

## **Nordic Workshop on Health Management and Organization**

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### **Constructing a high-quality service process for a customer in public health care network**

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#### **Abstract**

This paper illustrates the building of a complete service process to the customer. The patients need comprehensive customer processes. That means that they are treated thoroughly, and all the aspects of their life (physical, mental, social) are observed. When the comprehensive process is constructed, three aspects of quality should be paid attention to. Firstly the quality of the interaction process with the patient should be taken into consideration. Secondly the variation of the processes should be observed. This means dividing processes on the basis of customer needs. Finally the quality of the result or in other words the outcome of the treatment process should be reviewed.

**Keywords:** health care, processes, quality, customer orientation, comprehensive service

#### **1 Introduction**

The public health care system is under growing pressure, because the number of its customers grows constantly (Seppänen, 1998). Social- and healthcare system is in danger of heading into a crisis due to a raise of expenses (Kivisaari, 2004). According to our research, at the same time many elderly feel left alone and disappointed in the quality of health care service they receive. An important reason behind the apparent blocking up of primary health care network is failures in service processes.

The study examines public sector health care management. Two different theoretical perspectives are introduced and applied to characteristics of public sector. These theories come from marketing and process models created for public health care. Our focus is on overall quality of services. Processes are analyzed also from perspective of responsibilities in the light of demands on comprehensive care.

The underlying research questions are:

- How the service chain of the patient should be constructed?
- What issues should be taken into account so that the service process would be successful?

## **2 Theoretical background**

Our aim is to improve the management of the service process for the customer in the public health care network. This affects the quality of life perceived by the customer and the mental well-being of the workers in the network.

Process thinking has developed mainly in free market environment. That is why it is essential to form a comprehension of the public government as an operational environment. That background information basically helps us to understand, how organization activities are governed (Parvinen, 2003) in public healthcare system. Thus it helps us to understand patient service processes as well (Parvinen, 2003).

### ***2.1 Basic characteristics of public sector***

In this section we bring up essential public sector characteristics in our research point of view. Background information of the organization can be outlined by governance theory.

Governance theory is a name for theories that are concentrated on contracts (Foss, 2000). According to governance thinking organizations and enterprises exist in order to enable the creation of contracts and collaboration between people and groups (Foss, 2000; Madhok 2002).

Governance theory has acted as a basis for the governance perspective that offers the means for analysis of the operational environment. It consists of two different parts, governance modes and governance practices. The governance modes show, how the economic activities are organized and how different organizational levels interact with each others. Governance practices are arrangements that have an affect on behaviour of individuals and interaction between people. (Parvinen, 2003; Parvinen and Kujala, 2004)

In the level of governance modes the public health care in Finland can be described as follows. Finnish integrated service delivery network offers services to its citizens. Cities produce mainly the offered services, but they may have some shared services with their neighborhood cities. Vantaa as well buys some services from the private sector. The organization itself is non-profitable. Public sector is expected to provide the needed amount of services for every patient (Parvinen and Kujala, 2004).

From the viewpoint of our research, it is important to point out that governance practices represent a wide spectrum of strategic or administrative arrangements or both, within the organization (Parvinen and Kujala 2004). When formulating healthcare practices, stakeholder analysis is essential. This means identification and prioritization influential stakeholder groups. Basically they are final customer, workers and financiers. Stakeholders of public healthcare have different kind of aims and it is important to make them visible. Customers wish to get the best kind of treatment for them whenever it is needed. People want to receive as much health care services as possible; there is no end to the need. In the 1960's there was one doctor per 9000 residents. At the moment there is one doctor for 2000 residents. However residents are complaining about lack of doctors (Lillrank et al., 2004). At the same time the citizens hope to have as low fees as possible. Based on our research, lack of labour is a significant problem in healthcare. For this reason workers need to have relief to their work

load, either by getting more work resources or decreasing the number of patients. These expectations are controversial with each other which causes problems.

In this kind of situation Wagenheim and Reurink (1991) advise to recognize the main aim of the process and considering which ones of the motives help to accomplish that. Virtanen and Wenberg (2005) challenges public sector for looking things more holistically and make plans for a longer period of time. In our case research we observed that there should be pointed more attention to the comprehensive care of the patients.

## **2.2 Quality aspects in public healthcare management**

Finnish health policy is aimed at reducing premature deaths, extending people's active and healthy life, ensuring the best possible quality of life for all (Ministry of Social Affairs and Health, 2004). The WHOQOL group defines quality of life "as individuals' perceptions of their position in life in the context of culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns (A.E. Bonomi et al, 2000)."

Quality of life is entirely subjective and cannot be observed by others. The concept of quality of life is broad: it includes individuals' physical health, psychological state, level of independence, social relationships, personal beliefs, and their relationship to salient features of the environment. (A.E. Bonomi et al., 2000)

In the following we will describe quality from two perspectives: marketing and industrial standpoints. Finally we will unite these two viewpoints and consider how the interaction between public health care and the customer would be good and promote quality of life.

### **2.2.1 Quality from relationship marketing viewpoint**

In relationship marketing theory the quality of the service can be understood as customer perceived quality. Perceived service quality means that the quality perception takes place during the consumption process of the service (Grönroos, 1982a).

Customer perceived quality is a function of two different dimensions of quality: *technical and functional*. Technical quality comprises the outcome or the solution provided. The functional quality describes the quality of the interaction process. In relationship marketing the functional quality dimension grows in importance and often becomes the dominating one. (Grönroos, 1982b) In health care, functional quality could comprise, for example, the intensity, thoroughness and suitability of communication between the customer and the service provider.

### **2.2.2 Quality from industrial management viewpoint**

Two essential quality concepts come from industry, namely *variation and variety*. Variation of the product depicts the difference between a provided product and the ideal product. Generally, managers have specified exact fault tolerance lines for outputs. Line workers have an instruction to discard of faulty products. Comparing with healthcare processes, a faulty service takes place when a patient treated in a wrong way returns back to treatment, gets

injuries or even perishes. Zones of tolerance define the quality of the process even in the case of a service process (Shewhart, 1931; Berry and Parasuman, 1991).

In contrast, variety is always associated with something good. Variety represents different targets that offer different ways to fulfill the same needs (Lillrank and Liukko, 2004). In practice this means paying more attention to individual needs of the customer.

### **2.2.3 Synthesis of quality aspects for public healthcare**

As we earlier mentioned customer perceived quality can be divided into two different dimensions: technical quality and functional quality. We have as well assumed from industrial management that process quality can be understood in the light of two different aspects: variation and variety.

Technical quality is comparable to variation. Their meanings are similar: technical quality stands for the quality of the outcome of the service and variation stands for the difference between the provided service and the ideal service. Functional quality and variety complement the presented quality definitions. Functional quality depicts the quality of the interaction connected to the service and variety represents the different ways of consuming the service in order to fulfil the same needs.

Relationship thinking has its roots in increasing profitability. Profitability of customers is a different issue in public sector compared to private sector, because customers do not pay their service fees directly to the provider.

Still enduring relationships are important and offer better perceived quality, in addition of customer, to producer. A comprehensive service process enables the creation of an extensive image of the customers' problems and, thus, leads to a better result. This guarantees good service quality for the customer and contributes to customers' quality of life as a result from this. On the other hand, a broader image on customers' problems as a way to enhance the quality of the service brings also cost savings because patients that have been taken care of thoroughly do not have to resume care due to same problems.

As a result we state that quality of public health care services should be seen as an entity that is comprised of three components: technical quality or variation, functional quality and variety. These components and their interaction are illustrated in the figure 1.

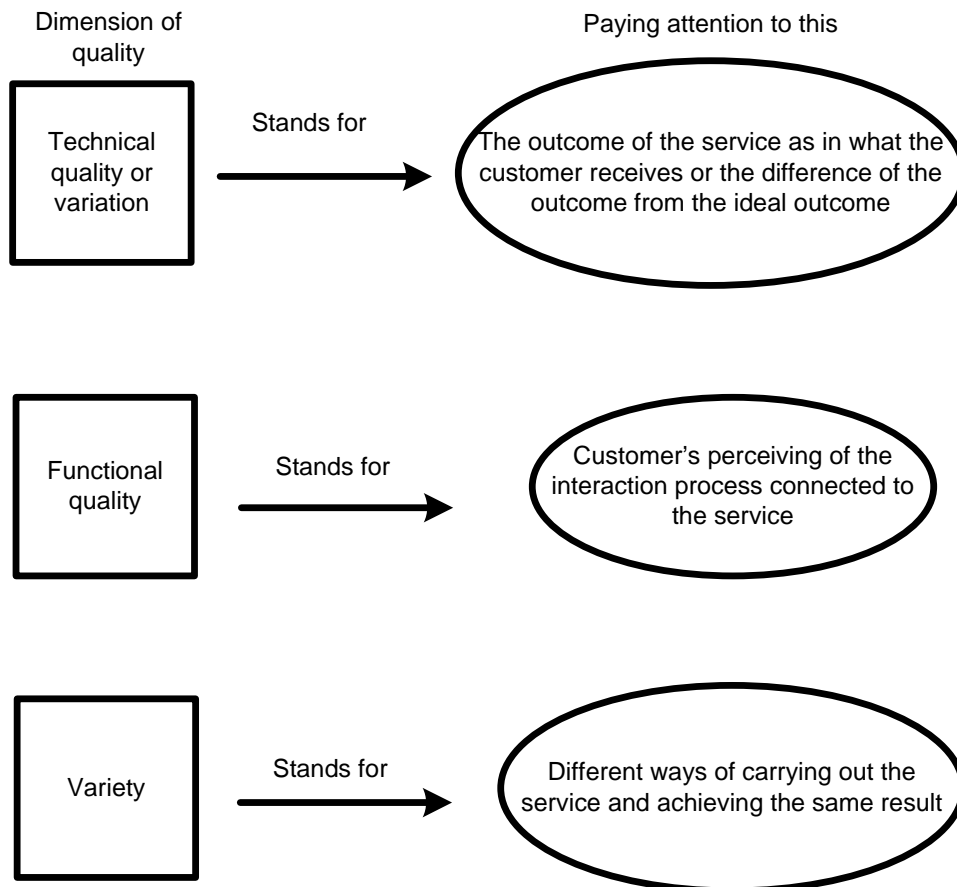


Figure 1: Dimensions of quality

### 2.3 Processes in public health care

We will start this chapter by look over what is a care relationship. After that we will introduce two ways of describing processes that complete one another. The other way, service as a process, has its roots in marketing. It describes the interaction process between the customer and the service provider. This facilitates understanding the customer's problem. We applied this to public sector by taking the differences between public sector and free market environment into consideration. Another way of describing processes is originally from productional industry even though Lillrank and Liukko (2004) has applied it to health care. This approach classifies processes by what they demand. This makes planning the customer's care easier. These two presented approaches to processes make out a logical continuum. Processes cannot be planned unless the customer's needs are correctly understood. In order to understand how the customers aspire to fulfill their needs, there has to be interaction between the customer and the service provider.

### **2.3.1 Care relationship**

Relationship marketing can be defined as the process of identifying and establishing, maintaining and enhancing relationships with customers and stakeholders so that the objectives of all parties involved are met (Grönroos, 1989; Grönroos, 1994)

Relationship marketing approach can be applied to health care. When taking care of the customer it is possible to create care relationship. The relationship may be planned target oriented in intense collaboration with the customer. This is emphasized if the relationship is long-lasting. In customer relationship that goes beyond one single transaction, the outcomes of a single transaction become just one element of a holistic, developing service offering (Grönroos, 2004). The relationship approach puts the internal value-creating processes of customers at the center of attention. The patient is always expert on his own feelings. The solution for the customer is the relationship itself and the way it enables customer's value-creation and actual need fulfilment. (Grönroos, 2000).

In public sector the length of the service relationship should be limited. The relationship should be terminated when the customer's problem is resolved. Provided that the customer has fulfilled his obligations towards the service provider, in free markets the customer is usually the party that breaks down the service relationship. If the customer is obliged to finance the service by own means, he or she controls the amount of services that is consumed (Lillrank et al., 2004). In this case the customer buys services only when it is necessary. This does not apply public sector, because there the customer does not finance the services (Lillrank et al., 2004). In this case the public sector has to control the services. The public sector health care and the patient benefit from continuing the customer relationship until the aim of primary health care is attained, but not outreached. The aim is to reduce premature deaths, extend people's active and healthy life and ensure the best possible quality of life for all. This should be done by a mutual giving and fulfilment of promises (Grönroos, 1994; Grönroos, 2004). In public health care the given promise can be seen as the commitment to ensure the well-being of every citizen.

### **2.3.2 Service as a process**

As a result of Parvinen, (2003) the relation between the governance theory and processes exists apparently. Organization's processes are deeply embedded into the institutional and contextual environment, which governs the manageability of these processes (Parvinen and Kujala, 2004).

Public healthcare network gives treatment for its citizens suffering different types of medical or mental problems. A process is defined as a transformation of a set of inputs, which can include actions, methods, operations, into outputs that conform more or less the expectations and satisfy a customer need (Oakland, 1990). In this case the inputs are different kind of patients.

Grönroos, (2006) states that "A service as an activity can be defined as a process where a set of resources interact with each other and the customer aiming at supporting the customer's processes in a value-generating way." Success depends on the way the service providers align

their resources, competencies and processes with the customers' value-generating processes (Grönroos, 2004).

The service provider should understand first the customer's internal process that requires the solution that the service provider is supposed to offer. Understanding the needs of the customer is not enough, the service provider has to know, how the customers aspire to fulfil these needs (Grönroos, 2004). Only after this the elements of the service process can be developed. Applied to public health care this means that if, for example, a patient has broken a leg, plastering the leg is one transaction. The patient's internal process aspires for total well-being and being able to walk.

### **2.3.3 Tailored processes**

As Grönroos stated (2004) different types of services are tailored to customers depending on their needs. Because of that service processes, tailored to patients, vary noticeably. We have several ways to categorize processes and these come mainly from industry. According to Lillrank and Liukko (2004) health care processes can be classified as standard, routine and non-routine processes. The process types have originally been found from industry (e.g. Lillrank and Liukko 2004; Hayes and Wheelwright, 1984). Standard process type and the other types that can be found similarly are not stated in this paper, bearing in mind our research focus.

A routine process accepts two or more input varieties and can produce the same amount of output varieties. The variety is limited because the tasks are less intellectually demanding (Simon, 1997). Contrary to the routine processes, non-routine processes are heuristic and moreover intellectually demanding. In non-routine process input variety is larger than in routine processes (Lillrank and Liukko, 2004). There exists moreover more variation in output. Non-routine process can in addition consist of routine processes. Non-routine processes can mainly be managed by standards and quality systems, while most viable way to impact on non-routine processes is through organization culture, creation of professional pride, which should not only to focus on clinical wizardry (Lillrank and Liukko, 2004).

Determination of boundaries between routine and non-routine process is impossible. For example, new task may seem difficult and non-routine but soon a person notices that has done same kind of tasks before. Same processes can be seen as routine by some and as non-routine by some actors. Process is said to be in a chaotic state, when the target to be accomplished becomes obscure. (Lillrank, 2002)

### **2.3.4 Timing of the care**

Value for the customer can be created through preventive care. Needs of the customer and the fulfillment of those by the provider creates the demand-supply chain (Hoover et al., 2001). Demand-supply chain offers a wide range of possibilities to create value both to the customer and producer. Interrelation between suppliers' and customers' different chains is essential to understand in order that this framework can be utilized. Those chains are linked in the value offering point (VOP). The value offering point means the point, where the supplier fulfills the customer's demand. (Hoover et al., 2001)

Trust in appropriateness of service is emphasized. In general, value offering point appears in healthcare network when the patient turns to nursing workers. In order to create more value the point can be transferred backward in customer's demand chain. As an example of that we can mention screening tests, which can be used to detect diseases.

### **2.3.5 Synthesis of the customer process**

Planning patient's care should be comprehensive and target oriented in order to be advantageous for the customer. The care plan is made out in collaboration with the customer. This way the customer commits to the care process and sharing a common objective between both parties is ensured. The plan for the care process is made out in two phases. First, it is cleared up what kind of care the patient needs. On the basis of this, the demands that the care process states are concluded. It is important to notice that sometimes taking care of the patient may be too difficult for the person who is taking care of him.

## **3 Research process**

### **3.1 Research method**

Our research was carried out qualitatively. The meaning in this approach is to understand the phenomenon of the research on its own perspective (Järvenpää, 2003). We have followed an action research approach in our work. Referring to Arja Kuula (1999), is characteristic for action research that the targets of research participate actively in the change and research processes. Bases of the relationship between the researcher and the target of the research are cooperation and collaborative participation. Action research is problem focused and directed to practice.

The deductive processes concerning the research are abductive. Abduction is the process of adopting explanatory hypothesis. Abductive reasoning bases on the notion that new theory building is possible only when there is knowledge about which findings are already made in the first place. The guiding principle can be vague intuitive or it can be as well defined hypothesis. It leads to concentrating the findings in situations, which are expected to produce new theory or phenomenon. The concept of guiding principle is connected to logic in a way that experience cannot be doubted. Nevertheless, if this guiding principle is generalized experience, it can be doubtful notion. Abductive reasoning stems from empirical ground, but does not reject the existence of theory as a background. (Peirce in Taylor et al., 2002) Abductive reasoning is a continuous discussion between theoretical and empirical sources (Grönfors, 1985).

### **3.2 Data collection and analysis**

The paper is based on a case study of home care service network in the city of Vantaa. The data was gathered in spring 2006 using SimLab process simulation method (see e.g. Haho & Smeds 1997).

The data was gathered in the three phases. At first interview questionnaire was sent to 95 central workers in the healthcare network of Vantaa. About 40 per cent of actors responded. Next phase of our study included semi-structured interviews with 16 network actors representing Vantaa's elderly services unit. The interviews were recorded and documented. In addition to providing research data, the interviews were used to prepare a simulation day where 26 people from different sectors and organizations as well as one example customer were present. The whole simulation day was recorded on video tape. In this research the gathered data is analyzed from process and quality view points.

## **4 Empirical study**

### **4.1 Case description**

Services for the elderly in Vantaa include special health care, primary health care and social services and some other groups like private service producers. Special healthcare is arranged together with its neighborhood cities. Customers of the network are residents of Vantaa.

The objective of the research project that was carried out in Vantaa was promoting the fluency of activities in the network by introducing good methods and recognizing the parts of the network that needed developing. The aim was to clarify the roles of different actors and increase trust between them. In central role was the objective of enhancing customer orientation. In the beginning of the research a hypothetical thought of a central of geriatrics was presented. During the research process it was tried to solve with actors of the network if there was need for this kind of a central and what kind of a role it would have in the network.

### **4.2 Results**

Problems:

A big perceived problem in Vantaa was the amount of patients that exceeded resources. Referring to our research, the flow of patients into the network was increased by three factors that were caused by the organization itself. These demonstrations of our research offer a solution to the so called "revolving door syndrome".

- *According to the research the attitude of the care network towards the patient was mainly only from the medicalisation point of view. If the patient's non-medical problems are ignored causes this indisposition of the customer. This appears, for example, as short-time placements in different institutions, which causes a sense of not belonging to anywhere in the customer and ignoring loneliness of the patients. This was observed as a reason for a greater need of care in the future which could have been avoided if the problem would have been taken care of preventively or when the patient had first mentioned his problems.*
- *The interviewed agreed that geriatrics was a challenging sector of medicine. Sometimes the interviewed persons did not have time or competence for clearing up the patient's primary problem. They did not get support from the care network for the*

solution of the problem. On these occasions the care was focused on the patient's secondary problem and the patient had to resume care after only a short time.

- *It was observed in the research that because the need for places for patients was acute in the hospitals, the patients were not taken care of right to the end.* Because of this the patients resumed hospital care inside a short period of time.

#### Solutions:

There are two different ways of action that could offer a solution to the presented problems: paying attention to *the quality of the care process* and *developing planning of the patients care process*. Planning the care process becomes possible when the structure of the organization is modified in order to support it.

The most important demanded change is the changing of attitudes towards the patient. The care network should be encouraged to take a more comprehensive attitude towards the patient. In figure 2 is illustrated what we mean by the comprehensive care of the patient. It comprises of paying attention to all the sectors that are connected to the patient's quality of life (the vertical axis) and taking care of the patient thoroughly in the aspects that need care (horizontal axis).

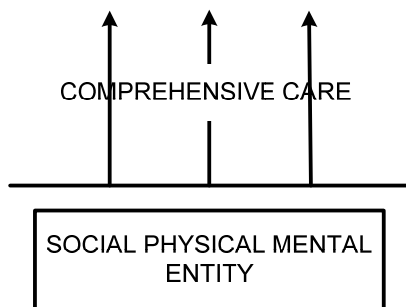


Figure 2: Comprehensive care to patient in all three aspects of life

It was observed in our research that the workers do not get systematic feedback on the success of the given treatment. This makes monitoring quality difficult.

The change of attitudes can be supported by structural changes in the organization. It appeared in our research that the network needs support in care of the elderly. The establishment of a central of geriatrics was proposed in order to fulfil this need. The central of geriatrics could have the central role of a consultant. All the actors of the service network would have a chance of consulting the central whenever help is needed. In addition to this, the central of geriatrics could receive patients for a more thorough diagnosis or if they need geriatric special. This would make the planning of patient's care process more target oriented and taking the care to its end would be possible. A central function of the central of geriatrics could also be guiding other parts of the care network in taking care of the elderly.

## 5 Building theories from case study

In this chapter we combine the perspectives of process thinking and quality that were presented in the theory chapter, with our own research.

### 5.1 Relationship process

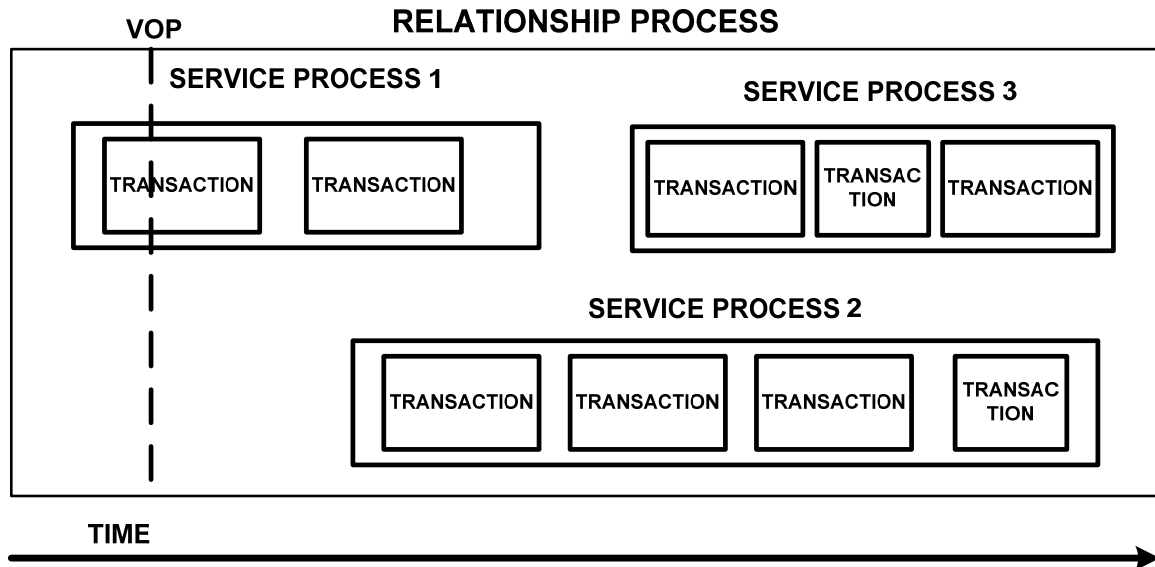


Figure 3: Relationship process

*Relationship marketing is focused on comprehensive customer relationships and fulfilment of the customer's needs.* According to our research, health care processes in public sector health care networks for the elderly could be seen respectively as customer relationship processes. Based on relationship marketing theory we suggest that relationship process can be seen as a process of identifying and maintaining customer and stakeholder relationships until customer's need is fulfilled.

The interaction with stakeholders is continuous but considering the relationship process, only interaction that aims for fulfilling customer's needs, is substantial. Relationship processes are composed of service processes which can be sequential or simultaneous as figure 3 illustrates. Service processes take place in the interaction between the customer and the producers of the service. The actual transactions as, for example, diagnoses and operations are parts of the service process. Value can be offered (VOP) to customer in many ways during the process. The patients may have some typical signs of risk group. In that case, the preventive care could be offered to them.

Relationship process should include that the service providers get information on the outcome of their work. According to our research a feedback channel is missing from the process as it is.

## 5.2 Quality in public healthcare

Our research demonstrates that the customer should be *taken care of comprehensively* and *the social, physical and mental entities of the patient should be equally revised*. According to conducted research comprehensive care would bring down the number of patients that resume care after a short period of time, because problems of the patients' would be taken care of thoroughly. Often diseases or problems in some area may have consequences that affect well-being concerning some other dimension. Thus, taking the three dimensions of health into account should decrease the amount of customers that have to resume medical, physical or mental care.

In the case of public sector health care services, the three aspects of quality described in chapter 2, technical quality or variation, functional quality and variety, have to be taken into account.

Figure 4 illustrates the relationships between dimensions of quality and their practical implications. In the light of our empirical findings we suggest that interaction between the customer and the producer of the service enhances communication and enables the creation of a relationship that encourages sharing the customer's objectives with service provider. Thus, paying attention to functional quality increases understanding of the customers' needs. When the needs are understood correctly, it is possible to fulfil the needs and guarantee technical quality. According to our study, taking technical quality into consideration should include the idea of reaching the goals of comprehensive care.

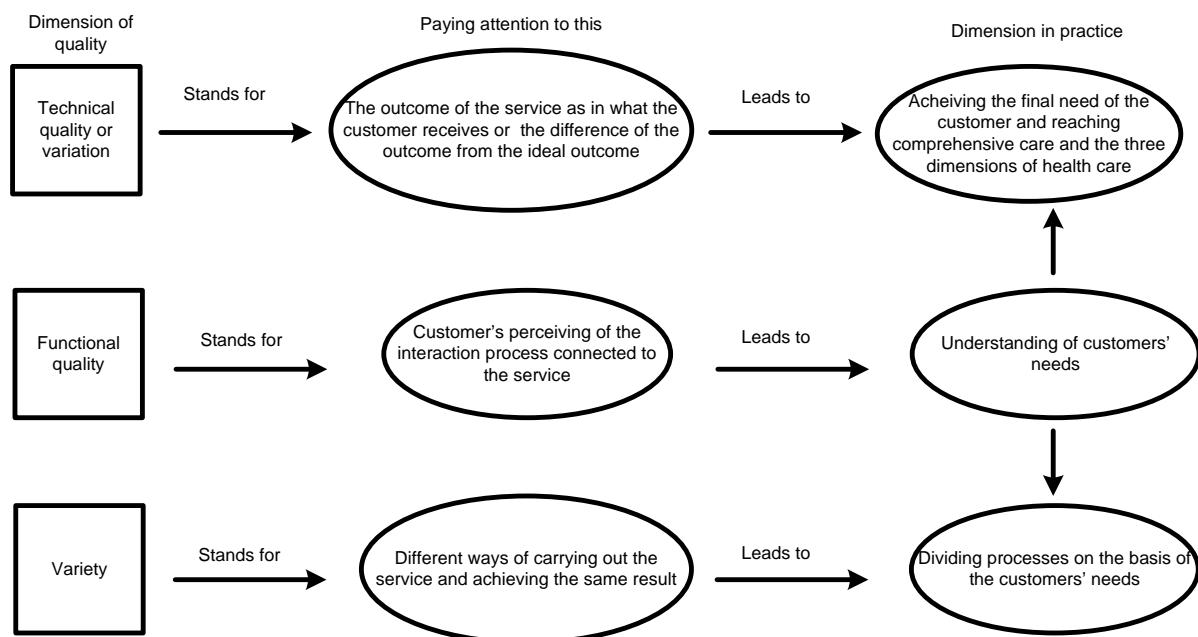


Figure 4: Relationships between quality and practice

Understanding the customers' needs is also important when considering the variety of the service. Knowledge on the customers' needs helps actors to offer suitable care for customers or understand that they cannot solve customers' problems on their own. Besides for the customer, variety is essential also for the producer of services in the case of public sector. Public sector does not afford to offer comprehensive services for all the potential customers.

*Services should be classified on the basis of the knowledge that the producer has of the customers' final needs.*

Customers need unforeseen treatment process and that causes requirements on the variety of services. We introduced two different kind of processes types, routine and non-routine, in the theory part of this paper. As earlier mentioned, defining the limit between routine and non-routine processes is not easy. For example, at first treating a patient may seem to be non-routine, but later on the caretaker may remember same kind of patient cases. Nevertheless, nursing workers obviously treat customers, whose diagnosing and treatment is noticeably demanding.

According to our empirical findings, there are non-routine processes that the nursing workers cannot solve on their own. In our case study a typical non-routine process occurred when the patient had multiple problems. Derived from the theory on processes and our research, we state that non-routine processes become unsolvable in situations where the available knowledge is not enough so that the actor could solve the problem independently. This leads to a categorization of processes to routine processes, solvable non-routine processes and unsolvable non-routine processes.

The challenge created by unsolvable non-routine processes can be solved through supporting unit, in our case geriatric center, which could offer special treatment and support the caretakers. Not only in a way that patients could visit in there but also consultant advices directly to the nursing workers. In this way Vantaa could offer comprehensive treatment to its patients. We draw conclusion that *routine and solvable non-routine customer processes can be managed by individual caretakers but in unsolvable non-routine processes guidance is needed*. Actors see the processes as routines of different levels: a routine to someone maybe an unsolvable non-routine process to another.

Nursing workers may face unsolvable non-routine processes and are not able to recognize the need of support that solving these processes would require. When the actor does not have the required skills, he often starts to treat something else than the real need is, the goal of the work is lacking. This phenomenon is called chaotic process. This causes resuming care.

The value created for the customer during the whole process is the objective of the relationship. The transactions and services are means to achieve the final objective. Considering the characteristics of public sector, the limited resources construct the boundaries of fulfilling the objectives of relationships in the public sector.

### **5.2.1 Supporting unit and interaction between other nursing workers**

According to our research, the actors of the network do not get enough support for their work. From this fact arose a need for a supporting unit (central of geriatrics). This unit could serve as a central of special area knowledge.

As we already mentioned the supporting unit could help the caretakers with demanding non-routine processes by consulting or diagnosing the customer. Moreover, when it gives support to the workers of the network in difficult non-routine processes its amount of knowledge increases. Thus support unit could give support as well by sharing useful information with the network's actors. Customer service can be increased by identifying and supporting people

who might belong to some risk groups. The caretakers should learn to recognize the critical signs that reveal those groups and the supporting unit could help them in that.

## 6 Discussion

The research constructed an ideal service process for the patient. The process is successful if all dimensions of quality are included. In a good customer process a comprehensive service plan is created with the customer. The way the patient should be served depends on the need of help. This need can belong to any aspect, the social, physical and mental entities, of the patient.

One part of the service network should be a supporting unit which helps the workers on demanding patient cases and shares information on geriatrics as well. The workers should get feedback about success of the care processes that they are a part of.

Our study contains the quality and process aspects. We constructed in this paper a new kind of quality aspect which can be used as a framework in any kind of service process. Correspondingly, the constructed process aspect suits to any service process of the public healthcare.

We recommend the following questions for further research subjects: How the workers evaluate the level of their own knowledge? How much the relationship process thinking lowers the costs in public healthcare network?

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