HOME HEALTHCARE SERVICES: A CASE IN SERVICE-DOMINANT-LOGIC IN THE MARKETING OF TECHNOLOGY-BASED SERVICES

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ABSTRACT

Purpose
Home health care services rely on clinical and administrative technologies generally known as "telemedicine". The purpose of this paper is to describe a case in the implementation of home care initiated by a major urban trauma hospital for patients with chronic diseases, thus to make the case for the use of service-dominant logic in the implementation of technologies in the service sector.

Design/methodology/approach
The method used is an actual case of the use of wireless technologies in remoter home care for chronic patients. Barriers to the implementation are listed and these are proposed as explanations of the very slow pace of the implementation process.

Findings
The findings from this study are twofold. First, we found that the main barriers are not technological but anchored in the logic of marketing services to patients. Secondly the paper concluded that by employing service-dominant logic to the provision of technology-based home care services we can increase the pace of implementation of home care and the value of the services provided.

Practical implications
The implication for service industries such as transportation, finance, and healthcare is that successful implementation and use of information and telecommunication technologies must be based on service-dominant logic in the marketing and management of these technologies. It's not enough to provide customers with workable and current technologies. The key to successful implementation is a broader view of these applications as services, not just technologies.

Originality/value
This study provides evidence to the theory that the main barriers to the widespread implementation of telemedicine in home care situations are managerial and behavioral, not technological. The provision of remote home care is an example of a service miniworld, encapsulated within a critical service industry of health care delivery.

Keywords: *service-dominant logic, telemedicine, home care*, *chronic patients, barriers to technology implementation, managerial and behavioral barriers.*

1. PURPOSE

Health care is one of the top issues that all industrialized countries have to deal with today, and more and more will have to address in the coming years. In health care, in fact, we assist two different, and apparently irreconcilable phenomena. Form the one hand, there is a strong push to cost increasing, both because there is a growing demand for health services, due to the ageing of the population, the progress of medicine, a new concept of health - much more comprehensive in terms of attributes than it used to be - and there are still persistent organizational and behavioral inefficiencies which bring to over-using emergency centers and hospitalization. From the other hand, all governments, having serious concerns about the financial sustainability of the healthcare system, are introducing cost-containment measures and are working on how to reform the whole system.

In order to solve this difficult trade-off between higher demand for services and budget constraints, some authors have suggested to increasingly resort to home care promoting a higher adoption of technologies (AMA, 2001; Davies *et al.*, 2009). Home care has long been recognized as a less expensive mode of provision of care (Hayes, 2008), also because it reduces hospitalization and the use of emergency centers. Some estimates suggest that the savings are in the range of 50-70 percent of in-patient costs for certain diseases such as chronic diabetes, cardio-pulmonary, and arthritis (Kvedar *et al.*, 2006; Geisler and Wickramasinghe, 2009; Turchetti and Geisler, forthcoming), guaranteeing at the same time high levels of quality of the services provided (continuous monitoring, appropriate treatments, increase of compliance, help to patient's family).

Home health care services rely on clinical and administrative technologies generally known as "telemedicine". Telemedicine is an area of eHealth defined by WHO: "the delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communications technologies for the exchange of valid information for diagnosis, treatment and prevention of diseases and injuries, research and evaluation, and for the continuing education of healthcare providers, all in the interests of advancing the health of individuals and their communities".

In spite of their evident advantages, home health care and telemedicine are not very diffused yet. Why? The paper addresses this issue by presenting and discussing an actual case of the use of wireless technologies in remoter home care for chronic patients. Barriers to the implementation are listed and these are proposed as explanations of the very slow pace of the implementation process. A service-dominant logic in the marketing of this technology-based service is therefore proposed in order to accelerating the pace of diffusion of home healthcare service.

2. DESIGN AND METHODOLOGY

The method used in this paper is an actual case of the experiment of using wireless technology in remote home care for chronic patients. We describe in this study the process by which wireless

home care was designed to be introduced into homes of a segment of the population of a large urban environment in the United States (Geisler and Wickramasinghe, 2009). The study entails the participation of a large metropolitan trauma hospital. The population of patients was selected from the under-served and under-insured or uninsured patients with at least one chronic disease.

The problem facing the designers of the experiment was as follows. Underinsured or uninsured patients with chronic diseases such as diabetes, asthma, and pulmonary and cardiac illnesses tend to use the hospital's emergency department and trauma center as their primary care facility. Since most of these patients lack health insurance and many are also undocumented immigrants, they prefer the emergency services of the hospital due to the fact that by law they are provided emergency care without any proof of insurance or citizenship, Such behavior of a relatively large segment of the population puts a financial burden on the hospital and severe constraints upon its availability of medical and administrative resources. The federal and state Medicaid (the program which insures patients unable to pay or who lack insurance) program covers only a portion, rather than the entire bill for such health care services.

An analysis by the researchers and the hospital has concluded that the use of home care for this under-served population suffering from chronic diseases, particularly diabetes, will help to alleviate the financial burden imposed on the emergency resources of the hospital. A program was established, together with a foreign company, to create a network of wireless users in the homes of these patients, linked to a central point of service in the hospital. Patients suffering from diabetes could be trained to use a specially-designed cellular phone to dial into the hospital their daily reading of levels of glucose. A trained provider at the hospital would then determine whether any care was necessary and would advise the patient, by telephone, whether the patient should come to the hospital or help would be provided in the patient's residence. This process would also allow caregivers to dispense with the traditional practice of having patients keep a journal/diary in which they would annotate their daily readings of levels of glucose. Daily entries into the cellular phone would provide the hospital with immediate electronic data on the patient's condition as well as weekly and monthly trends. Many patients would traditionally come to the hospital, particularly in a state of urgency and would forget their journal or forget to enter readings of certain days when they felt better. The resulting electronic database would also allow caregivers to have a sample of patients which could be used for research and for statistical analyses.

The experimental study was put into operation in early 2008 and the first stage in which the hospital and the private company agreed on the hardware and the software to be used in the study. A sample of 12 patients was selected and the next stage was the marketing of the procedure to the patients. Detailed face-to-face interviews have been conducted to patients, their families, and hospital professionals (both from the medical and administrative areas). Similar experiments were conducted in other urban setting in the United States and Canada, where the sample included a wealthier group of patients with diabetes. This experiment was more successful. In both cases the patients expressed a high level of satisfaction (Wickramasinghe and Goldberg, 2004).

In the case described here, the stage in which the home care services via the use of wireless technology was being marketed, became an impediment to the implementation of the procedure.

There were several categories of barriers which impinged upon the successful marketing of the wireless technology to the sample of patients and their relatives.

Barriers To Marketing

Four distinct categories of barriers to marketing have been identified. They contained several factors acting as impediments to the successful marketing to patients.

A. ***Technology***: The key barriers in this category were the set-up and training of the patients and the hospital staff, and the connectivity issues. Although many patients and their relatives were accustomed to the use of cellular phones, they were reluctant to learn the procedure needed to send and receive data from the modified phones. Issues of connectivity also arose, particularly within the hospital, in which there was a need to establish an independent center for data collection from the home phones but also to link this center to other parts of the hospital (Turchetti and Geisler, forthcoming).

B. ***Human Behavior:*** Perhaps the stronger set of barriers, this category includes such impediments as: fear of innovation, distrust and data privacy. The under-insured and unsophisticated patients exhibited innate fear of innovation and new technologies. They also feared that the cellular phones are another form of government intrusion into their lives and another means for the government to keep constant control over their movement. Although caregivers carefully explained the specific uses of the phones for the sole collection of clinical data, the fear of allowing such technology into their homes was paramount on the minds of the patients and their families. They also feared the possible misuse of the medical data they provided for purposes other than medical care. The patients and their families explained that with a written diary they carry to the emergency department of the hospital, they had control over who received and read and used their medical information. With the electronic provision of medical information, the patients and their families lost control over where the information is going and who would use it, and for what purpose. Patients with diabetes who had employment feared that their employers might be provided with this information and decide to terminate their employment (Berry, 2006).

C. ***Organization:*** Caregivers experienced issues of resistance to change and the need for special training and special skills to handle the new electronic database of patients with diabetes. Since most of the caregivers at the hospital were already over-burdened with short-term problems and scare human resources, the special training and added responsibilities were met with skepticism and lack of enthusiasm (Bevan and Robinson, 2005).

D. ***Economic:*** The economic barriers were primarily in terms of the cost of the procedure and the inability of the experimenters to clearly show cost-savings or the benefits to patients that would overcompensate for the added costs of establishing the process, training the staff, selling to the patients, and maintaining the process.

Marketing to Patients and Providers

The marketing effort to patients and providers was designed to overcome the barriers listed above. The experimenters used three tactical avenues. The first was to fully explain the procedure and to minimize the onus of the setup and the training. The second was to fully explain the potential benefits to the patients, their families, and to the hospital. The third was to fully explain the destiny of the information, the secrecy that would be maintained and the absolute guarantee that the information would never be shared with any government agency or office, and that any information used for research will be in the aggregate only and would not have any of the individual names (Earp and Payton, 2006).

The marketing effort directed at the patients seemed to be only partially successful. Few patients and their families accepted the explanations of the nature of the process and the issues of data privacy. Even when caregivers joined the marketing effort (to increase the level of trust of the patients), the vast majority of patients resisted the idea that they should introduce the new wireless technology into their homes and into their lives. Some also expressed the strong fear that if they would send their information electronically, the hospital will then totally dispense with its services and will not allow them to use the services of the emergency department of the hospital. They would not accept the premise that the cellular phones are not a replacement for actual care at the hospital but simply a more efficient substitute for the written journal they traditionally used to record their glucose readings.

Although the logic of the home care service was clear and dominant, it was an unacceptable alternative for the patients (Vargo and Lusch, 2008b). It was hardly enough for the experimenters and the hospital staff to enumerate the advantages of the new technology and its benefits - patients and their families would not accept the service. Fear, ignorance, and cultural factors - all quite understandable - have acted in concert to impede the marketing of these wireless technologies and the service they were meant to provide. The marketing effort described here had a duration of about six months with a cost of about 1800 human hours. The experiment is still in progress. The hospital and the experimenters are still hopeful they can overcome the resistance of the patients and their families.

The continuation of the experiment will certainly require additional resources and perhaps a different approach to the marketing of the services to the patients (Vargo and Lusch, 2008a). The enumeration of the attributes and benefits of the service seems insufficient to convince the patients and their families (the customers of the service) that the service and the technology are a worthwhile investment and that their involvement would be beneficial to them and to the management of their illness.

3. FINDINGS

The findings from this study can be clustered into two major categories. The first is the conclusion that technological superiority alone is not enough to persuade customers to buy into a

product or in this case a service. The second category is the conclusion that service-dominant logic can be a positive force in persuading customers to implement technology if it addresses the issues and barriers exhibited by these customers.

"If you build it, they will not necessarily come"

The notion that if a technology is adequate or superior and if its attributes and effectiveness can be demonstrated, then customers will come/buy it, is not necessarily true. In this study we found that the barriers to implementation of the technology—hence to the acceptance by the customers of the service—are not technological but they are anchored in the behavioral issues of the patients/customers. Even a superior technology, already proven in other instances, cannot be marketed to certain segments of a target population, unless the marketing effort addresses the concerns, barriers, fears, and uncertainties of this population. The logic of the service and its appropriateness and its potential benefits is unacceptable to certain customers. In healthcare delivery it is the patients who are viewed as customers of a service which, by definition, is designed to help them and to provide them with relief and medical care. Even in this case, where care is the service, there are non-technological barriers strong enough to prevent the service from being marketed (Turchetti and Geisler, forthcoming).

Technology alone is not sufficient to market the service. As shown here, even in the case of healthcare delivery, the service itself –however effective and attractive—is not enough to successfully market it to the target population. There is a need for an "extra dose of logic", tailored to their needs, which will provide the target customers with the description of the service aimed at the challenges of the barriers which guide their logic and their purchasing behavior.

Service-Dominant Logic

Concentrating on the logic of providing home care services is the preferred way in which such services can be successfully marketed to a target population of patients. Although the initial effort at marketing such technologies has been unsuccessful, the conclusion from this study is that there is a need to restructure the marketing effort and to tailor the logic of the service to the challenges of barriers to implementation and to marketing (Vargo and Lusch, 2008b). More specifically, the conclusion is that there is need to design the marketing effort around a carefully structured service-dominant logic which addresses each and every barrier identified in this study. It is not enough to provide a general logic of potential benefits and the attractive attributes of the technology and the procedure. The marketing campaign must painstakingly list each and every barrier and address the barrier with careful consideration. The marketing campaign must also enhance the role that facilitating factors have in convincing patients to accept the technology-based services, but these factors are less powerful in their ability to persuade customers or to allay their fears and uncertainties.

There are at least two ways or marketing tactics to accomplish this purpose. The first is to clearly list the barrier and to declare that the service will or will not cause this to happen. For example, if the barrier is the fear of the misuse of the information provided by the patient, the marketing

effort declares that the information will be strictly used for clinical purposes only. The second way is to provide the patient with examples or cases of similar applications to similar categories of patients. In the example above it is useful to provide examples of the uses of other medical data received from under-served patients and the appropriate ethical use such data in those cases.

In order to make the marketing effort effective, both technology producers and hospitals/health care services providers have to change approach, adopting a service-dominant logic. From the one side, the technology producers spoke only to the health care services providers, avoiding contacts with the patients and their families, and from the other side, the health care services providers - even if they are, as the patient is, the customers of the technology - played the role of the sellers towards the patient in order to reach their objectives (reduce costs, hospitalization, and use of emergency centers). In other words, in the presented case study, we observed two "negative" approaches: a) the producer did not adopt a service-dominant logic approach; b) one of the customers/users, the hospital, behaved as a producer, not adopting itself a service-dominant logic approach, thus, failing in co-creating value both with the producer and the other customers (see Figure 1).

The conclusion from this study is that although the initial marketing effort was unsuccessful, it succeeded in extracting the barriers which impeded the acceptance of the technology and the service by the target population of patients (Geisler and Wickramasinghe, 2009). This accomplishment was sufficient for the experimenters and the hospital to allow for the restructuring of the marketing program, and in this sense it was a success.

Figure 1. The observed approach and the Service-Dominant Logic approach
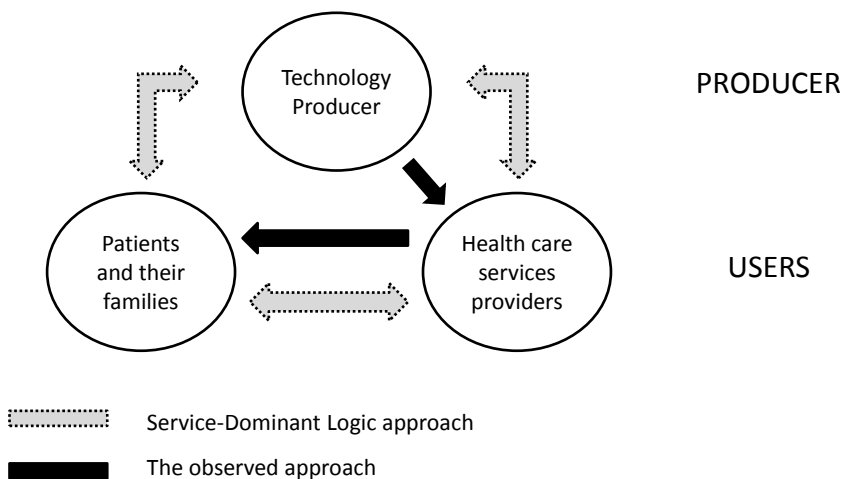
4. PRACTICAL IMPLICATIONS

There are several practical implications from this study to service industries. This paper dealt with the implementation of home care and telemedicine. Marketing of remote care for the home has proven to be a difficult problem, requiring a modified marketing scheme which addresses the barriers to implementation. These are barriers also common to traditional implementation and adoption of technology, particularly information and telecommunication technologies.

This paper identifies four categories of practical implications for the service industries, such as transportation, finance, hospitality, and healthcare. Although each industry sector has some specific needs and requires a somewhat differentiated approach to marketing of technology-based services, the implications listed in this paper apply across all of these industrial sectors.

"One Size Doesn't Fit all"

The notion that the marketing of technology is a uniform activity across service sectors is wrong. The practical implication from the case study reported here is the need for a tailored marketing approach for each sector. In healthcare there is a need to identify not only the attributes and capabilities of the technology being marketed, but also the special needs and factors inherent in the potential customers/patients. Marketing of technology for the healthcare sector requires tailoring the marketing approach to specific barriers, and addressing each one of these barriers.

In the financial sector, for example, the practical implication is embedded in the need to market information and telecommunication technology in a manner which addresses the constraints and the specific barriers inherent in the industry and in the customers. Too often vendors of information and telecommunication technologies employ a standardized marketing plan for all service industries. "What works for transportation will also work for banks and for hospitals". The initial implementation of information technologies in the banking industry in the United States failed mainly because vendors looked for a unified model of an all-encompassing network of banks. They underestimated the complexity of the banking system and the unique attributes of individual banks, their specific needs and the unique barriers they had.

Technology Is Not Enough

Information and telecommunication technologies, however exciting and effective, do not sell themselves. The practical implication to other service sectors is that technology alone is not enough to successfully market. In the transportation sector, for example, the existence of effective information technology for the sale of airline tickets was not enough for all airlines to implement the technology. With the evolution of the Internet, the technology first developed by American Airlines as a workable ticketing system, acquired a successful path of adoption, mainly because the Internet resolved many of the problems and addressed many of the barriers to implementation. Unlike traditional products, such as appliances or automobiles, the implementation and adoption of technology for the service sector requires the additional employment of service, rather than technology dominant logic.

If First You Don't Succeed, Try, Try Again

Another practical implication is the notion gained from this case study that an initial attempt to market the technology to a service industry may fail, but the failure is a blessing in disguise. The failure may help to identify the barriers inherent in the service industry and its customers. This apparent failure allows the marketers of technology to restructure their marketing approach and tactics to address these barriers. The initial failure of the implementation of information and telecommunication technologies in the financial sectors has led to the revision of the marketing strategy and tactics of key vendors. These companies reassessed their approach and restructured their marketing effort so as to address the barriers which they had uncovered during the failed effort.

From Propaganda To Conversation

In the presented case study, the service has been marketed as a good, showing and communicating the advantages for the patient and the hospital. Neither the patient and his/her family nor the hospital professionals (administrative and medical) have been adequately listened and brought/involved into the process of creation of value. Therefore, they have continued to see the service from outside, maintaining their doubts and aversion to the proposed opportunity. The benefits and the creation of value related to the service did not turn out to be clear to the users. They have been told what they had to do (provide information and data) and the results have been that they did not perceive the benefits, the value for them. On the contrary, they believed that the home care service tuned out to benefit only the hospital (which will gain a cut in hospitalization and use of emergency centers) and reduce their opportunities and level of service (they felt that adopting home care service would have limit their chance to receive face-to-face services and the accessibility to healthcare structures).
Therefore, as it happens for other service industries such as financial services and the professions (lawyers, engineers, architects, etc.), it is necessary to bring the customer (in our case study, the patient, his/her family, and the health care services providers) and all the other relevant stakeholders into the process of creation of value, talking with them - not simply informing them - from the very beginning of the process. It must become a conversation and a co-creation of value (Lush and Vargo, 2008; Payne *et al.*, 2008).

5. ORIGINALITY AND VALUE

This case study provides some evidence to the proposition that the main barriers to the marketing and adoption of telemedicine in home care situations are organizational, behavioral and economic, not technological. This evidence is in line with the traditional findings in the marketing of technology in other areas, such as industrial research and development, and the marketing of new technology-based products by industrial companies.

The findings from the case study described in this paper offer an explanation of why the initial failure of the marketing effort aimed at the implementation of remote care wireless technology

for certain segments of patients with chronic diseases. The provision of home care is an example of a service mini-world, encapsulated within a critical service industry of the delivery of health care. The value of the case study described in this paper is primarily in findings that explain a paradoxical phenomenon of the rejection of improved health care delivery due to the issues associated with the adoption of new technologies. Under-served patients with debilitating chronic diseases resist the implementation of improved services and fail to accept the logic of the potential benefits from these improved care services. Instead of embracing such improvements which will allow them to stay in their home and to be monitored from the hospital via the use of cellular phones, the patients and their families resist the change and reject the new technologies.

The implication to other industries in the service sector is that if customers of the healthcare industry reject services due to their resistance to technological change, it stands to reason that in other service industries such as transportation, hospitality, financial services, education, and the professions (lawyers, engineers, architects, etc.) the marketing of technological-based services which are less critical than healthcare, resistance to technological change may have an even higher impact on the nature and the success of marketing of these services. The value of the findings from the case study reported in this paper is therefore in the lessons learned from the case study in healthcare services and the extension to other industries in the service economy. The provision of services alone (even at no cost to the customers as is the case with the under-served population of patients described in this case) and the existence of a sound logic to the marketing of such services are not sufficient to successfully market the services to prospective customers.

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