

# Healthcare Service Innovation: A Reflective Examination of New Developments

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*The research of new service development in the healthcare industry is just emerging. This is linked to the change of focus of healthcare services from being internally oriented to being focused on patients, but also to the still undeveloped nature of new service development as a field. This paper provides a review of the most important topics on introducing service development in healthcare industry, covering the involvement of customers in service development and the use of information technology. Our results suggest that the solution to solving the co-production and the co-creation puzzles is digital transformation. There are proofs that information technology is part of the new services developed within the healthcare industry, as there are proofs that the use of information technology leads to services which increase patients' participation in service production.*

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**Keywords:** New Product Development, Coproduction, Healthcare Industry, Digital Transformation, Service Design, Services.

## INTRODUCTION

While services industries create more than 70% of the world GDP (Lee and Rha, 2018), the world's most advanced economies being dominated by services (Biemans, Griffin and Moenaert, 2016), or servitization (Mendes et al., 2017), service innovation is recognized among the top five important topics in the service research (Lee and Rha, 2018). New service development (NSD) research has increased within the last years (Kitsios and Kamariotou, 2020) especially by considering the poor rate of success on new services. NSD is considered the 'overall process of developing new services, from idea generation to market launch' (Lin and Hsieh, 2011, p. 141). Since services have different characteristics in comparison to products, such as intangibility, heterogeneity, intangibility and perishability, new service development has evolved as a distinct research field in relation to new product development, the initial research being linked to NSD critical success factors and NSD process (Mendes et al., 2017; Papastathopoulou

and Hultink, 2012). More recently, research on NSD is focused on customer involvement and the organization of NSD (Mendes et al., 2017; Papastathopoulou and Hultink, 2012). However, NSD research is still considered immature and more research topics are expected to be developed in the future (Mendes et al., 2017).

The outputs to the society of the healthcare industry are usually analyzed considering two paradigms: products and services. While the first one considers that health services are products manufactured by healthcare systems for use by healthcare customers, the second is the mirror of reality, since healthcare outputs are always coproduced by professionals and service users (Batalden et al., 2016). These two paradigms are further translated in opposite healthcare new service development approaches: the organizational internal focused service development and the external focused service development, also called inside-out and outside-in approaches (Elg et al., 2012). Despite patients being the only stakeholders who experience entirely the full course of a health problem, from first symptom to contact, examination, treatment, follow-up and rehabilitation (Elg et al., 2012), services development has been performed predominantly by the use of an inside-out approach, this technical quality perspective ignoring the functional quality one. However, recently more papers analyze the methods and the results of patients' involvement in services development, the outcomes of such interventions being more creative solutions in comparison to the traditional inside-out approach (Elg et al., 2012).

In this context, this paper provides a review of the most important topics on introducing service development in the healthcare industry. It has been built by considering the main research existing in both new services development in general and in other industries, and the one concerning new service development in the healthcare industry. In the next section existing frameworks concerning new service development are presented, while the third section details the major changes which the healthcare industry faces these days due to different demographic, economic and social changes. The fourth part presents some new services development cases for the healthcare industry and the fifth section concludes.

## **NEW SERVICE DEVELOPMENT RESEARCH**

There are more changes which affect service management research and have led to the increased importance of NSD. One of them is service dominant logic. It is a new perspective which considers that all products and services exist to create value for customers, the companies being capable to offer value propositions, but the creation of value happens in a collaborative process between offeror, beneficiary and other stakeholders (Vargo and Lusch, 2008). In this perspective,

customers are part of the supply-chain which creates value, by interacting with other parts of the supply chain and alone, the most important challenge of companies being to integrate organizational processes of value creation with customers value creation processes (Elg et al., 2012), or the co-creation process. A distinction is made between co-creation for use, when customers participate for their own benefit, and co-creation for others, when customers ideas and knowledge is used for service improvements for others. This logic is the context where NSD is performed, transforming the customers of both product manufacturing companies and service industries into partners for the cocreation process. Customers' and employees' involvement, as conceptualized within the service dominant logic, has been transformed into specific practices adopted by companies. In a comparison between customers' and frontline employees involvement in the three stages of service development (design, development, and full launch) Melton and Hartline (2010) provide evidences that customers' involvement during the design and development phase positively affects innovation's sales performance and new service development project efficiency, in comparison to front line employees who are recommended to be involved especially during the full launch phase. In the design phase, customers provide important ideas for creating products different from the competition, while front line employees' involvement in this phase is not that effective.

In this context, more NSD innovation processes have been proposed. An important aspect a manager should consider while performing NSD is the model of the innovation process, if it follows a waterfall or a spiral model (Lin and Hsieh, 2011). While waterfall processes contain specific steps to be performed and each previous step result is the input for the next step, the nature of this approach has both advantages and disadvantages. It is probably easier to be understood by the team and by managers themselves, while there are few NSD projects which can be implemented adequately from the first try. New information is discovered at each step, one which can affect the way later steps are performed, or even could trigger a reconsideration of the previous performed steps. This way, a spiral model (Lin and Hsieh, 2011), which considers NSD as a process starting from smaller developments, checking how they can be used, followed by newer developments and so on, is more adequate for practice, but it is harder to be managed and understood by external stakeholders. In this spiral, several stages could be considered, as the five-model stages proposed by Lin and Hsieh (2011): service identification (a conceptualization of the service), service value net formation (establishing the interaction process between various business entities which generate service offerings), service modeling, service implementation (including in the two last stages service design and testing), and service commercialization.

Finally, NSD performance is proven to be affected by different internal organizational capabilities, which organizations should develop in time. In a

research concerning the Taiwanese hospitals, Weng and Huang (2012) provide evidence that customer knowledge absorptive capacity and customer knowledge integration are good predictors for NSD performance, while having good customer relational capability help hospitals to create customer knowledge. Secondly, identifying a general framework or checklist or model for NSD management is useful. The SAT model presented by Lin and Hsieh (2011) provides sufficient details concerning which is the to do list while starting a NSD process.

## **THE CHANGING NATURE OF HEALTHCARE SERVICES**

Healthcare services are currently undergoing dramatic changes due to different causes (Patricio et al., 2020). Some of them are demographic, as is the elderly population which drives to a change in healthcare needs associated with an increased prevalence of chronic diseases, mental health concerns and obesity (Patricio et al., 2020; Wallin et al., 2015). There are also economic constraints which modify the nature of healthcare services. The costs of care are higher than ever before due to increased costs of drugs and salaries for professionals and administrative staff. This way, the focus on cost-effectiveness transforms the healthcare system into a value-driven one, one which needs major changes to face these challenges (Patricio et al., 2020).

The evolution of services in other industries has also created a pressure for the healthcare industry. One major challenge these days is to put the patient in the center of the healthcare service and to go beyond the curing illness or “repaired-focused” approach. It is about caring also for other aspects of a person’s wellbeing as person’s physical, cognitive, emotional and contextual aspects (Patricio et al., 2020). The forms patients get involved into the healthcare services have been summarized at three headings by Dent and Pahor (2015): “choice”, “voice” and “co-production”. Patient choice refers to patients’ capacity to choose between different services or to be involved in decisions concerning themselves, being widely used across Europe. Patient voice relates to the involvement of patients in decision-making bodies related to healthcare and to the power they have by getting involved in this type of actions. Co-production is the individual or collective engagement in the delivery of their own treatments and services in partnership with doctors and other health professionals, being observed especially in the United Kingdom (Dent and Pahor, 2015). Healthcare service co-creation is at its incipient phase, being dominated by customers involvement in providing information concerning their needs, without being actively involved in service development (Elg et al., 2012). This emerging phenomenon is related to the conceptual change of medical services from a traditional bio-medical model which focuses on illness treatment to healthcare services in which service co-

production and value co-creation is based on patients role in the provision of care (Palumbo, 2016). This change is not that simple, being related to changes of beliefs and attitudes, and the involvement of both patients and healthcare professionals, as to changes in the way service innovation is made (Palumbo, 2016).

While these challenges have been summed as the Triple Aim of healthcare (better patient experiences, improved population health, reduced costs) (Berwick, Nolan and Whittington, 2008), it is obvious that they have led to an increased interest concerning NSD in this industry.

## **NEW SERVICE DEVELOPMENT PRACTICES IN THE HEALTHCARE INDUSTRY**

The involvement of customers are probably the most used practices in healthcare NSD. These practices are recognized as generating better technical quality and innovation speed, as they generate competitive superiority and improved sales performance (Carbonell, Rodríguez-Escudero and Pujari, 2009). However, there are few empirical evidences on the effects of customer involvement (Crawford et al., 2002; Palumbo, 2016), the impact being usually expressed in wider terms such as health service changes. In a detailed literature review, Olsson et al. (2020) provide evidences on the multiple facets related to the involvement of patients, the impact of this process being linked to all three major involved stakeholders: patients, health professionals, and the organization. For patients the impact is mainly associated with improved service (in terms of waiting times, satisfaction, health outcomes), for health professionals is related to the change of their practices (in terms of procedures, more patient centered care, more time spent with patients), while for the healthcare organization the impact varies from improved efficiency (in terms of costs, number of provided services), changes of the organizational culture, more referrals from patients, but also major changes such as hiring new employees, accreditation efforts. The collaboration with customers in service development has attracted in healthcare industry a more advanced paradigm, the one of service co-production. It implies a rather equilibrated exchange relationship between the patients and the health care professionals, healthcare professionals stimulating and mobilizing patients to be involved in planning, designing and delivering healthcare services, while patients accept their important role into service development (Palumbo, 2016). This process is mainly related to increased service quality, the impact of this approach being poorly researched at the current moment (Palumbo, 2016). Customer involvement can be used by considering two goals: patients' involvement for developing services by providing knowledge concerning the problems or the solutions they perceive as relevant for improving the service (customer triggered

improvements), and patients' validation for the solutions proposed by the healthcare organization by providing feedback to the policy makers (organizational triggered improvements). The latter is targeted also for gaining customers support for unpopular decisions (Crawford et al., 2002).

Customer involvement is an effort for any organization since it involves gathering data by different methodologies as interviews, focus groups, questionnaires etc., data analysis, which finally drives to a continuous process of improvement by considering their input. These activities mean resources allocation. The right approach when it comes to costs is to have a costs-and-benefits measurement, a balance between the allocated resources and the outcomes considered in a data-based approach being recommended (Crawford et al., 2002). Customer involvement should be not taken word by word, meaning that any customer involvement can create value. In an analysis regarding the involvement of expert users in service development, El Enany et al. (2013) observed that they tend to be complicit with professionals and this way unrepresentative involvement occurs in relation to less expert users. The choice of direct users or carer volunteers who want to be involved in the development process represents this way a challenge.

Service improvements based on customer involvement or other practices are not always successful, more examples in this sense being observed. One case is customers' involvement in improving stroke services (Fudge, Wolfe and McKeivitt, 2008), in this case the lack of deep involvement being the main cause for poor impact on services. Patients were poorly involved and only in least technical areas, while the user involvement process was poorly understood at organizational level, only few medical professionals being involved in this project rather than making it an organizational process. Professionals control how users involvement is performed and interpreted (Fudge, Wolfe and McKeivitt, 2008). However, there are more successful examples on how customers can be involved in the process. One case for involving customers is to put them to write detailed diaries concerning the services they have been involved in and to analyze the ideas for improvement they propose, while the qualitative analysis of their stories can reveal the level of quality from the patient's perspective (Elg et al., 2012). Multiple issues are related to this approach, as ensuring that patients are willing to keep such diaries, that their voice is kept protected and that their treatment is not affected by this process (Elg et al., 2012). Considering the service approach, where patients and professionals collaborate to solve medical problems or to improve medical condition of patients, one alternative is to train patients to self-manage their own concerns as chronic pain, diabetes, depression or chronic pulmonary disease (Batalden et al., 2016). This way, the health professional becomes a coach. Another case, given the budget and time restrictions related to medical care all over the world, but considering the coproduction process of healthcare service, is group visits for patients with the same condition, used for

increasing access, decreasing utilization, and increase patients' satisfaction and self-care capacity (Batalden et al., 2016). The time spent together with health professionals increases while the strategies for care are cocreated and better enforced by the whole group. The role of the health professional changes by including facilitator's competences.

A second strategy for NSD in healthcare is the use of information technology and other technologies which are linked as an Industry 4.0 ecosystem. Seen usually as a tool which creates itself a new service, information technology is currently used as a tool which improves the way service development is made, improving the communication between healthcare professionals and patients, but also capable to track the improvement process. Regarding communication, information technology is recognized to diminish the information asymmetry between the two major stakeholder categories, but also to fail in the cases of users who do not have the proper ICT competences (Palumbo, 2016).

In an empirical study concerning the adoption of telehealthcare services, Finch et al. (2003) have observed that detailed planning for deployment and implementation of these services is rather difficult since multiple ideas can emerge from more stakeholders. One alternative could be to have more agile approaches and considering initial deployment and stakeholder feedback, a new development and new feedback and so on. The use of technology in medical care can vary from simple online forums where health professionals can communicate with their patients, to more complex systems, as the online network where all stakeholders (patients, family, researchers, health professionals) involved in the treatment of children and adolescents with inflammatory bowel disease collaborate (Batalden et al., 2016). In this online environment, all stakeholders are encouraged to provide their discoveries, experience, analysis results, as they are encouraged to create tools for co-execution of healthcare service. Telehealthcare is one option which has been discussed by practitioners long time, but given the complexity it involves concerning healthcare process standardization and measurement ago (Finch et al., 2003), it was not widely applied until these days. It involves remote communication between clinicians and patients through the use of information and communications technologies such as interactive video, digital imaging, and electronic data transmission. Later, telehealthcare has been replaced by the e-health concept, which is defined by WHO as 'the use of information and communication technologies for health'. Examples refer to multiple purposes such as treating patients, performing research, performing education activities, tracking diseases, and monitoring public health in general (Kriegel et al., 2013). These solutions have been used for different purposes, such as pain-monitoring for improving real-time patient-doctor communication, e-care as a platform which collects and provides information for doctors regarding patients' history and improves access to this information by the use of different equipment. One case is presented by Wallin et al. (2015), who

analyze a video-based elderly care service. In this case, more stakeholders have been involved to develop a new service which has the customer as the most important participant for service development, this approach being rather holistic and comprised human, organizational and technological aspects, in comparison to the previous technology-based approaches.

As customer involvement and technology use can be seen as the dominant practices in NSD for healthcare services, there are also cases specific to the field. In comparison to other services industry, healthcare has specific features which makes it different. One example is the pressure or the burnout which can affect human resources in this field. This way, one service improvement can refer to human resources themselves and not to beneficiaries, and refers to the use of clinical supervision as a reflective practice to support staff in stressful environments (Long et al., 2014). The adoption of this practice, though effective, has to be made by considering other activities which need to be implemented in parallel, such as training and education of human resources to get involve in clinical supervision.

## CONCLUSIONS

Healthcare industry faces these days a major change concerning the place professionals, patients, and other stakeholders have within the whole serviceecosystem. The service dominant logic advocates that the patient should be the centre of all organizations, the value creation logic being adopted with small steps also within the healthcare industry. In this context, new services development in the field are dominated by customer involvement in the co-creation and co-production. Since many cultural and policy-related barriers exist, the change of traditional healthcare services by considering this perspective is rather slow.

In comparison, information technology is a source for disruptive services' development in the field. This way, some of the new services created within the healthcare industry are rather complementing the traditional curing illness within hospitals approach, allowing patients to benefit healthcare support from distance and this way increasing their participation within the services' production process. This way, information technology is not only part of the new services created within the field, but is the way organizations in this industry could follow, in order to increase patients' involvement in the process.

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