Value-Conscious Health Service Organisations

institute of Health Policy & Management

Inaugural lecture 18 December 2009

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ERASMUS UNIVERSITEIT ROTTERDAM
INSTITUTE OF
HEALTH POLICY & MANAGEMENT

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Inaugural lecture

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Colophon

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Value-Conscious Health Service Organisations

Dear Rector Magnificus,
Highly appreciated guests, colleagues, friends,

In the Beginning

The civilizations of Mesopotamia knew money and medicine at the time of the Law Code of Hammurabi, which dates back to 1700 B.C. The code addresses how the value of health may differ depending on personal circumstances (Johns, 1904):

> *215. If a surgeon has operated with the bronze lancet on a patrician for a serious injury, and has cured him, or has removed with a bronze lancet a cataract for a patrician, and has cured his eye, he shall take ten shekels of silver.*
> *216. If it be a plebeian, he shall take five shekels of silver.*
> *217. If it be a man's slave, the owner of the slave shall give two shekels of silver to the surgeon.*

The code of Hammurabi thereby presents the oldest example of value based pricing of health services. I have not been able to track down the exchange rates of the Mesopotamian Shekel to the Dutch currency for the year 1700 B.C. (perhaps because Western European civilizations didn't have a currency yet). The Mesopotamian Shekel however must be quite valuable in terms of the 2009 Euro, as for instance cataract surgery in the Netherlands is valued at around € 1500 (Oogziekenhuis Rotterdam, 2009).

If we travel from Mesopotamia eastwards through the orient, and 3700 years in time, we arrive at present time Aravind Eye Hospital. It has 5 locations in India and performed around 280.000 surgeries in 2008 (Gates Foundation, 2008). The cost of cataract surgery at Aravind is around € 15 (Prahalad, 2009),

approximately a factor hundred lower than the price in the Netherlands. A service price of € 15 is still too high for many of the Indian poor. Because of the extraordinary low cost, Aravind is able to provide surgery for free to more than 160.000 of a total of 300.000 customers (Aravind, 2009). Aravind makes yearly profits through the payments of the paying customers and charity donations. Value based pricing is still sustainable, almost four millenniums later.

More noteworthy than the pricing methods is perhaps the tremendous value delivered year after year by Aravind Eye Hospital by providing vision to hundreds of thousands of people who cannot cover the cost. It is widely admired, and recognized as a successful value-conscious health service organisation. Despite equally good intentions, many other health service organisations struggle to provide valuable services to their customers as becomes clear through a final introductory example (Silberner, 2007):

> *On January 19, 2007, U.S. National Public Radio interviewed George Halvorson, and Joanne Silberner, NPR reporter, who had just been to Uganda. Together they described developments in the Ugandan health system. From the dialogue I present to you the following excerpt:*
>
> *GEORGE HALVORSON: What had happened was a woman came into the hospital for a C-section, and the hospital gave her the C-section. And then when they passed the C-section, they turned to the husband and they said do you have enough money for the sutures so we can sew her up? And they said no, they don't have enough money. And so they said, well, we can't sew her up until you bring the sutures in.*
>
> *SILBERNER: In such a situation, a woman can bleed to death. The husband bicycled back to his village. He borrowed a baby goat, rushed back to town and sold it. But it was too late. Without the sutures, his wife had already died."*
>
> *Mr. HALVORSON: And the question was why would this happen? I mean how could a hospital be so heartless as to not do that?*

This monograph is about value-conscious health service organisations. It is about the value and values of the health service organisations like the Ugandan hospital which take part in serving the almost 1 billion people in Africa from a total health expenditure of roughly 45 billion UD dollars

(WHO, 2006). It is also about the value of health service organisations in developed countries such as the Netherlands, where total health expenditures exceed those of Africa, for a population which is 60 times smaller. In particular, this monograph is about research on value-conscious health service organisations. It addresses health services research directed at the health services in developed countries, where we find 10% of the global burden of disease. Around 90% of the global funding for health service research addresses the needs of this 10% of the population. Naturally, we also consider health services research which is aimed at 90% of the global burden of disease (measured in Disability Adjusted Life Years) occurring in low and middle income countries (Global Forum on Health Research, 2004), which currently receives 10% of the global health services research budget.

People die unnecessarily in hospitals in developing countries too. In the Netherlands alone, the number of avoidable death in hospitals alone has been estimated to be roughly between 1500 and 2000, in 2007 (Wagner & De Bruijne 2007). In the USA it has been estimated to be between 44.000 and 98.000 in 2001 (Kohn et al. 2001). In this monograph, I will however not take a national, or system point of view, and seek improvements through system reforms. I will let Paul O' Neill explain why, quoting a New York Times Op-Ed (O' Neill 2009) where he discusses the reforms currently being proposed by the Obama administration:

> *Health care reform seems to be on the way, whether we want it or not. So I have been asking questions about the various proposals. Here is a sampling.*
> - *Which of the reform proposals will eliminate the millions of infections acquired at hospitals every year?*
> - *Which of the proposals will eliminate the annual toll of 300 million medication errors?*
> - *Which of the proposals will eliminate pneumonia caused by ventilators?*
> - *Which of the proposals will eliminate falls that injure hospital patients?*
> - *Which of the proposals will capture even a fraction of the roughly $1 trillion of annual "waste" that is associated with the kinds of process failures that these questions imply?*
>
> *So far, the answer to each question is "none".*

Instead of seeking reform at the system level, he suggests concrete operational measures to the Obama administration, such as:

> *Ask medical providers to eliminate all hospital-acquired infections within two years. This is hardly pie in the sky: doctors and administrators already know how to do it. It requires scrupulous adherence to simple but profoundly important practices like hand-washing.... with these small steps, we would no longer have the suffering and death associated with infections acquired in hospitals and we would save tens of billions of dollars every year."*

Paul O Neill's views regard the Dutch setting as well. Health care professionals are generally reported not to wash their hands in the majority of required cases. Hand hygiene compliance rates of 23% at neonatal intensive care units have been recently reported (Van den Hoogen, 2009). Hospital acquired infections lead to thousands of deaths in the Netherlands, and a total cost of 400 million euro (Project Handhygieneredtlevens.nl, 2009).

Not all health service organisations are consistently successful at delivering value. Hammurabi was already aware of it, and his Law Code already contained various measures to eliminate bad service, in reverse order (Johns, 1904):

> *220. If he had opened a tumor with the operating knife, and put out his eye, he shall pay half his value.*
> *219. If a physician make a large incision in the slave of a freed man, and kill him, he shall replace the slave with another slave.*
> *218. If a physician make a large incision with the operating knife, and kill him, or open a tumor with the operating knife, and cut out the eye, his hands shall be cut off.*

Let us consider why health service organisations sometimes find it so difficult to deliver value and line out a research agenda that contributes to improving the value delivery along the way.

Customer value

Before considering how to deliver value, we first define it. We define it from a customer perspective. Customer is not just another word for patient. As a customer we consider a person who

1) procures a health service or product and
2) consumes the value personally and / or has it consumed by one or more persons he or she takes care of.

The value of a health service is not necessarily enjoyed by a single person, the patient. A health service can indirectly or directly benefit household members or other people in the community even more than the patient itself.

Economists and marketing researchers alike have studied the notion of customer value, and for our purposes it is convenient to adopt the service marketing approach that considers service value to be a cognitive construct. It assumes service value 'to involve a trade-off between a customer's evaluation of the benefits of using a service and its cost' (Bolton & Drew, 1991, Zeithaml 1988). Porter & Teisberg (2006) implicitly propose a very specific variant of this general notion by stating that value equals health per dollar. Their view requires to measure health, and the health improvement resulting from consuming a service. The service value paradigm of service marketing is more general, as it simply proposes that the cognitive construct of service value has three determinants, sacrifice, customer characteristics, and service quality. The value of a service is then defined as being the customer's evaluation of the surplus of the benefits that result from the service quality over the sacrifices needed to purchase and consume the service.

In comparison with the view of Porter and Teisberg's (2006), there are three advantages:

1. Sacrifice can be more generally expressed than just in monetary costs,

2. Quality is more general than outcomes, as will be discussed later,

3. The customer determines how the benefits, as they result from the service quality compare to the sacrifices, based on personal characteristics. Thus the value is customer dependent and not service dependent (the generic health per dollar value of a service doesn't exist.)

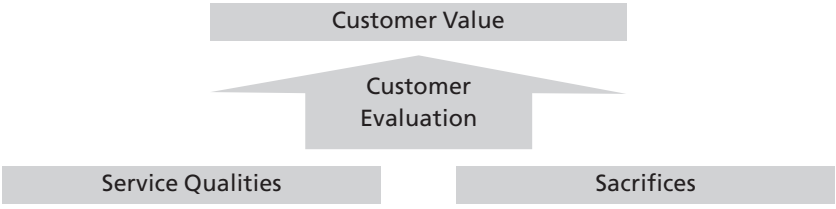

Figure 1: Customer Value in Health Care

Health services research has confirmed the validity of models in which quality, sacrifice and personal characteristics are modelled as determinants of service value (see e.g. Choi et al.2004). One easily finds personal evidence confirming the above model as well.

To some extent, the processes which determine the value a customer attaches to a service are exogenous to the service providers. For instance the alternative sacrifices a customer considers to make to purchase the service are hard to influence. These sacrifices do however depend on the price. Aravind Eye Hospital provides the service for free, and only asks customers to spend a day in the Hospital. The Ugandan hospital asked perhaps for more than the farmer and his wife possessed.

Service providers can also influence the personal characteristics which influence the evaluation of sacrifices and benefits related to a service. Education and social marketing play an important role, particularly in the domain of prevention. Cataract surgery and child delivery don't serve as examples of preventable health service needs, but high proportion of the present and future burden of disease is life style related. By consequence, services directed at changes in life style can prevent later health products and services consumption which occur in poorer health conditions and require larger sacrifices. As consumers learn more about prevention, they are clearly willing to sacrifice more for health. They refrain from behavior that badly influences their health, such as smoking and high calorie diets. Moreover, they increasingly procure healthy products and services, such as

low fat products, products with added omega 6, fitness club memberships, training devices, et cetera. Health services which provide value through cure and care are important, but the health products and services directed towards prevention are a dynamically developing area which is worthy of attention and research. Hand hygiene compliance is not only an issue for medical professionals when customers receive cure or care, but also for customers, to prevent infection. Interestingly, Unilever's subsidiary Hindustan Lever Limited, set up a large hand hygiene project in India, accompanying it's Lifebuoy soap product, to reduce diarrhea (Prahalad, 2009). Diarrhea causes 2.2 million deaths per year and the inexpensive solution of hand hygiene is known to be effective. As more than half of the Indian population doesn't wash hands at least once per day, starting to do so provides the value of improved health and the avoidance of medical cost and loss of income. An important part of the service provided has been to advance the knowledge of the rural Indian communities. Because of quality, the product offered by a private enterprise is valuable even for the very poor.

Quality

The first sentence in the definition the American Society for Quality gives for Quality reads: "A subjective term for which each person or sector has its own definition" (2009). In this monograph we adopt the first suggested definition it provides nevertheless: 'the characteristics of a product or service that bear on its ability to satisfy stated or implied needs'. Moreover, we assume that customers expect a product or service to satisfy the needs. Failure tot satisfy the needs therefore is a lack of quality. In health services research, the initial quality sought by the customer typically addresses a need to solve a health problem. We will refer to the extent to which a service solves a health problem as the technical quality. Complementary to technical quality, Gronroos (1983) proposes functional quality which considers the experiences of the customer during the service processes (Gronroos 1983). Customers typically have no difficulty assessing the functional quality, as it simply requires their subjective assessment of the service delivery process they have experienced.

In a classic paper, Parasuraman et al. (1985) have interviewed focus groups and brought an initial set of 10 dimensions of service quality down to the following set of 5 general dimensions of service quality:

1. Empathy,
2. Reliability,
3. Responsiveness,
4. Assurance,
5. Tangibles

These dimensions have been commonly applied in health services research. Bowers et al. (1994) have re-researched which quality dimensions are relevant for health services and found that assurance and tangibles matter less, but another dimension from the original list of ten, discarded by Parasuraman et al., must be added, in addition to the dimension 'communication':

1. Empathy,
2. Reliability,
3. Responsiveness,
4. Caring,
5. Communication.

Other researchers have confirmed or disconfirmed the adaptations of Bower et al. (1994) and, as concluded by Sower (2008) "current research indicates that in terms of service quality, the dimensions and the relative emphases on each are different for different industries." Certainly, for health services, much quality research is still waiting to be done.

Technical quality has dominated the quality paradigm in health services research. Much research is focused on clinical outcomes, and cost effectiveness is also mainly concerned with the results of treatment directed at cure. In many situations however, the extent to which clinical outcomes realized after the health services have been provided can be influenced is limited. Palliative care serves as a prime example of care where the clinical outcome is death, lowest possible in terms of qualies, yet health services can have tremendous perceived value. For chronic diseases, which form an increasing part of the total burden of disease, perceived functional quality may also dominate the customer value, and further research in this area, perhaps with a shift in the effectiveness paradigm, is called for.

Customers often lack knowledge to assess the technical quality of the health products and services delivered to them. They don't know which service best fits their needs, and they don't know what results to expect

from it. Perhaps the customer need is best interpreted as to be treated best possible, and hence to have the best outcome possible, rather than with a particular outcome in mind. Stronger yet, Bowers et al. (1994) find that outcomes are not a significant predictor of satisfaction. In the definition of Parasuraman et al. (1985), this means that outcomes are not a predictor of health service quality. Although, completely customer-centered, this makes their quality definition appear somewhat unfit for health services. Could it be that the satisfaction is guided more by the perceived assurance of the medical professionals than by the degree to which they have received evidence based appropriate health services? Is it the case that customers expectations are a stochastic entity, and that customers are willing to accept unfavorable outcomes as bad luck, if the perception of the service quality on the other dimensions is high? This hypothesis suggests that customers value information on outcomes, as it helps them to assess the service quality. (Not necessarily as the expected or average quality, other functions on the stochastic outcome might be more appropriate, as personal characteristics play a role in evaluation of value.) The Indian people benefitted from education about hand washing. Customers throughout the world benefit from better information regarding health services. What services exist to address their needs, and what are the possible outcomes of these services? Before selecting a service and a service provider they might subsequently consider the service provider specific probability distribution of the outcomes for each of the considered services. This brings us to the performance of health service providers.

Valuable health service organisations

Let us first recall the value based pricing introduced by Hammurabi and adopted by Aravind among many others. It's logic is depicted in Figure 2. A product or service has a certain customer value. This value is customer specific. Although current marketing practices allow distinguishing individual customers, customer values are typically assessed by segments, as was the case for Hammurabi and Aravind. The price set for a segment is subsequently bounded from above by the customer value of that segment. Classic logic further dictates that the service price exceeds the service cost.

Value based pricing is the principle of setting the price based on customer value rather than on cost – a notion which is quite uncommon in many

regulated health systems. In a competitive market, value based pricing is difficult to sustainably apply. If it leads to financial value creation, competitors will try to enter the market, and price based competition will lower the price. As customers prefer low prices, this price decrease may continue until the price equals the cost. In fact, service providers with low cost may set the price at levels which are below the service cost for less efficient service providers. Thus, service providers are likely to seek either cost leadership, or to differentiate so as to have a unique value proposition (Porter, 1998). (By consequence, the system reform of intensifying competition will result in few cost leaders and many differentiators. It will not necessarily make health services cheaper.)

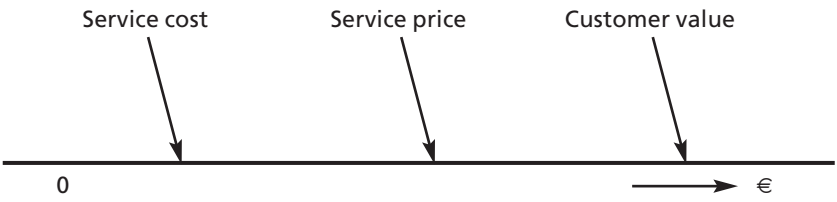

Figure 2 Value, Price & Cost

Through the service price charged to the customers, the customer value of the provided services enables to generate revenues. The operations and supply needed to deliver services entail operating cost. The difference of the revenue and the cost is called the operating margin (see Figure 3). The capital that is needed to start and operate a health service organisation must be acquired from capital providers, who typically ask interest or dividend. The difference of the operating margin and the cost of capital employed will be referred to as the financial value created. If this value is negative, we say the service provider is value destructive. It is not able to pay the capital providers because the total cost to create the services delivered to the customers exceeds the revenues. Should such a situation occur over a longer period of time, it leads to bankruptcy. If the financial value created is positive it leads to an increase in the value of the health service organisation, which in case of a private organisation is beneficial to the shareholders.

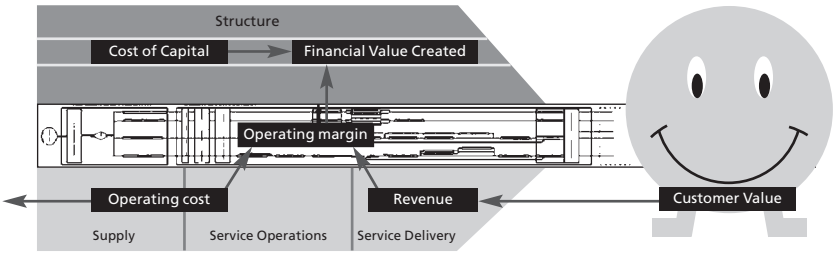

Figure 3 Value delivery and value creation

This simple value model suffices to start the discussion on value improvement. The classical understanding is that organisations that are successful at providing customer value, are capable of generating shareholder value. Thus, private enterprises benefit both customers and investors. This requires however, that the service price exceeds the service cost, which is not the case for Aravind. Aravind, a for profit health service provider, deliberately chooses a value based pricing strategy, not so much to extract more money from customers who attach more value to its services, but to provide it to customers who attach a value to the service that is below the cost price. To be able to do so, Aravind designed it's services and service operations so that it's business model in which more than half of the patients is treated for free is sustainable. Of course this requires very low service cost. It must be mentioned that at the same time, Aravind has an excellent record on adverse events, as illustrated by the fact that they outperform the British national health service (Manikutty & Vohra, 2004). Through it's operational excellence, Aravind has been able to deliver world class quality eye surgery, at cost levels that have seemed absolutely unattainable. Moreover, it has no waiting lists. Customer show up without appointment, are operated and dismissed the same day. A meal is provided. Both technical and service quality are world class. Quality is free (Crosby, 1979).

As a corollary, approaches which are based on the assumption that quality improvements cost money direct value improvement efforts in the wrong direction. This observation is in the spirit of the statements of O'Neill quoted above. Quality improvements are known, and will lead to cost reductions. Organisations sometimes lack the capability to realize the value improvement. Edwards Deming (1982) addresses the managerial consequences:

"The worker is not the problem. The problem is at the top! Management! Management's job. It is management's job to direct the efforts of all components toward the aim of the system. The first step is clarification: everyone in the organisation must understand the aim of the system, and how to direct his efforts toward it. Everyone must understand the damage and loss to the whole organisation from a team that seeks to become a selfish, independent, profit centre."

The problem Edwards Deming identifies is build in in many health service organisations. In the Netherlands, for instance, the relationship between medical doctors and hospitals is often via a contract in which the value incentives of the medical doctors and the hospital are not aligned, nor are they aligned with the customer value and the customer needs. Hence, the system, the organisational structure of hospitals, is a build in problem that prevents progress, prevents valuable health services, and prevents the health improvement customers need.

At present, many health service organisations are making organisational changes by adopting the concept of clinical pathways. Clinical pathways are operating procedures which describe the complete sequence of service operations required to deliver a service to a customer. Thus, clinical pathways shouldn't be restricted to medical disciplines, or hospital departments, but assume an integrated organisation instead, a customer orientation, instead of a functional orientation. Clinical pathways can certainly be a step towards removing the quality problems identified by Edwards Deming. Successful implementation requires a fundamental change in the structure of the organisation, which can result in resistance and low acceptance of the clinical pathways. Evidence shows that clinical pathways have not always lead to service improvements (Panella et al. 1993). Research regarding the design of the structure and the planning and control systems on the one hand and the value created on the other hand is called for.

The never ending pursuit of making an organisation excel in delivering products and/or services that satisfy customer needs is known as quality management. The ideas developed by Deming, Crosby and the like for manufacturing companies have become widely accepted as Toyota and other companies demonstrated that they yielded higher quality at lower cost. Organisations that didn't match the new standards, lost revenue and stopped creating financial value. Total quality management has been

succeeded by six sigma, and lean management. Lean management explicitly targets to efficiently perform those activities which generate valuable products and services to the customer, and refrain from any other activity. It has been adopted by many organisations throughout the globe, in manufacturing and in service, among which is an increasing number of health service providers.

Dr. Venkataswamy, the founder of Aravind Eye Hospital, often spoke of Aravind's McDonald's model. He was far from being ashamed to say that he learned from the service excellence principles of the world's leading fast food provider. Dr. Venkataswamy also understood that combining high quality and low cost services requires more than the efforts of Aravind alone. It relies on a network of service providers whose products and services play a crucial role in achieving the low cost of service, and indeed in providing customer value. Together these organisations form the value chain in which Aravind takes part. As end customer value therefore depends on the collaborative effort of organisations in the value chain, we consider them more extensively in the next section.

The value chain

End customers consume the value of products and services. This value is created by the primary processes of a network of organisations. For a particular product or service we thus define the value chain as the set of all organisations that directly contribute to the value of a product or service consumed by an end customer. For many industries it is the case that the networks of organisations involved to produce the end customer products or services have become considerably more complex over the last 30 years, as a result of globalization and out sourcing. Around the turn of the millennium Boeing had 30.000 suppliers (Arkell 2005). Moreover, the number of products and services in the networks has increased due to customisation, and the products and services have much shorter life cycles. A large contemporary retail store may have more than 100.000 different products on the shelves. Value chains that have been able to effectively serve end customer markets in the global market place, with an ever changing variety of customized products have often outperformed their counterparts. The companies in these successful value chains have enjoyed the benefits and been able to grow profitably. Walmart serves more than 100 million customers weekly in the USA alone, and has stores in Mexico, Russia, China

and a dozen other countries (Walmart 2009). It employs more than one million employees. Figure 4 depicts a value chain, using the organisational model of Figure 3.

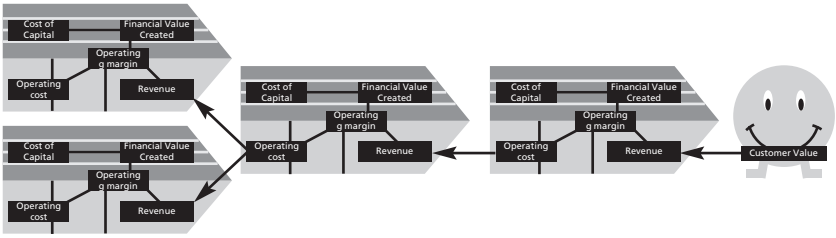

Figure 4: The value chain

For products the value chain representation very much resembles the structure of value added steps, i.e. the production sequence. Value chains which produce tangible products are usually referred to as supply chains. For services the value chain may have a linear order as well. Many cure processes have a well defined sequence of process steps, and the service organisations which run the processes consecutively add value according to the place their processes take in the overall sequence. This value chain paradigm resembles the model of Porter and Teisberg (2006), depicted in Figure 5.

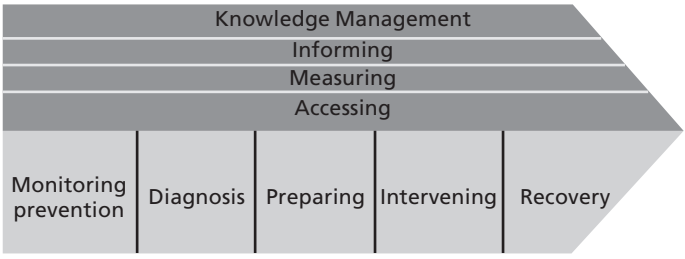

Figure 5: Porter and Teisberg's Value Chain

Although Porter and Teisberg (2006) emphasize time and again that health service value chains should compete for end customer results, they actually propose not to form networks of organisations which together produce the end customer value. Instead they advocate to form integrated practice units (IPU's), which comprise a complete value chain for a disease. Certainly this solves the problem of misalignment in the value chain, which we will further discuss in the next section.

Two distinctions between products and services that are important in the value context are the following. First of all, service delivery often requires that the end customer is in the process, not only in the final process step, but in several of the preceding steps as well (as for instance visualized using service blueprinting techniques). Next, the customer relationships in which services play a role are often not a relationship in which a one time purchase plays a role, but a relationship in which the service value chain and the end customer repeatedly interact. Such a relationship applies to services for chronically ill patients, who might repeatedly interact with organisations in a value chain which might rather be viewed as a service value network. The Chronic Care Model, as developed by the Maccoll Institute (1998) therefore chooses a different representation to depict the customer and the organisations which provide valuable chronic care services (See Figure 6.)

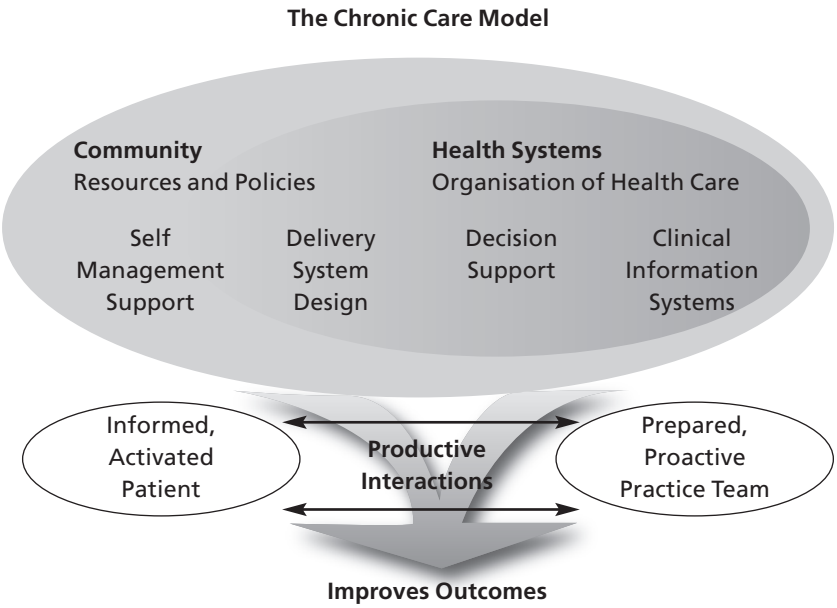

Figure 6: The CCM Model

The chronic care model explicitly addresses the fact that the customer interact with the processes to realize the service delivery. It serves as a prime example of the notion that a service is often a co-creation of the service provider and the end customer. Not only does the Chronic Care Model assume an active role for the patient in the value creation, it also addresses the contribution of household members.

Although health service organisations are typically part of health service chains, the structure and volumes of these chains are typically quite modest, as are the number of different products and service involved. The many laws and regulations that exist in health care however, do add considerably to their complexity. In many countries, there is much national legislation and regulation, in addition to international laws and treaties, which primarily exists for a noble purpose: people have equal rights for access to affordable health services of high quality. When also taking into account the medical devices, instruments, pharmaceuticals et cetera, we conclude that health service value chains form a network of global chains serving a wide variety of customers in different countries, which typically consist of a mix of profit and not for profit organisations and a diverse collection of laws and regulations that the various organisations in the value chain are exposed to. In∞numerous cases, regulations cause misalignment which leads to sub-optimizations that are end customer value destructive. Certainly, integrated practice units cannot suffer from this anomaly. The current initiative of the Dutch ministry of health to introduce 'keten DBC's', (chain DRGs), as per 2010 for certain chronic diseases is also an interesting solution direction to prevent misalignment. It does however assume value chain knowledge and skills of health service organisations that are until now not well developed in the Dutch health service industry. This initiative certainly calls to be researched.

One way to provide accessible and affordable health service of high quality is to offer them publicly and for free, i.e. cover the cost via taxes. Another possibility arises by offering an additional health service, the health insurance. From a value chain perspective, insurance is not that different from a tax based public system. Customers pay a periodical fee, in exchange for which the costs of health services are covered. The insurer or government pays the health service providers for the provided services. As a consequence, government and/or insurance companies position themselves between the customer and the health service provider. End customers are now customer of the insurance company, who in turn purchases the care for the customer from the health service organisations. Thus, the health insurance providers form an extra layer in the value chain. A layer which doesn't add value by improving the health service quality, but by substituting the stochastic monetary sacrifices of health services, which have large upward variance, by an affordable periodic fee.

The added value of insurance follows from the continuation of the radio interview on health care in Uganda (Silberner 2007):

> *SILBERNER: Today, the situation has much improved in the small town of Buhweju, where Halvorson heard that story. There's something new there called a health cooperative, or co-op. If the woman had been a member, she would have gotten the sutures. That's because her co-op would have been making regular payments to the hospital, so the hospital could have kept its supply cabinets stocked....*

A major consequence of the role of insurers and or government in the value chain is that the direct relationship between the sacrifice of the customer and the quality of the service provided by the service organisation has disappeared. The customer now has a direct value relationship with the intermediary organisation where the sacrifice is primarily a periodic fee and the service quality is by and large still the value of the health services. The intermediary organisation engages in a value relationship where it makes a financial sacrifice to procure health services for its customers, and enjoys the benefits of their periodic payments. This value chain structure is not unique for the health service industry; insurance-like value propositions are also found in other value chains, e.g. maintenance and repair services, or ICT services. ANWB provides road side services to more than 4 million Dutch members in the Netherlands and abroad, with a yearly licensing fee and a request dependent cost structure, using a business model which closely resembles the model of a Health Maintenance Organisation. Some of it's competitors use models which are akin to the model of Dutch health insurance companies (Huigenbosch et al. 2008).

Insurance companies and governments seek solutions for groups of customers, if not populations, not just for individuals. They seek simplifications and standardisation to manage the service provisioning and value delivery at an aggregate level. It is difficult to give priority to personal health needs and service value assessment of individual end customers when they may have consequences for entire groups, or negatively impact service delivery to others. Hence the challenge arises to design, manage and improving value chains which perform satisfactorily at the aggregate level, while being able to address the individual health needs of the end customers. This challenge is omnipresent in health service organisations. One of the reasons why hand washing compliance is low, is that it takes time and there are sometimes too

few medical professionals to provide all required care and wash hands whenever required. Somewhere cost avoidance at the organisational level got priority over the safety of the next patient. Needless to say that the overall cost most probably have increased rather than decreased due to the local sub-optimization.

Edwards Deming's view (1982) that management's job is to direct efforts towards the aim of the system, and to avoid the damage and loss from a team that seeks to become a selfish, independent, profit centre applies to value chains just as it did to organisations. The success of companies like Toyota, Walmart, and Dell lies in their ability to effectively align a value chain around customer value. In particular they have been able to deliver customized products and services to millions of end customers. Without claiming they are icons, we observe they have created supply chains that provide higher customer value than their competitors at lower cost. At present, value chains compete with value chains at end customer markets.

Within supply chains we see that knowledge about best practices is being captured in the form of process templates. The Supply Chain Council, a not for profit organisation, maintains the supply chain operations reference (SCOR) model (Supply Chain Council, 2009), which enables companies to apply proven business processes, rather than to reinvent the wheel. Moreover, ERP systems contain these templates so that the information needed to manage and improve the supply chain processes is collected and at hand when needed. For the service industry, in particular for health service industry such process templates are lacking. The model of Porter and Teisberg (2006) and CCM are far from providing evidence based process templates. As a result, health service organisations continue to reinvent the wheel, e.g. when defining clinical pathways, and have great difficulties supporting the processes in the value chains with appropriate information systems. Can we expect health service organisations to start leading their health service value chain in the near future and improve end customer value, in the way Toyota, Dell, and Walmart achieved in their industries? Is it not happening because system reforms are needed first? It is already happening. Aravind is a private organisation, owned by a non-profit trust, that didn't wait for the Indian government to change the health system to come up with a radical value improvement. And to produce technical service quality that goes way beyond compliance standards. The founding of the cooperation to cover medical cost in the Ugandan example is another

initiative to improve care beyond what is demanded or promoted by the system. These organisations go much beyond responding to a system of laws and regulations, to control cost and quality. As Edwards Deming said, you can't inspect quality into a product. Paul O' Neill phrased it as follows:

> *What policymakers tend to forget is that only the people who do the work can make this happen. Legislation can't do it, regulation can't do it, infection-control committees can't do it, financial incentives and disincentives can't do it. But excellence is possible, and it has been demonstrated.*

Value-conscious health service organisations

What then, makes organisations excel? We have seen that excellence means first of all excellence in providing end customer value. In health care, end customer value is provided through health services, and hence depends on the dimensions of the services that define its quality and on the sacrifices a customer has to make to purchase the service, in particular the price. The quality and the price are created by the primary processes. Thus, the management of the primary processes, health service operations management, is key to deliver quality. It is of prime importance to understand how the performance of the processes affects the critical to quality dimensions of the health services. This understanding can subsequently be turned into performance indicators, which allow to manage the operations systematically. Van de Klundert et al. (2010), and Huigenbosch et al. (2008), show how setting appropriate responsiveness indicators and optimizing the value chain accordingly leads to value improvements where responsiveness increases and cost decreases. A fundamental improvement in their approach is to not to consider averages, not to manage at the aggregate level, but to consider performance indicators that directly relate to individual customer dissatisfaction. In practice, they contributed to a efficiency improvement of 14 percent, as required to stay competitive. As value chains have hardly received attention in health services research, research is needed on descriptive models and optimization models to advance science and improve the value delivered by health service chains in practice.

The operations, the processes that need to be optimized exist in organisations who take part in value chains. We have learned that value improvement

entails to improve the value chain as a whole, and not to engage in sub-optimization. Just as a reduction in cost may entail a loss of quality, or extra quality for one patient may go at the loss of quality for another, it is not necessarily the case that the overall performance of the value chain improves, if one of the organisations involved makes a local improvement to its processes. Cost reduction by one organisation can easily lead to an even larger cost increase by other players. Hospitals that dismiss their patients too early are likely to cause additional cost at recovery service providers. Medical instruments or prostheses held in consignment stock by a hospital, lead to cost reduction by the hospital, but entail higher cost for the supplier. As the supplier typically has a higher cost of capital than the hospital, this increases the total value chain cost, and thus the cost of end customer service. Value-conscious organisations always consider value improvement from the viewpoint of the end customer. In their role as direct supplier of end customer value, insurance companies in the Netherlands must translate the customer needs into service value for the other value chain partners. More so, since health insurance providers are capable of assessing technical service quality, which end customers often are not. This is an important value addition they can provide, and we are currently researching methods to realize it.

Value-conscious service organisations also understand that they can only be valuable to others if they create financial value for themselves. To create value for an organisation in a value chain context is to be able to pocket some of the added value of the value chain as a whole. It requires not to be squeezed between low prices paid by direct customers and high prices set by direct suppliers. As Porter (1998) explains this can be achieved by either a cost level that is lower than the cost level of the competitors which form a substitute for the supply chain, or by differentiating and providing the value chain to deliver higher value or lower cost at the market of end customers. Organisations which manage to do so sustainably add value to the chain and are well positioned to pocket a share of the value added by the value chain as a whole. Value-conscious organisations therefore continuously seek to sustainably create competitive advantage for the value chain at the market of end customers. They improve value not at the cost of the value of their value chain partner, but by growing the value created by the supply chain as a whole.

As end customer markets are dynamic, products and services change, and process technology changes, value-conscious service organisations develop competences that go beyond managing current operations. Sometimes, such sustainable competences are the result of strategic assets regarding location, access to resources, or patents. For service organisations however, human resources, people, are typically a major strategic asset as sustainable value creation results from the capabilities of the employees. For this reason, among many others, human resource management is of strategic importance for health service organisations and for researchers who aim to develop understanding about value improvement.

In researching why 'some companies make the leap and others don't', Collins (2001) derives the Hedgehog principle (see Figure 7), 'a simple crystalline concept that flows from deep understanding about the intersection of the three circles'. The hedgehog principle is followed by companies that made the leap from being a good company to being a great company. Great companies have the discipline to stick to their hedgehog principle and refrain from business activities that don't match. Good-to-great companies built a consistent system with clear responsibilities, but they also gave people the freedom and responsibility within the framework of that system. They hired self-disciplined people who didn't need to be managed, and then managed the system, not the people, Collins echoes after Edwards Deming. Through our value chain analysis we have already discussed operational excellence and value creation, in other words 'best in the world at' and 'economic denominators'.

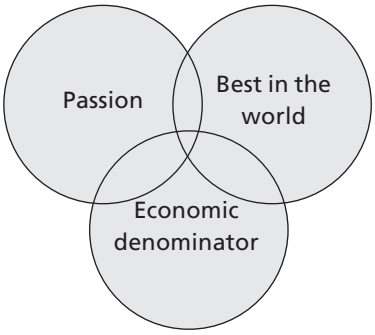

Figure 7: The Hedgehog Concept

Let us explore the passion of organisations by addressing greatness in the context of the social sector. Can not for profit organisations be great? Max Havelaar has grown to be the world's largest certification organisation for sustainable food, from a 'passion to fight poverty and injustice' (Max Havelaar, 2009). Another Dutch organisation which can be viewed to be great is the Royal Concertgebouw Orchestra. Passionate about their music, elected to be the best orchestra in the world (Hoyle, 2008), and economically sustainable. The Royal Concertgebouw Orchestra attained greatness over a long time period in which many other Dutch Orchestras struggled to survive. Therefore, we must conclude that it hasn't been the national system that explains the performance. Just as the difficult industry conditions cannot explain why South West Airlines delivered 1000 US dollars shareholder return in 2002 for every dollar invested in 1972, while United Airlines went bankrupt (Collins, 2005). Let it be noted however that successful companies typically don't have financial value creation as a primary strategic objective. Profit is like oxygen, food, water, and blood for the body, they are not the point of life, but without them there is no life (Collins & Porras, 1994). These research findings strongly suggest that health service organisations shouldn't blame the system for poor performance, nor the lack of private ownership. Whether organisations succeed to sustainably create value is to a large extent up to them. It is up to management to organise people around a common purpose, shared values beyond profit, and improve step by step towards a health service organisation that sustainably delivers great value. It is management's job to create value-conscious health service organisations. Organisations that are not misguided by changing financial incentives in national health systems. Organisations whose commitment to quality of care, in particular safety, goes much beyond inspection and audits.

Current research findings provide a very limited understanding of value-conscious research organisations and how to make the leap. Innovation, implementation, improvement in organisations and in the value chain are research domains where our scientific understanding needs improvement. Why are even simple and successful improvements sometimes not sustained? Many questions still need to be addressed.

It still remains to answer the question posed by George Halvorson regarding the turn of events in the Ugandan hospital mentioned in the introduction (Silberner 2007):

> *Mr. HALVORSON: And the question was, why would this happen? I mean how could a hospital be so heartless as to not do that? And what the nurse explained was that the hospital only have a couple of sets of sutures, and if they give them away free to the next two patients, then every patient after that would die.*

Fortunately, the health cooperation provided a value chain improvement that solves the problems, and enables the hospital to deliver immense value to end customers. As explained in the introduction, there are numerous equally important problems waiting to be researched and solved in developing and developed countries alike.

Ladies and gentlemen, it is my privilege to accept the chair in Management & Organisation of Health Services, and to work with the department of the same name and the other departments of the Institute of Health Policy & Management. I am grateful to have been given this opportunity and will give my best to contribute to us becoming a value-conscious health service research organisation.

I have stated.

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The concept of 'Value-Conscious Health Service Organisations' discusses value in the context of how health service organisations and how they can consciously improve their value creation. Customer value serves as the point of reference, relating to quality of care, and the financial and other costs involved in the health services provided to customers. Second, value consciousness requires to understand the added value of the organisation in the interplay with other health service organisations, in the health service chain. Third, value-consciousness requires the organisation to be financially sustainable; only healthy organisations can provide health services. The inaugural lecture addresses characteristics of organisations that consciously excel in delivering valuable health care.

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