, H., Harrison, D. and Waluszewski, A. (eds.) *Rethinking Marketing: Developing a New Understanding of Markets*, pp. 207-228. Chichester: John Wiley & Sons.
- Dubois, A. and Gadde, L-E. (2002), "Systematic combining. An abductive approach to case research", *Journal of Business Research*, 55(7), pp. 553−560.
- Dubois, A. and Gibbert, M. (2010), "From complexity to transparency: Managing the interplay between theory, method and empirical phenomena in IMM case studies", *Industrial Marketing Management*, 39(1), pp. 129–136.
- Easton G. (1995), "Methodology and Industrial Networks", in K. Möller and D. Wilson (eds.), *Business Marketing: An Interaction and Network Perspective*, Boston: Kluwer Academic Publishers, pp. 411–492.
- Echols, A. and Tsai, W. (2005), "Niche and performance: the moderating role of network embeddedness", *Strategic Management Journal*, 26(3), pp. 219-238.
- Eisenhardt, K.M. (1989), "Building theory from case study research", *Academy of Management Review*, 14(4), pp. 532-550.
- Everdingen, Van Y. and Wierenga, B. (2002), "Intra-firm adoption decisions: role of inter-firm and intra-firm variables", *European Management Journal*, 20(6), pp. 649-663.
- Feigenbaum, A.V. (2002), "Total quality management", *Enciclopedia of Software Engineering*.
- Fiocca, R., Montagnini, F., Snehota, I. and Tzannis A. (2007), "Valore, relazioni e confini d'impresa", in R. Fiocca (a cura di), *Rileggere l'impresa. Relazioni, risorse e reti: un nuovo modello di management*, Parma: ETAS.
- Ford, D., Gadde, L-E., Håkansson, H. and Snehota, I. (2002), "Managing networks", *Proceedings of the IMP-Asia Conference*, Perth: Curtin University.
- Ford, D., Gadde, LE., Håkansson, H. and Snehota, I. (2003), *Managing Business Relationships*, Chichester: John Wiley & Sons.
- Frambach, RT and Schillewaert (2002), "Organizational innovation adoption. a multilevel framework of determinants and opportunities for future research", *Journal of Business Research* 55, pp. 163-176.
- Gatignon, H. and Robertson TS (1989), "Technology diffusion: an empirical test of competitive effects", *Journal of Marketing*, 53(81), pp. 35-49.
- Gill, L. and White, L. (2009), "A critical review of patient satisfaction", *Leadership in Health Services*, 22(1), pp. 8-19.
- Goodrich, J. and Cornwell, J. (2008), *Seeing the person in the patient*, London: The King's Fund.

- Granovetter, M., (1985), "Economic Action and Social Structure: the Problem of Embeddedness", *American Journal of Sociology*, 91, pp. 481-493.
- Greenhalgh, T., Robert, G., Bate, P., Kyrakidou, O., Macfarlane, F. and Peacock, R. (2005), *Diffusion of Innovations in Health Service Organisations: A Systematic Literature Review*, Oxford: Blackwell Publishing
- Grönroos, C. (1983), *Strategic management and marketing in the service sector*, Boston: Marketing Science Institute.
- Gulati, R.N. (2000), "Strategic Networks*", Strategic Management Journal*, 21(3), pp. 203-215.
- Håkansson, H. and Snehota, I. (1989), "No business is an island". *Scandinavian Journal of Management Studies*, 4(3), pp 187-200.
- Håkansson H., Snehota I. (1995), *Developing relationships in business networks*, Routledge Edition, London.
- Håkansson, H. and Waluszewski, A. (2002), *Managing technological development: IKEA, the environment and technology*, London: Routledge.
- Håkansson, H. and Snehota, I. (2006). "No business is an island: The network concept of business strategy", *Scandinavian Journal of Management*, 22(3), pp. 256-270
- Håkansson, H., Ford, D., Gadde, L-E., Snehota, I. and Waluszewski, A. (2009), *Business in Networks*, Chichester: Wiley.
- Halinen, A. and Törnroos, JA (1998), "The Role of Embeddedness in the Evolution of Business Networks". *Scandinavian Journal of Management*, 14(3), pp. 187-205.
- Halinen, A. and Törnroos, J.Å. (2005), "Using Case Methods in the Study of Contemporary. Business Networks", *Journal of Business Research*, 58(9), pp. 1285-1297.
- Hansen, M. and Nohria, N. (2004), "How to Build Collaborative Advantage", *MIT Sloan Management Review*, 46(1), pp. 22-30.
- Iannettoni, M.D., Lynch, W.R., Parekh, K.R. and McLaughlin, K.A. (2011), "Kaizen Method for Esophagectomy Patients: Improved Quality Control, Outcomes, and Decreased Costs", *The Annals of Thoracic Surgery*, 91(4), pp. 1011-1018.
- Imai, M. (1986), *Kaizen: the key to Japan's competitive success*, Kaizen Institute.
- Järvensivu, T. and Törnroos, J-Å. (2010), "Case study research with moderate constructionism: Conceptualization and practical illustration", *Industrial Marketing Management*, 39(1), pp. 100-108.
- Johanson, M. (2007), "Networks in transition", *23rd IMP-conference* , Manchester, UK.
- Jones, C. (1997), "A general theory of network governance: exchange conditions and social mechanisms", *Academy of Management Review*, 22, pp. 911-945.
- Juran, J. (1995), *A history of managing for quality*, Milwaukee, Wisconsin: ASQC Quality Press.
- Katz, M.L. and Shapiro, C. (1994), "Systems Competition and Network Effects", *Journal of Economic Perspectives*, 8(2), pp. 93-115.
- Kenagy, J.W., Berwick, D.M. and Shore, M.F. (1999), "Service Quality in Health Care", *Journal of American Medical Association*, 281 (7), pp. 661-665.
- Klein KJ, Conn AB and Sorra JS (2001), "Implementing computerized technology: an organization analysis". *Journal of Applied Psychology*, 86(5), pp. 811-824.
- Lee, H., Lee, Y., Yoo, D. (2000), "The determinants of perceived service quality and its relationship with satisfaction", *Journal Of Services Marketing*, 14(3), pp. 217-231.
- Makkonen, H. (2010),"The Innovation Adoption/Diffusion and the Industrial Network Approaches", *26th IMP-conference in Budapest*, Hungary.
- Mallory, O.J. (2011), "The Shifting Landscape of Health Care: Toward a Model of Health Care Empowerment", *American Journal of Public Health*, 101(2), pp. 265-270.
- Montgomery, H., Lipshitz, R., and Brehmer, B. (Eds.) (2005), *How professionals make decisions*. Mahwah, NJ: Erlbaum.
- Mutter, R.L., Rosko, M.D., Greene, W.H. and Wilson, P.W. (2011), "Translating Frontiers Into Practice: Taking the Next Steps Toward Improving Hospital Efficiency", *Medical Care Research and Review*, 68(1), pp. 3S-19S.
- Normann, R. (2002), *Ridisegnare l'impresa*, Milano: ETAS.
- Normann, R. and Ramirez, R. (1993), "From value chain to value constellation: designing interactive strategy", *Harvard Business Review*, 71(4), pp. 65-77.

- Nwabuezea, U. (2011), "Implementing TQM in healthcare: The critical leadership traits", *Total Quality Management & Business Excellence*, 22(3), pp. 331 – 343.
- Oliver, R.L. (1994), "Conceptual issues in the structural analysis of consumption emotion, satisfaction and quality", Evidence in service settings, *Advances in Consumer Research*, 21, pp. 16-22.
- Piekkari, R., Plakoyiannaki, E. and Welch, C. (2010), "'Good' case research in industrial marketing: Insights from research practice", *Industrial Marketing Management*, 39(1), pp. 109-117.
- Robertson, T.S. and Gatignon, H. (1986), "Competitive Effects on technology diffusion", *Journal of marketing* 50(3), pp. 1-12.
- Robinson, W.T. (1990), "Product Innovation and Start-Up Business Market Share Performance", *Management Science* 36, pp.1279-1289.
- Rogers, E.M. (1962), *Diffusion of Innovations* (1st edition), London: The Free Press.
- Rogers, E.M. (1983), *Diffusion of Innovations* (3rd edition), London: The Free Press.
- Rogers, E.M. (2003), *Diffusion of innovations* (5th ed.), New York: Free Press
- Rosenthal, M.B., Fernandopulle, R., Ryu Song, H.S. and Landon, B. (2004), "Paying For Quality: Providers' Incentives For Quality", *Improvement Health Affairs*, 23(2), pp. 127-141.
- Simpson, M. and Docherty, A.J., (2004), "E-commerce adoption support and advice for UK SMEs", *Journal of Small Business and Enterprise Development*, 11(3), pp. 315-328.
- Sood, S., Mbarika, V., Jugoo, S., Dookhy, R., Doarn, Cr., Prakash, N. and Merrell, RC. (2007), "What is telemedicine? A collection of 104 Peer reviewed perspectives and theoretical underpinnings", *Telemidicine and e-Health*, 13(5), pp. 573-590.
- Stoneman, P. and Ireland, N.J. (1983), "The Role of Supply Factors in the Diffusion of New Process Technology", *Economic Journal Conference Papers*, 93, pp. 65-77.
- Subramanian, A., and Nilkanta, S. (1996), "Organizational innovativeness: exploring the relationship between organizational determinant on innovation, types of innovations and measures of organizational performance," *Omega*, 26(6), pp. 631- 647.
- Swanson, E.B. (1994), "Information System innovation among organizations", *Management Sci*., 40(9), pp. 1069-1088.
- Taylor, S.A. and Baker, J.J. (1994), "Modeling patient satisfaction and service quality", *Journal of Health Care Marketing*, 14(1), pp. 34-44.
- Timo Järvensivu, D.K. (2007), "Understanding health and social care networks: A value-creation framework", *23rd IMP Conference*, Helsinki.
- Valente, T.W. (1995), *Network models of the diffusion of innovations*, Cresskill NJ. Hampton Press.
- Venkatraman, N.S. (2002), "Theorizing the Future of Strategy: Questions for Shaping Strategy Research in the Knowledge Economy", in H.T.A. Pettigrew, *Handbook of Strategy and Management*, London: Sage Publications.
- Williams, S.J. and Calnan, M. (1991), "Convergence and divergence: assessing criteria of consumer satisfaction across general practice, dental and hospital care setting", *Social Science & Medicine*, 33(6), pp.707–16.
- Wong, H.S., McNamara, P. and Greenberg, W. (2004), "Provider competition and health care quality: challenges and opportunities for research", *International Journal of Health Care Finance and Economics*, 4(2), pp. 99-111.
- Woodside, A.G. and Biemans, W.G. (2005), "Modeling Innovation, Manufacturing, Diffusion, and Adoption/Rejection Processes", *Journal of Business and Industrial Marketing*, 20(7), pp. 380-393.
- Yasin, M., Augusto, M., Lisboa, J. and Miller, P. (2011), "Assessing the competitive effectiveness of hospitals: The role of quality improvement initiatives", *Total Quality Management & Business Excellence*, 22(4), pp. 433 – 442.
- Zaltman, G., Duncan, J. and Holbek, R. (1973). *Innovations and Organisations*, Wiley Interscience.
- Zeithaml, V., Berry, L.L. and Parasuraman, A. (1993), "The nature and determinants of customer expectations of service", *Journal of Academy of Marketing Service*, 21(1), pp. 1-12.
- Zeithaml, V.A., Parasuraman, A. and Berry, L.L. (1991), *Servire qualità*, Milano: McGraw-Hill.