

**Paper for the IMP 2007 conference**

**Understanding health and social care networks: A value-creation framework**

**Keywords: health and social care, networks, value-creation, network management**

**Work-in-progress paper**

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## Understanding health and social care networks: A value-creation framework

### Abstract

This conceptual paper investigates networked value-creation and its management in the field of health and social care. First, we present two basic strategies to address efficiency and effectiveness challenges in the field, and discuss how networked value-creation is linked to these strategies. Second, we introduce a value-creation framework for analysing systematically different types of value-creation as well as boundaries between them. Finally, we conclude the paper with a brief discussion of the managerial challenges within and across the different value-creation types in the health care context.

### 1 Introduction

The challenges in the health and social care sector are plentiful all around the world. The biggest pressure is due to the ageing of population. In Europe, in the United States, and especially in Japan, the number of elderly is increasing both in absolute and relative terms. The sheer increase in the number of the cared-for puts pressure on the care resources. Concurrently, the elderly are getting more affluent and knowledgeable about their health and are demanding higher quality and increased scope of services. These factors, among others, put pressure on care providers in terms of both care efficiency and effectiveness. We thus have a dual challenge of simultaneously reducing care spending and improving care quality.

#### *1.1 Strategies to improve efficiency and effectiveness in health and social care*

In most European countries at least two primary strategies have emerged to tackle the challenges presented by the ageing of population. The first strategy is to postpone, or reduce, the need for in-patient elderly care by increasing resources in out-patient care. It is believed that by treating people as out-patients, e.g. at home, and thus postponing institutionalization, we can both (1) decrease overall care costs, as out-patient care is suggested to be more cost-efficient than in-patient care, and (2) increase service quality, as the elderly themselves prefer to live at home care compared to an institution (Stakes 2006, 8-9; Vaarama et al. 2001, 7-8; Kinnunen 2002, 6; MSAH 2001).

The second strategy is to enhance care integration (Stakes 2006, 8-9; Mur-Veeman et al. 2003; Vaarama et al. 2001, 11-14; MSAH 2001). Integrated care can be defined as the processes of coordination to achieve seamless and continuous care, tailored to patients' needs with a holistic view of the patient (Mur-Veeman et al. 2003). Care integration may be vertical and horizontal. Vertical integration involves the coordination of care paths as the clients pass through different treatments within and between different care units and organizations (e.g. Katsaliaki et al. 2005). Vertical integration aims both at cost-savings (e.g. lower transaction costs) and increases in care quality (e.g. shorter waiting times for the patient). Horizontal integration, in turn, involves the coordination along the care scope (e.g. Kinnunen 2002, 23-24), namely different types of care activities such as those of health care providers and social care providers. It is believed that a better coordination of the care scope will both (1) increase service quality as the patients will receive an optimal palette of services tailored to their individual needs and (2) decrease service costs through a better coordination of the care scope, thus eliminating resource misuse.

These two strategies – postponement of institutionalization and care integration – are not mutually exclusive. For instance, the careful coordination of care paths from out-patient care to in-patients care, and back, may help to postpone patient institutionalization, as for instance home care patients may sometimes need a brief period of rehabilitative in-patient care in order to stay at home longer.

## 1.2 *Networks and network management defined*

Research on business networks shows that networked value creation may provide some help with the dual challenge of improving both efficiency and effectiveness. Overall, it has been shown that networking may offer benefits in terms of operative efficiency, learning and innovation, and access to resources and markets (e.g. Podolny and Page 1998). In fact, numerous studies show that the successful development, production, and delivery of high-technology products and services require cooperation and joint efforts of multiple parties, including producers, customers and various institutions (Doz et al. 2001; Möller et al. 2005; Powell et al. 2005).

A network may be defined as a group of autonomous actors that have repeated, enduring relations with one another in order to achieve some stated or un-stated objective(s), while lacking a legitimate authority that arbitrates and resolves disputes that may arise among the actors (Podolny and Page 1998; see also Ortiz et al. 2005). Key qualifiers in the definition are *autonomous actors* and *enduring relations*. These set networks apart from hierarchies and markets; hierarchies involve authorial relations between non-autonomous actors, and markets involve non-enduring relations between autonomous actors.

Network management, broadly conceived, can be defined as improving the ability of the network to operate towards accomplishing its varying objectives. At one level, network management involves restructuring the existing network, and at another level it involves improving the conditions of cooperation within the existing network (Kickert and Koppenjan 1997, 46-53; Klijn et al. 1995). The former mode – restructuring – involves activities such as adding or removing actors, resources or value activities from the network as well as changing the ways in which the network relates to its environment. The latter mode – improving conditions of cooperation – involves various activities taken to facilitate cooperation between network actors so that the network would accomplish its goals.

## 1.3 *Benefits and challenges of networking in health and social care*

There are evidence of networked value-creation also in the field of health and social care. These range from multi-hospital networks to independent physician networks, and from wide-ranging community-based networks connecting various health and social care providers to more focused, special-capability networks such as emergency care networks (e.g. Lega 2005; Page 2003; Kassler and Goldsberry 2005; Provan et al. 2005).

Networking in health and social care seems to provide benefits similar to networking in other fields, including operative efficiency, economies of scale, service quality, access to resources and markets, learning and innovation, financial stability, power of influence, and legitimization (Lega 2005; Ortiz et al. 2005). For instance, Rosko and Proenca's (2005) study results suggest that hospitals engaging strongly in service networks are more efficient than hospitals that do not use networks for service provisioning.

This implicates that networked value-creation is linked also to the two key strategies of improving cost-efficiency and service quality (i.e. postponing patient institutionalization and integrating care) in the health care sector. For instance, postponing patient institutionalization, or moving resources from in-patient care to out-patient care, involves the coordination of at least two types of inter-organizational relationships. On the one hand, coordination between long-term out-patient care and acute in-patient is necessary to improve the chances of postponing institutionalization whenever an out-patient needs some acute in-patient care. On the other hand, effective long-term out-patient care necessitates the coordination of multi-professional teamwork, or otherwise a lack of a specific care competence (e.g. social care) may render useless the accomplishments in other areas of competence (e.g. health care). In similar vein, care integration is dependent on smooth cooperation between not only different care units (e.g. between long-term out-patient care and acute in-patient care) but also between various health and social care professions.

Not all attempts at networked health and social care provisioning reach the desired results, however. The ability of integrated care networks to postpone patient institutionalization from home care to in-patient care and thus to provide cost-savings, for instance, has been questioned (Kinnunen 2002). Likewise, a study by Ortiz et al. (2005) shows no statistically significant improvement in financial performance of health centers participating in networks during a three-year observation period.

There are of course many reasons for why networking does not always produce the desired results. These reasons may, for instance, relate to structural and functional challenges of health care networking (Friedman and Goes 2001). Mur-Veeman et al. (2003), for instance, show that contradictory interests,

differences in professional and organizational cultures, power relations, and general mistrust between and within different actor groups may hinder the development of integrated care networks.

Moreover, Ford et al. (2004) argue, having a game theoretic approach, that a mere cooperative intent of network participants is not enough to hold a care network together, but maintaining such cooperation requires knowledge sharing among participants of their values and motivations, formal contracts, and structuring cooperation in a way that benefits all participants individually and collectively. Further, they argue that funding organizations are key facilitators of such cooperation, as they are in the position to increase knowledge sharing among the participants, promote the formation of legal contracts, and structure the cooperation to benefit all parties through underwriting collective coordination costs and providing collective technical assistance at the network level (Ford et al. 2004). Generally speaking, realizing the benefits of networking requires comprehensive pre-networking analysing and planning as well as solid implementation (Lega 2005).

Despite these studies, evidence on the challenges of networked value-creation in the field of health and social care is still sporadic. What we need is a systematic way to map these networks and their challenges. We need to especially map them in terms of the two network management levels, i.e. structuring the network and improving conditions of cooperation. Therefore, we need tools to map (1) the structure of the value-creation networks in the field of health and social care and (2) the boundaries within and across different types of value-creation where there is room for improving conditions of cooperation. In this paper we aim to develop such a systematic framework through an investigation into different dimensions of value creation in health and social care networks.

## 2 Networked value creation in the field of health and social care

Any value-creating network can be defined as a set of activities, actors and resources (e.g. Håkansson and Johansson 1992). Within this definition, actors are those who perform activities and control resources, and activities are the usage of resources to change other resources. Following this basic framework we have outlined a general model of value creation within the field of health and social care (see Fig. 1).

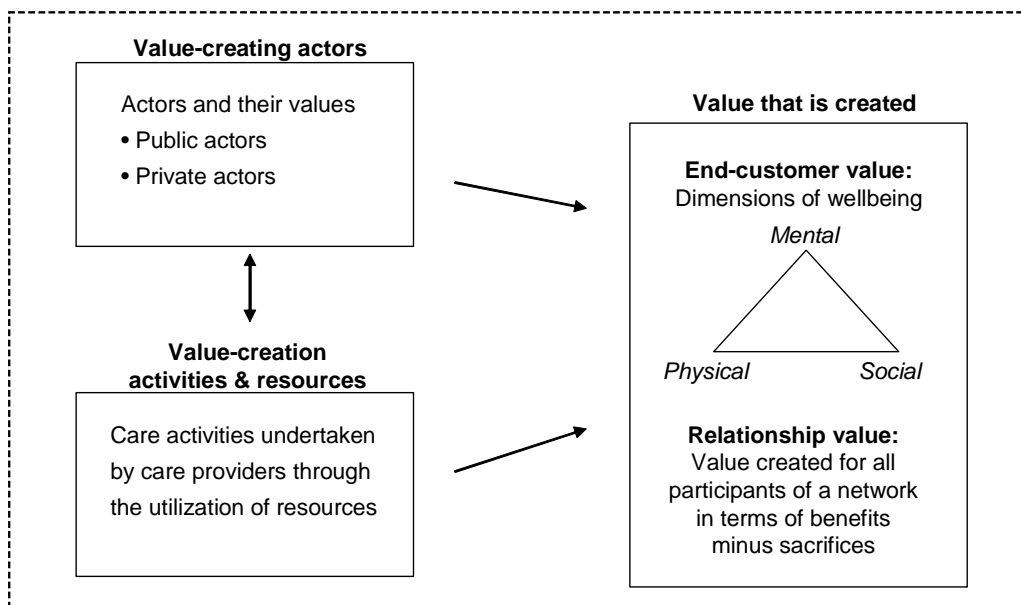


Figure 1. Value-creation in the field of health and social care

The model includes three key elements: (1) value that is created, (2) actors that perform value-creating activities and control resources, and (3) activities and resources that create value. Next, we will briefly discuss the model and its key elements.

Firstly, there are in general two basic, not completely unrelated, meanings to the term “value” in the networking context. On the one hand, value relates to the cultural values held by actors and, on the other hand, value may be perceived through the benefits and sacrifices of a relationship. (Flint et al. 1997; Eggert et al. 2006; Ulaga 2003; Möller 2006). The former meaning of value, cultural values, can be simply defined as beliefs held by actors about desirable ends and means, which serve as the basis for making choices

(Connor and Becker 1994; Meglino and Ravlin 1998). The latter meaning of value, in turn, can be determined as the (desired or actual) benefits received by an actor minus sacrifices that went into producing and/or receiving the benefits (Eggert et al. 2006; Flint et al. 1997). In the latter meaning of value, effectiveness improves along with the increase of benefits, all other things being equal, and efficiency improves along with the reduction of sacrifices, all other things being equal.

The benefits–sacrifices definition of value can be interpreted at least from two perspectives: from the end-customer’s perspective or more broadly from the relationship perspective. The end-customer perspective looks only at the benefits and sacrifices concerned with the end-customer. In the field of health and social care, for instance, the benefits for the end-customer can be seen as gains along different the dimensions of wellbeing (physical, mental, and social) and sacrifices are the resources that the end-customer uses to gain the benefits. The relationship perspective to value incorporates the benefits and sacrifices to all the participants of the relationship.

What is often not recognized is that the cultural approach and the benefits–sacrifices approach to value are closely related to each other, as the beliefs an actor has about desirable ends and means (i.e. cultural values) determine, in the end, how actors weight different benefits and sacrifices. In other words, the value that an actor gives to a certain benefit or sacrifice is a function of the actor’s cultural values. This gets us to our second element in Fig. 1, namely that of actors and their values. The key point here is that different actors have different values, and these values determine what activities the actors undertake and what aspects of end-customer or relationship value they regard as important. In the field of health and social care, a basic division can be made between public and private actors.

Finally, we get to the final element of the model, namely that of the activities and resources used in value creation. As already established, value is created through the actors’ activities of utilizing and transforming resources. In the field of health and social care, activities are the care activities undertaken by care providers and other actors of the care network.

Next, we will discuss the elements of the model in more detail. Here we are interested in understanding how value is created; hence, we will concentrate on (1) the actors and their values as well as on (2) the value-creating activities. Resources are seen here as embedded in the value-creating activities.

## 2.1 Value creation from the perspective of actors and their cultural values

The scope, amount, and quality of health and social care provided in any community are directly influenced by the cultural values of the actors in that community. There are many different types of actors operating or influencing operations in the field of health and social care, each having their own values and interests related to services production and development (see Table 1).

Table 1. Actors with differing values and interests

<b>Actor</b>	<b>Values and interests</b>
Public elected officials	Serving the public good; Making political decisions; Winning elections
Public authorities	Serving the public good; Following and executing political decision-making
Public service producers	Serving the public good; Ensuring public health based on individual needs
Private companies	Increasing shareholder profit; Taking care of stakeholders
Research institutions	Research and innovation based on different expertise and value foundations
Third sector organizations	Serving public good and/or private interests based on different expertise and value foundations
Private citizens	Living a healthy and happy life

A basic division can be made between public and private actors (Mur-Veeman et al. 2003). Among these, we may identify various sub-categories. For instance, public actors include elected officials or politicians, public authorities or bureaucrats, public insurers, and service providers. Private (non-public) actors include for-profit companies, research institutions, third sector organizations (non-profit associations,

volunteer organizations), as well as private citizens (patients and their families, volunteers). Patients themselves should be seen here as co-producers of their well-being, not mere recipients of care (e.g. Normann 2006). All these actors have their differing values and interests towards the provisioning of health and social care, which in turn creates value-creation boundaries within and between them. Such differences in values and interests may exist not only between different types of actors (e.g. between public and private hospitals) but also among each actor type (e.g. among public hospitals). Boundaries here refer to the cognitive and cultural boundaries arising from actors' differing values, not to any specific structural boundaries between the actors (this does not mean that such structural boundaries may not exist).

For instance, public organizations presumably put more emphasis on societal wellbeing and overall cost-effectiveness of the health care sector, whereas private companies look at care provisioning from a more profit-oriented perspective; on the other hand some of their employees, e.g., medical doctors have strong professional work ethics. Moreover, public and private service providers have different values in relation to how they perceive the importance of economical efficiency in producing wellbeing services vis-à-vis the wellbeing of individual patients. End-customers, in turn, are likely to value personal wellbeing more than their financial status or cost-effectiveness. These different types of value-orientations are likely to spur challenges to networking.

## 2.2 Value creation from the perspective of care activities

Value creation in a care network is inherently related to the care activities undertaken by the networked actors. For instance, it is the activities of the home care providers that bring benefits to home care clients in terms of for instance nursing, cleaning, and shopping, while they also entail some sacrifices in terms of for instance payments to the service providers. In this connection, each participant of a network should be seen as an active co-producer of wellbeing, not mere giver or receiver of care; patients, too, should be seen as co-producers of health rather than receivers of care (Normann 2006b).

Analyzing the extant literature we have identified five key dimensions of care activities which influence and describe value creation (see Fig. 3): (1) scope of care, (2) reactivity of care, (3) duration of care, (4) intensity of care, and (5) care process.

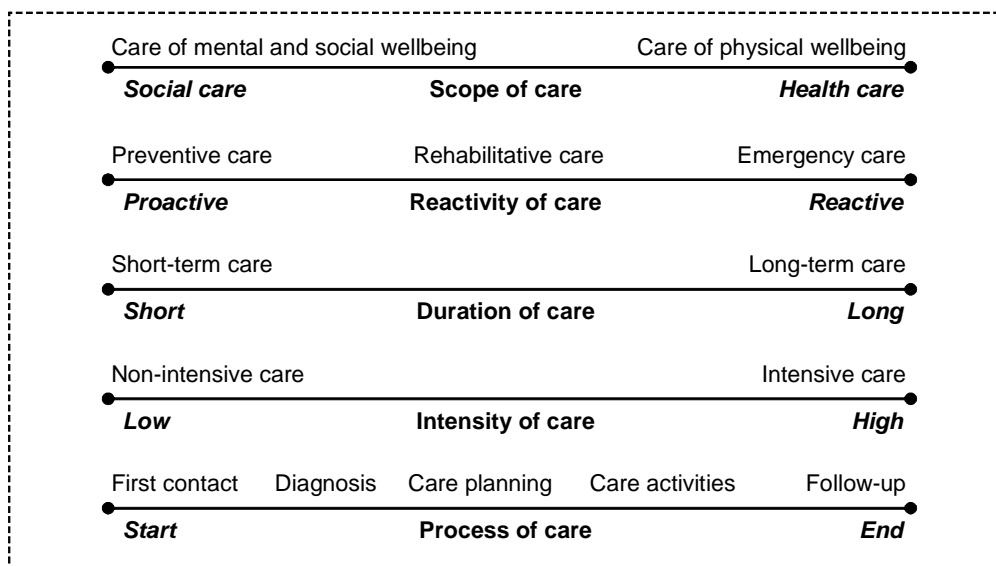


Figure 2. Dimensions of care activities

Firstly, value creation varies in terms of the scope of services the customer needs (Vaarama et al. 2001; 13-14; Kinnunen 2002, 38-39). A basic division can be made between social and health care services (Mur-Veeman et al. 2003). Some patients will need only health care (e.g. cure of disease, hip surgery), some may need only social care (e.g. laundry, meals, cleaning, financial aid), and others may need a range of different services (e.g. both physical therapy and shopping help). The scope dimension is directly linked with the different aspects of human wellbeing, namely physical, mental, and social aspects of wellbeing (Vaarama et al. 2001, 11-12). Put concretely, different care services are aimed at enhancing different aspects of human wellbeing.

Secondly, value creation varies in terms of the reactivity of care: care provisioning can be proactive (health promoting) or reactive (care of ill) (Normann 2006). Preventive care (preventing loss of wellbeing) can usually be classified as proactive care, whereas emergency care (taking care of serious, acute conditions of illness) can be classified as reactive care. Rehabilitative care (enhancing wellbeing) locates often somewhere in between proactive and reactive care.

Thirdly, value creation varies in terms of the duration of care: care services can be offered as short-term and long-term care (e.g. Mur-Veeman et al. 2003). Fourthly, value creation varies in terms of the intensity of care: care can be non-intensive requiring only relatively little attention from care specialists, or it can be intensive, such as emergency care requiring full attention of a team of specialists. Finally, value creation varies along the care process, including different stages of care such as first contact, early diagnosis, admission to care, extensive diagnosis, care planning, giving care services, after-care services, and follow-up.

It should be noted that although these five dimensions of value creation are presented here as being distinctive, in practice we may often witness connections or correlations between them. For instance, a study by Heinola et al. (2003) shows that the postponing of institutionalization from home care to in-patient care may be achieved through preventive care (reactivity of care dimension) that strongly integrates physical, psychological and social care services (care scope dimension). As another example, emergency care (care reactivity dimension) is often associated with both intensive care (care intensity dimension) and short-term or acute care (care duration dimension). However, sometimes intensive care may also be given as long-term care (e.g. long-term in-patient care of highly demented elderly), and preventive care may be given through short-term activities (e.g. public health campaigns through television advertisements). In sum, from the viewpoint of value creation we propose that the five value creation dimensions of care activities presented above are distinctive, and at least to some extent independent from each other.

Finally, it should be emphasized here that the five dimensions all relate to the concept of integrated care, which is one of the basic strategies of improving care efficiency and effectiveness. Basically, care integration can now be defined as the coordination within and across all these dimensions, so as to enhance seamlessness of care along the dimensions (see also Mur-Veeman et al. 2003). For instance, integrated care may be defined as the seamlessness of health and social care services (care scope dimension), as the coordination between diagnosis, care planning, care activities, and follow-up (care process dimension), or as the coordination between intensive care and non-intensive care (care intensity). Similarly, care pathways (Katsaliaki et al. 2005) may be defined in various ways along the different dimensions (e.g. care process or care scope).

### **2.3 Value creation continuum: current vs. future-oriented value production**

Above we have discussed two key elements influencing value-creation in networks: (1) actors and their values and (2) care activities. Through these concepts we have described how the end-customer or relationship value is a function of the different actors' values as well as the care activities undertaken by the actors.

In addition to these viewpoints we can approach networked value-creation from a third angle, namely that of the value-creation continuum (see Fig. 3) suggested by Möller and his colleagues (Möller et al. 2005; Möller and Svahn 2003; Möller and Svahn 2006):

“...the key characteristic of the value system from the classification perspective of nets is the level of determination of the system. In other words, how well known are the value activities of the net and the capabilities (resources) of the actors to carry them out, and to what extent can these value activities be explicitly specified? As value activities are essentially based on knowledge, the level of determination is also related to the level of codification of knowledge. The aspect of how well known the capabilities underlying the value activities are is related to how easily the underlying knowledge can be accessed and shared. The higher the level of determination of the value system, the less uncertainty there is and the less demanding its management, all other things being equal. This idea is based on the notion that the characteristics of information and knowledge – as reflected in the level of determination of the value system – influence both the learning mechanisms and the required managerial capabilities.” (Möller and Svahn 2006, 988-989).

This notion is highly relevant to us as it taps directly into the different types of value-creation within any value-creation system. In line with this notion we suggest that also health and social care networks can always be positioned along the value-system continuum (Fig. 3), ranging from a highly determined value-

creation system that seeks primarily efficiency, to a highly undetermined system that characterizes the early emergence of radical and often system-wide innovations, generally aiming at creating completely new, more effective offerings. In the middle of the continuum we can identify systems aiming at the renewal of current, determined value-creation systems.

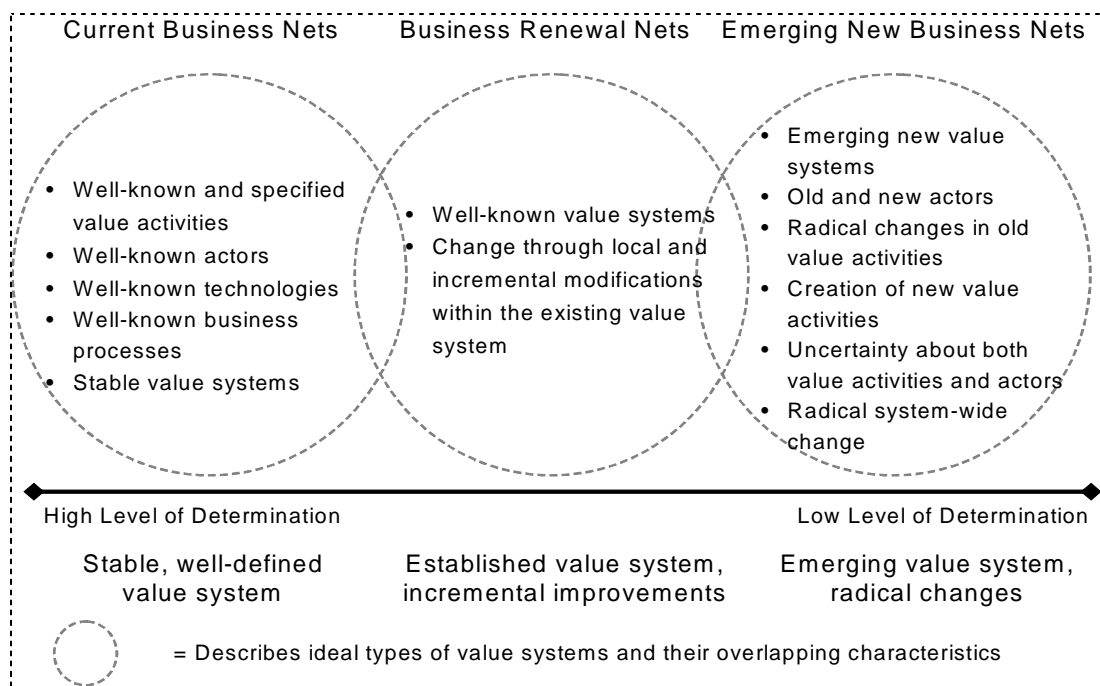


Figure 3. Value-system continuum (Taken from Möller and Svahn 2006, 989)

We have not been able to identify network studies in the field of health and social care that would have explicitly addressed this aspect of value-creation. Much of the literature concerning networks in the field has focused primarily on current value production. There are however a few studies that have addressed the renewal and/or future-oriented value creation. For instance, Page (2003) provides recommendations for improving health care through incremental improvement instead of radical innovation, arguing that incremental rather than radical improvement suits better to the medical profession culture that emphasizes physician autonomy. Elsewhere, Kessler and Goldsberry (2005) describe the incremental development of an integrated regional public health network, arguing that for instance governmental involvement, network-wide technical assistance, and a stable funding source are necessary conditions for improvement in such health care networks.

### 3 Multi-dimensional analysis of networks in health and social care

The value creation dimensions presented in the previous sections (Sections 2.1–2.3) help to differentiate between various types of value creation in the health and social care sector. We contend that any health and social care network, or the actors, resources and activities that constitute such a network, can be positioned along the different dimensions. Further, we argue that by positioning a network along the dimensions, we can systematically assess the functioning of the network at least from two respects: (1) how well does the network function within each value creation type, and (2) how well does the network function across the different value creation types.

Although each value creation dimension in itself offers analytical rigor, we suggest that it may be fruitful to consider two or more value creation dimensions simultaneously. In other words, we suggest the construction of two- or multi-dimensional matrices by which we can assess the functionality of a network from more than one dimension at a time (see examples of three-dimensional analysis in Fig. 4 and fig. 5). This increases the complexity of the assessment, but improves its comprehensiveness.

For instance, Fig. 4 looks at value creation along three dimensions: (x) reactivity of care, (y) scope of care, and (z) the value-system continuum. By looking at these dimensions simultaneously we can assess, for instance, how a certain network is positioned to provide integrated care in terms of the care scope, which is a



key strategic goal of controlling elderly care costs. If for instance much of the activities and resources of the network are located at the nexus of care-of-physical-wellbeing/rehabilitative/current-value-production, then one might ask if more resources should be put to the nexus of mental-and-social-wellbeing/preventive/renewal or even mental-and-social-wellbeing/preventive/radical-innovation nexus. However, one should keep in mind that networks involve some inertia, or path-dependency; the existing networks are not easily transformed. Nevertheless, the task in this case would be two-fold: (1) to create new structures towards the renewal and radical innovation of both care scope integration and preventive care, while not forgetting connections to existing structures in rehabilitative care of physical wellbeing, and (2) to improve the conditions of cooperation within and across these existing and new network structures.

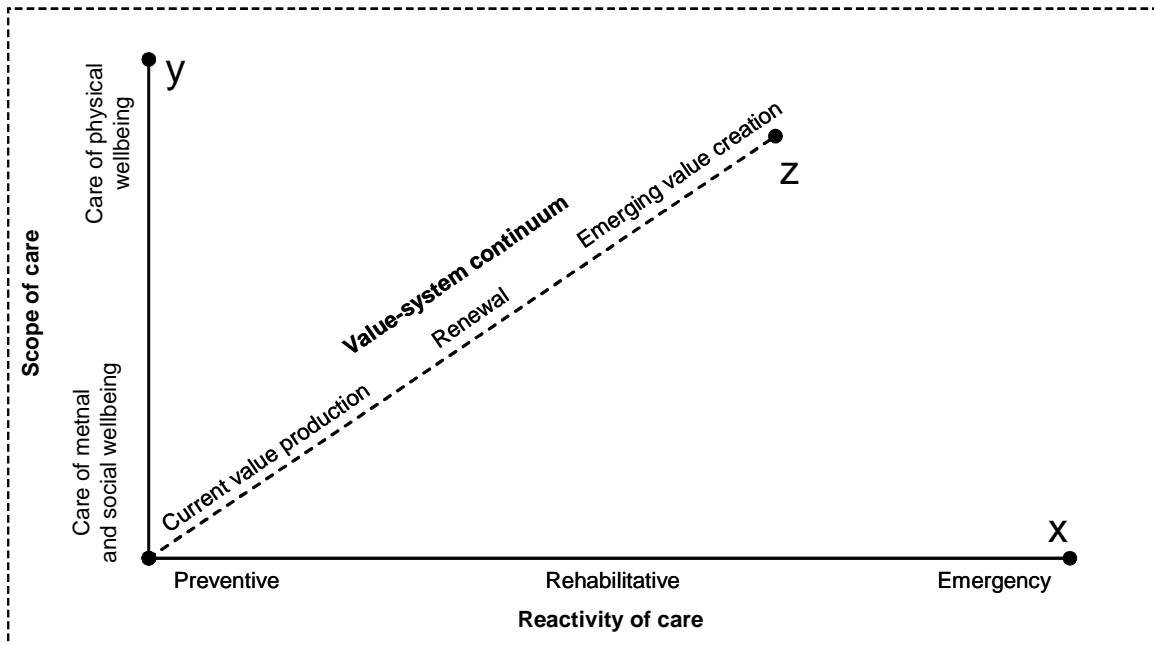


Figure 4. Multidimensional assessment of value creation in a network: An example.

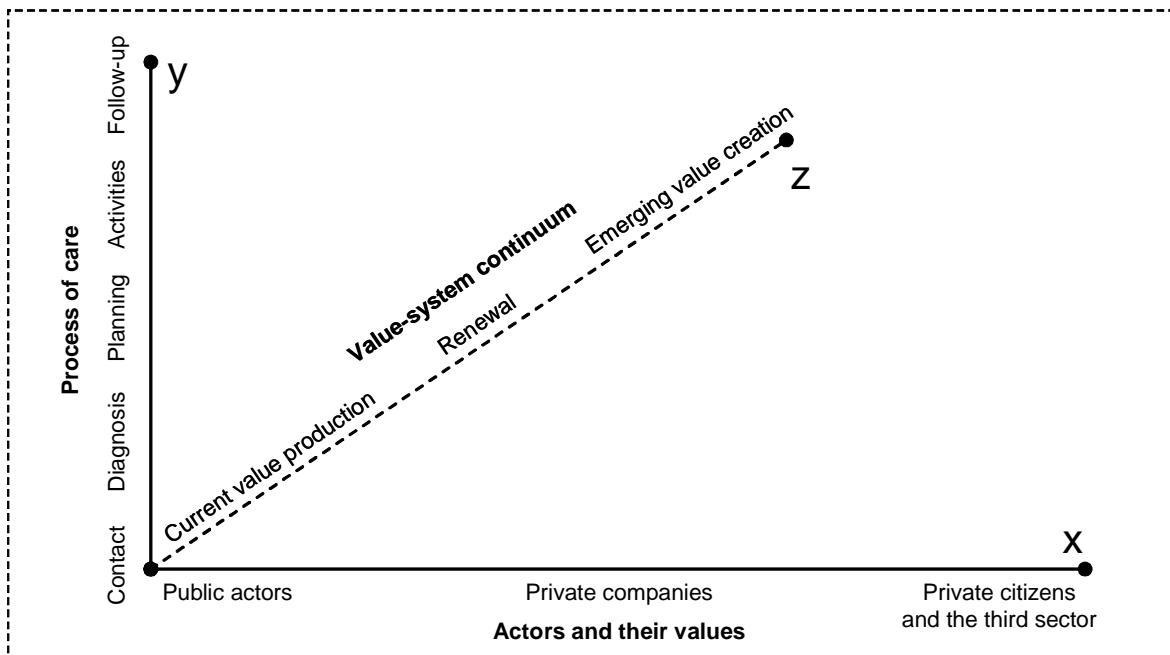


Figure 5. Multidimensional assessment of value creation in a network: An example.

Fig. 5 in turn looks at value creation along the dimensions of (x) actors and their values, (y) process of care, and (z) the value-system continuum. Mapping a care network along these dimensions will help, for instance, to assess the current status of improving care pathways through the care process, and what actors

are currently actively taking part in each stage of the process. If a resource concentration is found for instance on the public-actors/current-value-production nexus concerning the whole care process, then it would be obvious that the task is to look towards integrating other actors such as private companies in the care process. This would then need to be carried out through development projects aiming at the renewal or radical innovation of the current ways of operating. Again, this requires restructuring of the network as well as improving the conditions of cooperation.

#### 4 Conclusion and discussion: Networking challenges within and across value-creation types

Overall, we propose that any health and social care network may be assessed through their underlying value creation dimensions, and this assessment will help in evaluating managerial challenges within and across different value creation types. Put more formally, we propose the following:

**Proposition 1:** Network management within each value creation type is different and requires different managerial competencies compared to other value creation types.

**Proposition 2:** Network management across different value creation types requires different managerial competencies. In other words, crossing boundaries between different value creation types requires specific managerial competencies, and each boundary requires different managerial competencies compared to other boundaries.

**Proposition 3:** The more value creation types and/or boundaries a network encompasses, the more demanding it is to manage the network, all other things being equal.

There already exist studies that address specific managerial challenges within some of the different value creation types as well as across some of the value creation boundaries. For instance, supply chain management literature has been used in assessing the management of networks across value creation types along the care process dimension (e.g. Roark 2005). This type of evidence is however sporadic, considering the wide scale of different value creation dimensions presented in this paper. We therefore suggest that our framework, although being conceptual at this stage, is a step towards systemizing and synthesizing the discussion on understanding and managing health and social care networks.

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