

New value creation in business networks: The role of collective action in constructing system-level goals

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ABSTRACT

This study focuses on collective goal formation in business networks aimed toward new value creation and innovation. Previous research has depicted such networks as value-creating systems or meta-organizations pursuing a system-level goal. We develop these views by addressing a research question: How can multiple organizations collectively form a system-level goal, and how does this affect new value creation at the level of the whole network? We conducted a multi-case study of two Finnish health care networks in which multiple diverse organizations participated in the formation of a system-level goal for the network and developed innovative joint treatment practices for the better care of patients. We derived six propositions and developed a conceptual model explaining how the collective formation of a system-level goal is linked to network-level value creation by increasing network actors' resource commitment. Furthermore, we introduced important moderating factors, network architects and domain similarity, which affect collective goal formation. We claim that the conceptual model strengthens pre-existing theories on managing business networks through a system-level goal, collective action, framing, agenda construction, and institutional mobilization. We contribute especially to previous research on networks aiming for new value creation.

1. Introduction

This paper contributes to the research on intentionally created business networks. Such networks are defined as goal-oriented, value-creating systems (Matinheikki, Artto, Peltokorpi, and Rajala, 2016; Möller & Halinen, 1999). The management of such networks is often seen as a centralized activity where a few dominant organizations with bargaining power (called hub firms or lead organizations; see, e.g., Hinterhuber, 2002) form and use business relationships to orchestrate other organizations (Dhanaraj & Parkhe, 2006; Todeva, 2006). When the network's goals are built tightly around the goals of a hub firm, the network may become vulnerable because its existence will likely depend on the hub firm's success in running its business (Håkansson & Ford, 2002; Ojasalo, 2004). By focusing mainly on transaction-based and hub firm-driven networks, past literature has tended to neglect other aspects that explain how all network members, not just one participant, can collectively contribute to keeping the network together and creating value at the level of the whole network (Provan, Fish, & Sydow, 2007).

In this paper, we focus on collective action among network members in forming a system-level goal, which then influences value creation of the whole network. Previous research on business networks has suggested framing, agenda construction, and the institutional

mobilization of actors as means for determining a system-level goal for the network (Möller, 2010; see also Möller & Svahn, 2006, 2009; Ritvala & Salmi, 2010). These authors have claimed that such approaches are particularly essential in networks involving innovation and uncertainty and which aim for new value creation (Möller, 2010; Möller & Svahn, 2009), as well as in networks aiming to commercialize innovation (Aarikka-Stenroos & Lehtimäki, 2014; Aarikka-Stenroos, Sandberg, & Lehtimäki, 2014). In addition to business network research, we used literature on meta-organizations to complement the conceptual understanding of the collective formation of the system-level goal in networks of organizations that are legally autonomous and not linked through contractual business relationships (Gulati, Puranam, & Tushman, 2012; Lundrigan, Gil, & Puranam, 2015).

Based on the above, we formulated the following research question: How can multiple organizations collectively form a system-level goal, and how does this affect new value creation at the level of the whole network? To address the research question, we conducted a case study of two networks, each consisting of multiple health care organizations co-located on two campuses in Finland: Rehapolis (in the City of Oulu in Northern Finland) and HealthPark (in the Helsinki Metropolitan Area in Southern Finland). These two networks include private, public, and

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non-governmental organizations (NGOs) that for the most part do not have legally binding business relationships with each other; they do, however, belong to the same health care domain that aims to provide comprehensive care to patients.

In the both case networks, members participated in collective action to determine the system-level goal in addition to initiating and carrying out joint routines. The Rehapolis network worked on renewing dispersed, publicly funded disability health care services through better integration over the whole treatment chain, whereas the HealthPark network focused on developing a new overall service offering that combined orthopedics, physiotherapy, dentistry, and neurotherapy and was collectively provided to elderly people. Despite the fact that the networks included diverse organizations without direct, mutual business relationships, the actors jointly aimed to innovate and improve the existing local health care systems; thus, they resembled business renewal or new business nets aimed at creating new business (or health care) operations and a value-creating system (Möller & Svahn, 2006). Generally, we label such innovative results as *new value creation*.

Regarding the findings and contributions, we derived six propositions from our empirical analysis and suggest a conceptual model for the collective formation of a system-level goal and its influence on new value creation. Our model posits that an interactive and collective process of determining a system-level goal is moderated by the extent to which network participants have similar operations, customers, organizational goals, or knowledge bases (defined through the degree of domain similarity) and are facilitated by a single actor, i.e., a network architect. The model emphasizes the following finding: As the system-level goal is collectively formed, network members are likely to accept the goal and perceive it as beneficial not only for the network as a whole, but also for themselves, increasing their commitment to collective action in the network. This enables positive network-level outcomes such as comprehensive care through innovation and integration in health care operations. We argue that the conceptual model strengthens pre-existing theories on managing business networks through a system-level goal, collective action, framing, agenda construction, and institutional mobilization. Furthermore, we suggest that our findings and contributions are especially essential in networks involved with innovation and uncertainty and aimed at new value creation. This study opens up avenues for further research and provides implications for managers.

2. Theoretical background

2.1. Formation of a system-level goal

Goal orientation is an inherent feature of strategic networks (Möller & Rajala, 2007; Möller, Rajala, & Svahn, 2005). Recent theorizing on meta-organizations supports this view by positing that collectively crafted and mutually accepted system-level goal helps increase actors' commitment to collective action (Berkowitz & Dumez, 2016; Lundrigan et al., 2015) in situations where business relationships or bargaining power among member organizations is not the dominant driver for collaboration. A meta-organization is a special kind of network wherein member organizations are themselves legally autonomous and not interlinked through legally binding business relationships (Ahrne & Brunsson, 2005; Gulati et al., 2012).

Järvensivu and Möller (2009) posited that setting goals through framing is a key network management function. Furthermore, Möller and Svahn (2006, 2009) and Möller (2010) suggested that framing and agenda setting are crucial activities in situations of high uncertainty, such as the emergence of new business fields requiring active cognitive processing and sensemaking through which actors combine fragmented information to interpret and construct meaning from the prevailing environment to form suitable goals and strategies. In addition, Ritvala and Salmi (2010, 2011) emphasized institutional mobilization, in which a group of visionary actors pursues institutional change by

mobilizing diverse networks of actors into collective actions through active framing or building understanding of and legitimacy for a common issue. Therefore, the collective formation of a system-level goal and the development of joint routines can be related to broader theorizing on collective action and a commons approach (Olson, 1965; Ostrom, 1990), which describes collective actions as actions taken by a group of actors to advance a common purpose.

2.2. Collective action and innovation-focused networks

Agenda construction in networks can be depicted as a collective endeavor whereby multiple actors share design rights and construct meaning about the situation through social interaction (Henneberg, Naudé, & Mouzas, 2010; Medlin & Törnroos, 2014; Möller, 2010). Provan and Kenis (2008) posited that shared decision making is positively associated with goal consensus and network inclusiveness, leading to an increased commitment by actors to value creation at the network level. Manser et al. (2016) further suggested that sharing management responsibilities may improve communication and information sharing, thereby also improving the effectiveness of the network. According to Provan and Milward (1995), such network-level effectiveness (not the effectiveness of single organization) is important especially in health care, where the effective and comprehensive treatment of a patient requires input from multiple organizations participating in a treatment chain.

Collective approaches to agenda construction and network management are especially pivotal when networks pursue radical innovation, which requires the support of diverse actors (public organizations, expert organizations, communities, etc.) to combine dispersed knowledge and build legitimacy in the field (Aarikka-Stenroos & Lehtimäki, 2014; Sandberg & Aarikka-Stenroos, 2014). Furthermore, when a network pursues new means to organize value creation e.g., to solve unexplored issues, or when significant uncertainty is involved, value-creating activities as well as required resources are often unknown. In such cases, a few motivated actors need to define and frame the issue in order to mobilize other actors to commit existing resources to collective actions (Ritvala & Salmi, 2011) or to co-create new kinds of resources (Rusanen, Halinen, & Jaakkola, 2014). Thus, shared values, trust, common identity, and other informal social mechanisms within the network form important antecedents for collective action and the construction of a system-level goal (Mariani, 2016; Raab & Kenis, 2009; Ritvala & Salmi, 2010).

2.3. Organizing for the overall networked setting

A system-level goal determines what the network does; thus, collective action is not limited to the formation of the system-level goal, but also involves organizing value-creating activities in the network (Partanen & Möller, 2012). This actually means that actors participating in framing and agenda setting do not just make sense of and agree upon goals, but also need to decide who does what to ensure definition, activation, mobilization, and control over the value-creating activities (Gulati et al., 2012; Möller, 2010). In most cases, specific resources such as knowledge and capabilities are not readily available in the network, and new participants with such capabilities need to be involved in the network in time (Arto, Ahola, & Virtainen, 2016; Möller & Svahn, 2009).

The selection of network members is a complex endeavor that is tightly linked to the definition, permeability, and control over network boundaries (Gulati et al., 2012; Provan et al., 2007). New members are often selected according to their complementary resources or the special capabilities required for value-creating activities (Gulati, 1995; Hitt, Dacin, Levitas, Arregle, & Borza, 2000; Möller & Törrönen, 2003). A common identity may also help actors to distinguish network membership and form premises for collective action (Raab & Kenis, 2009). Older members may also appreciate domain similarity (Van de Ven,

1976), which means that new organizations are likely to be expected to belong to the same environment, serve the same customers, have similar business goals, and share a common value base. Domain similarity may then improve goal consensus (Provan & Kenis, 2008). In a similar vein, Boschma (2005) asserted that a common knowledge base or high cognitive proximity may facilitate the formation of inter-organizational relationships by lowering the barriers to effective communication and framing about the goal. However, domain similarity and cognitive proximity are reported to have a concave relationship to network effectiveness, indicating that some level of heterogeneity between member organizations' goals and knowledge bases may provide complementary factors (such as resources) to drive innovation in the networks (Corsaro, Cantù, & Tunisini, 2012). A fundamental but less researched consideration is to whom decision rights on member selection should be granted (Gil & Baldwin, 2014; Lundrigan et al., 2015), which connects the membership selection issue to the distribution of power in networks (Ahrne & Brunsson, 2005).

Regarding the distribution of power (centralized vs. decentralized), previous research has acknowledged that certain strong actors (individuals or organizations defined as network architects or network mobilizers) may orchestrate and coordinate the formation of a network's system-level goals without hierarchical power over other network members (Gulati et al., 2012; Hinterhuber, 2002). Such coordinative roles seem relevant especially in situations characterized by high uncertainty and the need for innovation (Mouzas & Naudé, 2007). Assigning a non-hierarchical status to a network architect might protect from opportunistic behavior by preventing the use of dominant authority to align the network's goals purely according to a firm's own interests, which might jeopardize the effectiveness of the whole network (Provan & Kenis, 2008). To support such a non-opportunistic view, Munksgaard and Medlin (2014) posited that instead of seeking purely self-interest benefits from the network, firms should develop competences to convert collective interest into self-interest gains.

2.4. Theoretical themes for the empirical study

Through the brief literature review, we aimed to map the previous conceptualizations of the system-level goal as well as related theoretical themes and important concepts. Despite providing an initial conceptualization of the system-level goal and collective action in the networks, the current literature tells us surprisingly little about how multiple organizations can collectively form a system-level goal, a question we will address in the following empirical section. In Table 1, we have summarized the four essential theoretical themes and their key arguments regarding the system-level goal as well as conclusions about these themes that motivated our inquiries in the empirical study.

3. Method

3.1. Research strategy

We studied the empirical phenomenon of collective goal formation through a theory-elaborating research approach (Ketokivi & Choi, 2014), where we used empirical analysis to elaborate on and complement the existing theory on network management. We used the four central theoretical themes derived from the existing literature (see Table 1) as our analytical lens to guide abductive reasoning (Van de Ven, 2007). Due to the nature of the research question, we decided to conduct a qualitative multiple case study and selected two different, yet similar enough, case networks to allow us both a wider theoretical sample and control of variability (Eisenhardt, 1989).

3.2. Rehapolis and HealthPark cases - case selection and case descriptions

Our multiple case study involved two networks of health care organizations, Rehapolis and HealthPark, which were co-located on two

campuses. We selected these networks by using two key criteria. First, as the purpose of our research was to address the collective formation of a system-level goal in networks where collective action is present and can be observed, we chose networks wherein the organizations were legally autonomous and not bound to business relationships through contracts, transactions, hierarchies, or the bargaining power of any central hub firm. Second, as the collective formation of a system-level goal is essential in networks involving innovation, we chose case networks wherein participating organizations introduced innovative solutions through joint actions and routines.

Furthermore, we decided to select two cases because we wanted to analyze the phenomenon of the collective formation of a system-level goal in different networks with potentially different forms of collective action, thus providing us with an understanding of potential variation in the results. However, while selecting the two cases, we were careful to control variation by selecting networks that were similar enough in terms of involving organizations from the same sector (health care), the same national and legislative system (Finland), and the same kind of setting, including multiple divergent organizations. Thus, despite their differences, the cases closely embody similar cognitive approaches and social behaviors among the organizations and individuals in the field, giving a deeper understanding of the study context and reducing the possibility of excessive case-specific findings.

Rehapolis is a network of 18 organizations operating mainly in disability health care and rehabilitation. The goal of the Rehapolis network is to increase the legitimacy of disability health care and improve disability services through co-locating and increasing collaboration between the key organizations in the field. The Rehapolis network has resulted in positive network-level outcomes by converting dispersed and poorly coordinated local disability health care services to a well-functioning, multi-organizational service system that offers a comprehensive disability health care chain, from post-amputation treatment to prosthesis design, fitting, and commissioning, as well as rehabilitation, physiotherapy, and peer support. In addition, the organizations have jointly arranged shared educational events and have jointly developed several innovative care practices and routines (e.g., the use of silicon liners in post-amputation care; a shared and transparent booking system), leading to the better integration of multi-organizational health care services.

HealthPark is a network of 11 health care organizations providing private health care services for elderly people. HealthPark is located in the historic Orton Foundation hospital site, which is famous for its orthopedic and rehabilitation expertise dating back to veteran rehabilitation after the Second World War. Later, the campus expanded its orthopedic services to civilian patients with musculoskeletal disabilities and also began offering educational services for disabled individuals in need of re-education. However, changes in Finnish legislation have increased competition in the private health care sector, which has forced Orton to search for alternative networked forms of organization. This has led to the establishment of the HealthPark network together with nine other local health care organizations. HealthPark is an example of the rapid development of a multi-organizational business network by collectively forming a system-level goal and subsequently introducing innovative joint services among organizations, such as comprehensive medical examinations and treatments (called the "Stay Healthy" service) and integrated orthopedic rehabilitation services. Table 2 summarizes the key features of both case networks.

During the period of our research (late 2014–early 2016), the two networks were in different states of maturity. Rehapolis had been operational for nearly a decade, while the HealthPark network had only recently been formed. Using two cases with different states of maturity enabled us to simultaneously follow how organizations engage in goal development (the HealthPark case) and retrospectively analyze how a jointly developed goal had become standard in mundane operations, yielding innovation in the network (the Rehapolis case). We determined

Table 1

Specific theoretical themes connected to the formation of the system-level goal.

Theoretical theme in existing literature	Key arguments in existing research	Conclusions motivating the inquiries in the empirical study
<i>System-level goal contributing to value creation and innovation</i>	Strategic networks can be seen as goal-oriented, value-creating systems (Möller et al., 2005). Framing, agenda construction, and mobilizing approaches to goal formation are essential in networks involving innovation and uncertainty (Möller, 2010; Möller & Svhahn, 2006, 2009). Managing the network toward radical innovation may require the mobilization of diverse actors for knowledge, support, and legitimacy in the field (Aarikka-Stenroos & Lehtimäki, 2014; Sandberg & Aarikka-Stenroos, 2014). The meta-organization literature complements understanding of the collective formation of the system-level goal by depicting networks as consisting of organizations that are legally autonomous and not linked through contractual business relationships (Gulati et al., 2012; Lundrigan et al., 2015). On the system level, value creation relates to network-level outcomes and the effectiveness of the whole network, not just business outcomes or the effectiveness of/for a single actor (Provan & Kenis, 2008). Framing and agenda construction relate to sensemaking, through which actors interpret and construct meaning for the existence of a network and its goals (Henneberg et al., 2010; Möller, 2010). Institutional mobilization (Ritvala & Salmi, 2010, 2011) complements framing and agenda setting in networks. The determination of a system-level goal is often depicted as the task of a central actor or a hub firm (Dhanaraj & Parkhe, 2006; Todeva, 2006). Collective action connected to the determination of the system-level goal and the development of joint routines can be related to broader theorizing on collective action (Olson, 1965) and a commons approach (Ostrom, 1990).	Research on networks involved with innovation and uncertainty provides a fertile ground for flexible organization through the collective formation of system-level goals among legally autonomous organizations that are not constrained by rigid, mutual business relationships and can therefore truly engage in collective action. The link between jointly developed system-level goals and network-level outcomes is less discussed in previous network management research.
<i>Formation of a system-level goal through framing and agenda setting</i>	Centralized management is highly emphasized in the past literature (Hinterhuber, 2002). Shared management structures may lead to a higher level of goal consensus and inclusiveness of network actors (Provan & Kenis, 2008). The network architect perspective sees individual organizations mostly as facilitators without hierarchical power based on business relationships (Gulati et al., 2012; Hinterhuber, 2002), confounding the traditional juxtaposition between shared and centralized structures.	Collective action and joint routines in the formation of system-level goals have been less discussed in the business network management literature. Framing through sensemaking and institutional mobilization approaches to goal formation underline interaction between actors and thus support collective action to establish a system-level goal.
<i>The distribution of power in the network</i>	Network members are often selected by their capability to complement the resources of pre-existing members (Hitt et al., 2000) and according to their fit with the required value-creating activities (Partanen & Möller, 2012). Domain similarity (Van de Ven, 1976) or cognitive proximity (Boschma, 2005) may facilitate the formation of new inter-organizational relationships. Recent research has increasingly focused on the social factors guiding member selection, such as mutual trust (Mariani, 2016) and shared values (Ritvala & Salmi, 2010).	There is little research on specific forms of collective action and joint decision making concerning the sharing of power and design rights to influence system-level goals. The role of single organizations for the formation of goals in a networked setting is central yet less investigated.
<i>Selection of the network members</i>		The previous research has only partially discussed the impact of social factors on the membership coalition and, further, on system-level goal formation. Existing research tends to argue that domain similarity may enhance the formation of a system-level goal, yet there is scarce research on the importance of heterogeneity in organizations, especially in networks involving radical innovation and uncertainty. There is still little research on the sharing of design rights among network members.

that this two-sided approach would not have been possible by focusing only on one case or would have at least required several years of data collection.

3.3. Data collection

We gathered qualitative data on both networks mainly through in-depth, semi-structured interviews between October 2014 and March 2015. We followed a theoretical sampling frame (Corbin & Strauss, 2014) when choosing our informants, who had a central managerial or executive role and were thus capable of considering themes related to their own organization as well as to the network as a whole. The first interview round included the most central organizations in the networks (in terms of visibility and size). In the following three rounds of interviews, we included the rest of the organizations in the campus networks.

We conducted 34 interviews, of which 23 focused on Rehapolis and 11 on HealthPark. In some interviews, both cases were discussed because the Prosthetic Foundation belongs to both networks. The interviews were held face to face or via phone and lasted 80 min on average. At the beginning of the interviews, we introduced the research topic and then asked the informants to introduce themselves and their

organizations and to describe the developmental history and everyday operations within the network by focusing on the events, activities, and roles of different actors; moreover, we asked them to describe the relationships between different actors. Interviews were recorded and transcribed verbatim, yielding over 1500 pages of text. See Appendix A for details about informants' roles and organizations. Pseudonyms are used for certain organizations to protect their anonymity.

In addition, we saved all of the correspondence between informants and our research group. Other documents used for analysis included a history of the Orton Foundation, official press releases, web pages, early development material, correspondence and the board meeting memorandums at Rehapolis, a biography of Rehapolis' director, and multiple news articles from the main Finnish media concerning both health care campuses.

In addition to interviews, we observed and took notes during two internal HealthPark development board meetings in which the organizations jointly framed and formed the system-level goal, brand, and future joint operations. Our research group also facilitated a three-hour workshop in which local health care NGOs participated in envisioning HealthPark's future and identifying possible new actors for the network. The participating researchers (i.e., the authors of this paper) recorded and documented the outcome and development process of four inter-

Table 2
Rehapolis and HealthPark cases.

Case feature	Rehapolis	HealthPark
Number of organizations	<ul style="list-style-type: none"> ● In total: 18 ● Health care and wellbeing: 11 ● Medical research: 3 ● Other fields: 4 	<ul style="list-style-type: none"> ● In total: 11 ● Health care and wellbeing: 10 ● Vocational school (moving out in 2018)
Goal formation period	1999–2001	2014–2015
System-level goal	<ul style="list-style-type: none"> ● Accessibility, disabilities, rehabilitation ● Focus on centralizing and improving disability services and the public image of disabilities ● Close public-private partnership ● Disability health care ● Public and private assistive device services ● Occupational health care ● Physiotherapy ● Occupational therapy ● Disabled and other association activities (peer support, education) ● Wellbeing services (massage, weight control, recreational services) ● Increased legitimacy and publicity of disability health care as a whole ● Improved premises through the Rehapolis campus; all disability services available from a single location ● Innovative and integrated post-amputation treatment chain including all necessary services from amputation to the commissioning of prosthesis ● Peer support combined with the treatment chain for the first time in Finland, improving post-amputation rehabilitation tremendously 	<ul style="list-style-type: none"> ● Private health care service for elderly people ● Focus on combining complementary private health care firms to offer comprehensive care
Focus areas of organizations	<ul style="list-style-type: none"> ● Private hospital ● Rehabilitation ● Medical imaging ● Occupational training ● Dentist ● Neuro-therapy ● Private assistive device services ● Association activities ● Educational services for the disabled (existing) ● Innovative, comprehensive service offering for elderly people including all necessary health care elements, from general practice to special health care services such as orthopedics, physiotherapy, neurology, and dentistry ● Potential to offer private health care services as a whole, e.g., in orthopedic or neurological injury, patients may receive all necessary care components from the first health check to surgery and rehabilitation from a single location ● Increased visibility through joint marketing efforts 	
Positive network-level outcomes (value creation in the whole network)		
Maturity of operations	Mature (8 years in operation)	Nascent. Less than 1 year in operation

organizational workshop groups. We did not use the workshop as a primary data source, but it did give us valuable information about the case context.

3.4. Data analysis

We began our analysis by creating chronological case narratives of both networks. We mapped the events and activities as expressed by our informants and utilized the given documents to triangulate this information to create precise storylines. We focused on micro-level entities such as activities, choices, and the meanings given to activities by individuals representing the various organizations. These case narratives acted as our within-case analyses, which helped us to understand the history and context of both individual cases.

After mapping the case histories, we focused on understanding the role of goal-setting activities and current network operations. To this end, we utilized abductive theory-elaborating analysis (Ketokivi & Choi, 2014), meaning that we interpreted the case events through the reviewed literature. This literature gave us theoretical themes through which we could better interpret the empirical phenomena and bind our findings to the existing theory. Thus, we utilized thematic analysis (Corbin & Strauss, 2014) through abductive reasoning (Van de Ven, 2007).

On a practical level, we first coded our interview transcripts by using the four theoretical themes (see Table 1) as general coding categories. In other words, we distilled rich, *in situ* data excerpts by using Atlas.ti software to narrow our vast amount of material into a reasonable number of data excerpts (approximately 110 excerpts for HealthPark and 180 for Rehapolis). We then further analyzed these excerpts by describing their general theoretical themes in order to find irregularities compared to the current literature but also to reduce the level of abstraction of the existing themes (Van de Ven, 2007), giving us novel, micro-foundational (Felin, Foss, Heimeriks, & Madsen, 2012) insights about concepts affecting the formation of a system-level goal. We collected our key findings into a master data table, which we revised during subsequent iterative analysis. The table acted as our premise for

the development of the six propositions and the conceptual model.

Table 3 gives a basic illustration of our data analysis approach. The leftmost column describes an excerpt from the interview transcript. We initially categorized the excerpt according to the four conceptual themes. The rightmost column shows parts of our case narrative and rationalizations (compiled from multiple excerpts) and links them to our propositions.

4. Empirical findings

4.1. A system-level goal - an antecedent of reaching network-level value creation

In both cases, multiple organizations participated in forming a system-level goal to develop innovative and comprehensive treatments for patients and to improve the effectiveness of the whole health care network. In Rehapolis, the network aimed to renew and improve the local disability health care services. Respectively, HealthPark aimed to combine the offerings of individual private health care providers to form an innovative and comprehensive health care service for elderly people in order to compete with increasing competition within the private health care market.

In Rehapolis, multiple organizations constructed the system-level goal in inter-organizational advisory board meetings organized by the Prostheses Foundation CEO in the late 1990s. In the board meetings, a group of key actors in the local disability health care field (representatives of the Prostheses Foundation, Disabled Association, University Hospital, and Municipal Assistive Device Unit) realized the poor status of local disability health care and started pondering possible solutions. Despite the diversity of the participants' organizational backgrounds and operating logic (public organizations vs. private firms and NGOs), all of the network members saw that improving the quality of care and the legitimacy of the whole field would be beneficial for their own organizations. The actors actively participated in interpreting the field and then framed a goal to increase the legitimacy and quality of disability health care by building a Rehapolis campus for better

Table 3

Illustration of the abductive analysis approach.

Raw data excerpt	Thematic coding category	Inductively derived findings, and the proposition derived thereof
<i>"When it comes to this modern Orton Foundation, the present CEO has done a great job in bringing new, fresh ideas and much-needed business knowledge."</i>	The distribution of power in the network The quotation discusses the role of single actors in developing the initial vision and framing the goals in the case networks	Neither Orton (HealthPark) nor the Prosthetic Foundation (Rehapolis) possessed formal power based on legal contracts in the network, but acted instead as architects facilitating goal formation by envisioning and framing the future state of the network. These actions helped other actors' sensemaking, facilitating collective goal formation. For example, in HealthPark's development board meetings, the other actors started to understand the potential collective business gains (e.g., shared customers) of offering private health care services as a complete system. Proposition 5a. <i>A single network member's (a network architect's) mobilization efforts (e.g., envisioning, framing, and organizing the coordinating bodies) positively moderate the relationship between collective goal formation and the system-level goal.</i>
<i>"Former COO of the Disabled Association and the CEO of the Prosthetic Foundation put their heads together: They had a vision of how Rehapolis should look."</i>		

integration of dispersed services.

The campus succeeded in creating innovative network-level outcomes for disabled patients, such as receiving services from a single location and through an integrated treatment chain. In addition, Rehapolis members organized shared events to educate health care professionals, patients, and the public about disabilities and possible new forms of care. The individuals who participated in the goal development described Rehapolis as follows:

"In the Rehapolis concept, different actors in the [disability health care] field are able to rent premises and participate in the network. That is a win-win for everyone."

"Rehapolis is seen as a strong brand; it is seen as a physical location, yes, but also as a [collective] image which brings credibility and publicity. And as I said, we have tried to adhere to that by collectively developing these different external events in which all the organizations arrange something related to their operations."

In a similar vein, all seven founding actors (Orton Foundation and its three subsidiaries, Orton Hospital, Orton Pro, Orton Rehab as well as Prosthetic Foundation, Disability Service Inc., and Dentist Inc.) in the HealthPark network collectively formed the system-level goal, which supported the goals of the individual organizations by increasing customer flows on the campus, but also enabled the comprehensive treatment of patients. The participants saw that such a more holistic perspective could provide better care, resulting in a competitive advantage for the whole network in the ever-tightening competitive private health care sector. One senior medical expert simplified the goal as follows:

"We should have this kind of entirety that when one comes here [to the HealthPark campus] we have all the health care services one needs. Here should be enough different [health care] actors that all basic personal health services are offered, maybe not with the same visit but at least from the same location."

Network actors' commitment and investments were crucial for reaching the innovative network-level outcomes through the co-development of health care services. When actors perceived the system-level goal as meaningful to their own organizations, they were willing to invest resources in the network. These investments, such as paying marketing fees, regularly participating in development board meetings, arranging shared events, and co-developing services in Rehapolis, were essential for improving the legitimacy of disability health care and the comprehensive care of patients. Similarly, in HealthPark, commitment and investments from multiple organizations were required to develop a shared service system. If the system-level goal had not provided a common purpose guiding collective actions, the network-level outcomes might not have been reached. On the other hand, if actors had not perceived the goal as being at least partially beneficial to their own businesses, they would not have agreed to the system-level goal nor

committed to collective action. These findings lead to our first two propositions:

Proposition 1. The system-level goal defines network-level value creation but is also perceived as beneficial by the network actors, leading them to commit resources to collective actions (e.g., investing their resources in co-development in the network).

Proposition 2. The more network members invest their resources in collective actions in the network, the more effective the whole network becomes in delivering innovative network-level outcomes (e.g., providing comprehensive care for patients).

4.2. Collective goal formation - an antecedent of a system-level goal

In both networks, multiple organizations were given the opportunity to join discussions and development sessions about the network goals. For example, when actors in Rehapolis together made sense of and acknowledged the poor status of the disability health care services (most of the actors operated on temporary premises, such as in the hospital's basement and site huts, creating a non-integrated treatment chain), they were able to construct a collective goal to develop disability health care as a whole system.

"We had this advisory board which had an important role... It was this kind of discussion forum in which we started to discuss where this world is heading and what we should do about it."

- Former CEO of the Prosthetic Foundation.

Similarly, HealthPark development board meetings assembled existing campus organizations as well as potential new members to map the vision and goals for HealthPark by discussing the current market situation and potential options for new services. In other words, the organizations engaged in collective sensemaking, which helped in framing the goals and making them more acceptable for all of the actors. Especially during the observed HealthPark development board meetings, little by little, the different organizations started to form a common identity for HealthPark (e.g., agreed upon the name and brand), and all of the members accepted that the network should target elderly people in order to gain common customer flows through comprehensive health care.

These observations led us to describe collective goal formation as an essential antecedent of a system-level goal:

Proposition 3. The system-level goal requires that multiple network members participate in the collective goal formation efforts (e.g., sensemaking through jointly interpreting and constructing the meaning of a situation and framing the system-level goal accordingly).

4.3. Domain similarity - a moderating factor

Interestingly, in the later phases of Rehapolis (2010 onward), collective actions diminished after many new members joined the network. The new members represented divergent fields such as medical research, general wellbeing, and folk medicine. We surmised that decreased domain similarity among network members caused the decrease in collective actions.

During the early phases, relatively high domain similarity persisted when the members mostly operated in different positions on the disability health care chain. Despite their different operating logics (public, private, and NGOs), it was clear to all organizations that improving the disability health care field as a whole would improve their own operations and businesses. Even competitors of private prosthesis service providers saw that they were in the same situation and that the effectiveness of the whole health care system was to their benefit. Thus, it was easier to frame a system-level goal when the members shared a common knowledge base that improved their ability to understand each other's operations, needs, goals and organizations. In contrast, newcomers came from different fields, had diverse operating logics, and were not able to see the benefits of improving the disability health care field. One peripheral actor described the conflicting interests as follows:

"On the abstract level, there might be some [shared goals/vision]. However, we don't have any real co-operation with the other organizations within Rehapolis besides the practical [property management-related] issues. ... We do not participate in the board meetings. We pay some kind of joint marketing fee, but that is not very remarkable."

In HealthPark, the new members were invited to development meetings based on their potential complementary resources. Despite the wide variety of health care disciplines (e.g., dentistry, orthopedics, physiatry, and neurology), all of the members shared the same domain of private health care and a goal to pursue competitive advantage. Therefore, in the development board meetings, every member spoke the same language and targeted similar organizational goals (e.g., improved health care business) despite their different specializations in the health care value chain. Thus, due to a moderate level of domain similarity, it was easier for managers to find common ground to form the system-level goal.

The two cases show that domain similarity can result from different sources, but also that a too high level of domain similarity may potentially hamper the formation of a system-level goal due to increased rivalry. For example, if all of the HealthPark organizations had operated in only one health care specialty, there would not have been less synergy to achieve since the organizations would have been direct rivals.

Based on the above, we argue that domain similarity facilitated collective goal formation, resulting in the system-level goal when managers shared a common vocabulary and knowledge base to help them make sense of the situation and jointly frame the system-level goal; however, excessive domain similarity can confound this process due to increased rivalry. Based on this, we propose:

Proposition 4. Domain similarity exhibits a curvilinear (inverted U-shaped) moderating effect on the relationship between collective goal formation and the system-level goal.

4.4. Network architect - an important mediator and moderator

In both cases, goal formation in the board meetings was primarily facilitated by a few key individuals, which we label *network architects*. These individuals, such as the Prosthesis Foundation CEO and the Disabled Association COO in Rehapolis and the Orton CEO with an external consultant in HealthPark, formulated an initial vision of the system-level goal. In addition, the architects facilitated member selection by inviting organizations with specific backgrounds to the development meetings or suggesting new members to the development board.

"When it comes to this modern Orton Foundation, the present CEO has done a great job in bringing new, fresh ideas and much-needed business knowledge." - A senior executive in HealthPark.

"Former COO of the Disabled Association and the CEO of the Prosthesis Foundation put their heads together: They had the vision. The Prosthesis Foundation had a strong economy, and the COO of the Disabled Association had a wide political network and expertise." - A manager in Rehapolis.

The architects themselves saw their facilitating roles as important, yet time consuming. They noticed that even though decisions were made collectively, their input as facilitators was required:

"For us, the key lesson from this [network development phase] was that we need to invest resources in this [network development]. It does not happen by itself." - One of the network architects.

Therefore, our findings indicate that a certain level of centralized facilitation is required to mobilize other actors in collective goal formation. We argue that the architects facilitated collective goal formation by first inviting multiple organizations to the board meetings and then formulating the initial vision through their own interpretations. The initial vision formed a cognitive baseline for further collective framing efforts in the board meetings. The network architects also had their own ideas about who should be included in the network, establishing the premises for membership criteria that the boards then jointly agreed upon. Therefore, while facilitating member selection, the architects affected the degree of domain similarity within the network. These findings lead us to our final propositions on the network architects role:

Proposition 5a. A single network member's (a network architect's) mobilization efforts (e.g., envisioning, framing, and organizing the coordinating bodies) positively moderate the relationship between collective goal formation and the system-level goal.

Proposition 5b. A single network member's (a network architect's) mobilization efforts (e.g., inviting new members and sketching membership criteria) may ensure an optimal level of domain similarity within the network. Thus, an effect of the network architect on domain similarity is mediated by membership selection practices.

4.5. A conceptual model for the collective formation of a system-level goal

Fig. 1 illustrates the conceptual model of our empirical findings. The nodes in the figure illustrate the essential concepts identified in the empirical analysis (the bolded titles) and provide them with more in-depth operationalization (the following text). The arrows between the nodes illustrate the propositions by determining the direction and sign of the relationship between the concepts. Overall, the model links the system-level goal, its antecedents, and moderating factors to network-level value creation. The rightmost node depicts network-level value creation operationalized as innovative network-level outcomes, such as new, comprehensive health care operations. As [propositions 1 and 2](#) indicate, such outcomes require network members to invest their resources in collective actions (the second node on the right), which occurs in the presence of a clear system-level goal (the node in the middle) that defines the network-level value creation but is also perceived as beneficial by the network organizations.

The four nodes on the left depict a key antecedent (collective goal formation) and two moderators (network architect mobilization, member selection practices and domain similarity) that affect the system-level goal. A system-level goal is a direct result of collective goal formation efforts in which multiple actors participate in making sense of the situation and framing the goal accordingly ([proposition 3](#)). The two arrows pointing to the arrow between collective goal formation and the system-level goal illustrate the moderating effects of domain similarity (a curvilinear effect) and a network architect's mobilization (a positive effect) according to [propositions 4 and 5a](#). Finally, the upmost arrows from network architect node to member selection and domain

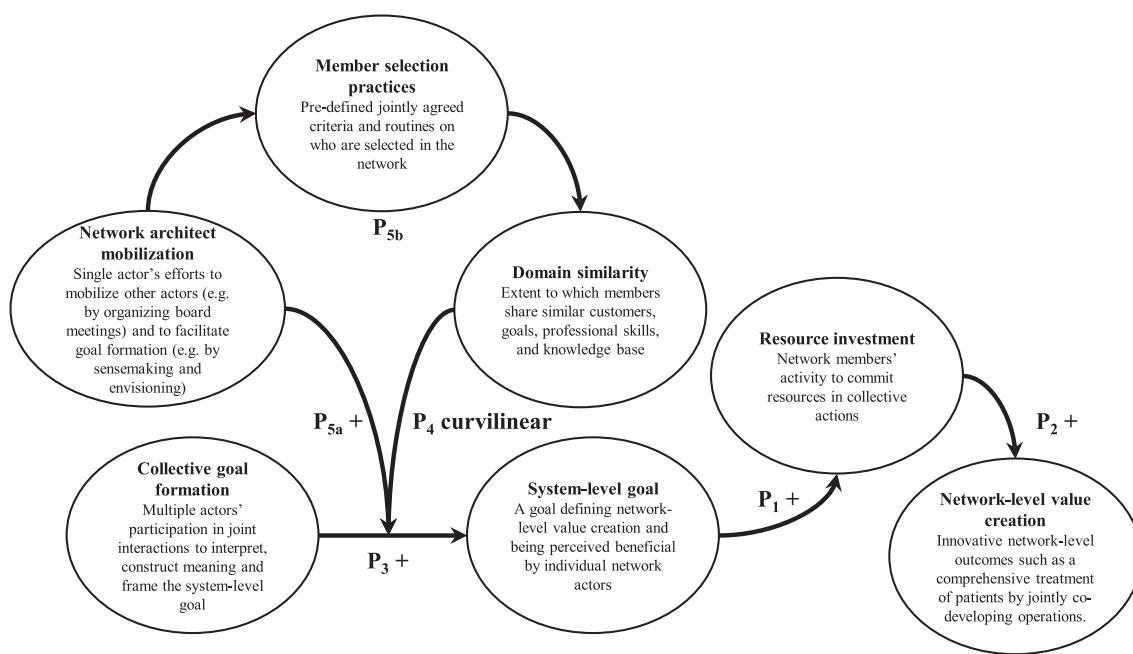


Fig. 1. A model for the collective formation of a system-level goal and its influence on value creation.

similarity 5b, which states that when mobilizing other actors, the network architect may affect member selection practices (e.g. by establishing a jointly agreed membership criteria) and therefore regulate the level of domain similarity within the network.

5. Discussion

In this paper, we have investigated how multiple organizations can collectively form a system-level goal, which then influences value creation in the whole network. The two analyzed empirical cases have shown that the determination of the system-level goal requires the participation of multiple actors in framing and agenda construction, which makes it a complex and collective endeavor, not a task for a single firm. Provan and Kenis (2008) have similarly posited that shared network management may lead to actors' commitment and positive network-level outcomes if certain contingency factors such as trust and goal consensus within the network are high. Our empirical findings complement this view by showing that when certain actors actively invite other actors to jointly form goals for the network, it is likely to result higher goal consensus, trust and actors' commitment within the network. These findings further solidify the perspective to depict networks as manageable entities (Järvenpää & Möller, 2009). However, as our cases indicate, management is not authoritarian but is rather a collective duty of multiple actors who jointly form the goals and routines within the network; a notion shared by recent theorizing on meta-organizations (Gulati et al., 2012).

More precisely, our findings indicate that the collective formation of a system-level goal is crucial to networks in pursuing new value creation and innovation (Aarikka-Stenroos & Lehtimäki, 2014; Möller & Rajala, 2007). In both case networks, the new comprehensive value-creating system was constructed requiring the actors to combine their dispersed knowledge in order to jointly make sense of the required resources and actors and co-create the resources (as discussed by Möller & Svahn, 2006; Rusanen et al., 2014). Most of the network members did not, or would never, have direct business relationships with each other because they represented divergent entities such as public organizations, private firms, and NGOs, but their input was still necessary for the formation of a system-level goal, as has been discussed in innovation commercialization literature (e.g., Aarikka-Stenroos et al., 2014).

Furthermore, as the Rehapolis case shows, joint interpretation and meaning construction in an ambiguous situation through sensemaking and joint interaction among network members was necessary for formulating both an initial idea about the nature of the issue in the disability health care field and the vision for the network. Only after efforts like issue framing and envisioning have been undertaken, actors can determine the necessary goals and mobilize new actors. Proposition 5a suggests that network architects can facilitate the collective goal formation and sensemaking process by sharing their vision on which other actors can continue building. In other words, when facilitating the sensemaking process, the network architect engages in sensegiving (Gioia & Chittipeddi, 1991), as demonstrated also in an environmental development case on the Baltic Sea (Ritvala & Salmi, 2010) where active network mobilizers framed the issue about poor environmental conditions in order to mobilize other actors. Therefore, we posit that the formation of a system-level goal or agenda construction in emerging business networks can be understood as a collective and interactive endeavor spanning organizational boundaries and requiring input from diverse actors (as discussed by Medlin & Törnroos, 2014). However, a certain organization with strong framing and envisioning capabilities (Möller, 2010; Möller & Svahn, 2009) can facilitate the process through active sensegiving.

As proposition 4 suggest, the collective formation of the system-level goal is further moderated by domain similarity. It was not a great surprise that organizations operating in a similar domain jointly formed the case networks when, for example, a common knowledge base enhanced interaction between new and old members (Boschma, 2005). Thus, our findings build on Van de Ven's (1976) classical view that domain similarity that is neither too low (resulting in diverging interests) nor too high (resulting in rivalry) is optimal for the formation of a system-level goal. On the other hand, low domain similarity is argued to indicate the existence of diverse resources in the network, potentially leading to improved innovation (Corsaro et al., 2012). Interestingly, in the two examined networks, this was not the case, but the network members viewed high heterogeneity as rather negative and disruptive. One potential explanation is that the formation of a system-level goal is not a rational process but involves social interaction, which is strongly moderated by complex factors such as identity (Ostrom, 1990; Raab & Kenis, 2009; Van Zomeren, Postmes, & Spears, 2008) and social cognition (Cantù, 2010). In other words, individuals tend to favor

similar kinds of people instead of working with complete foreigners. These findings complement the research on network member selection, which is traditionally based on the complementary resources of new members (Hitt et al., 2000). In the proposed collective action approach, member selection is more complicated, underlining the importance of domain similarity not just through similar resources, operations, and goals (Van de Ven, 1976), but also through a shared value base and common identity among network members, as has also been discussed by Ritvala and Salmi (2010).

Finally, concerning propositions 5a and 5b, we see that our findings on the architect's role as a facilitator of collective goal formation and member selection helps explain possible hybrid models of network management (in contrast to a dichotomy between centralized and decentralized) as coined by Provan et al. (2007). Despite the clear benefits of the architect for collective goal formation, the architect's role is not free of problems. For example, Olson (1965) claimed that actors possessing greater resources will often invest more in collective actions, potentially leading to collective inaction such as free riding among peripheral or "poorer" actors. As our findings showed, network architects carried an extra responsibility while orchestrating goal formation without any direct, short-term business benefits. Past literature suggests that the motivation of network architects to take such actions may derive from the altruistic pursuit of the common good (Ritvala & Salmi, 2011), but also that long-term business benefits seem to be necessary antecedents to any mobilizing efforts (Mouzas & Naudé, 2007). In the Rehapolis case, the Prostheses Foundation CEO acted altruistically and invested in developing local disability health care, but there also existed long-term business opportunities through increased collaboration between the public and private sectors. This underlines the importance of the capability of turning the collective interest of the whole network into a self-interest gain for a single organization (Matinheikki, Rajala, & Peltokorpi, 2016; Munksgaard & Medlin, 2014). Based on our findings, we argue that such a capability is essential for both the network architect and other network actors. As indicated in our first proposition, the system-level goal determines the effectiveness of the whole network (collective gains), but the majority of network members need to perceive it as beneficial to themselves (self-interest gains). Thus, combining these interests seems to remain as one of the great managerial challenges of the network era.

6. Conclusions

6.1. Theoretical contributions

By analyzing two health care business networks, we have developed six propositions and a conceptual model that describe how multiple organizations can collectively form a system-level goal for new value creation in their network. These findings contribute to the literature on the management of business networks in three ways.

First, through our conceptual model we provide new understanding to the recent theorizing on goal and agenda construction in emerging business networks (Medlin & Törnroos, 2014; Möller, 2010.) We further complement this perspective by underlining the importance of a system-level goal, which network actors collectively form through joint efforts of framing and sensemaking. Thus, the system-level goal is the explicit outcome of the framing process and gives a direction to emerging business networks and new value creation. When multiple actors form the system-level goal collectively, they can better understand how collective interest can be turned into self-interest gains (Munksgaard & Medlin, 2014), leading to value creation at the level of both the network and single firms. Such an interactive process is moderated by the extent to which network actors have similar operations, customers, goals, and knowledge bases (defined as domain similarity) and are facilitated by a single actor, the network architect.

Second, by utilizing a concept of domain similarity, we complement the existing view of member selection in business networks (Hitt et al.,

2000; Möller & Törnroen, 2003), which we see as an important management function for the system-level goal. Our findings indicate that complementary resources are necessary for achieving the system-level goal and developing the network as a whole value-creating system, but that moderate levels of domain similarity such as a common knowledge base and shared values are required to facilitate collective goal development and actors' commitment. Therefore, member selection is not a deterministic process, but always incurs high levels of social interaction when actors try to jointly negotiate and agree upon the goals as well as necessary value-creating activities. This underlines the importance of actor mobilization (Ritvala & Salmi, 2010). One cannot hierarchically manage such interaction but only mobilize other actors through envisioning and framing. These tasks of the network architect or mobilizer are crucial moderators of collective formation of a system-level goal.

Third, we contribute further empirical evidence to the promising research stream of collective action in network management (e.g., Munksgaard & Medlin, 2014; Provan & Kenis, 2008; Ritvala & Salmi, 2010), which has also been discussed in the meta-organization literature (Ahne & Brunsson, 2005; Gulati et al., 2012). The collective action approach demonstrates that networks can be effectively managed without hierarchical power over others as based on legal relationships, but rather through jointly developing a system-level goal and routines for its achievement. As our findings suggest, the approach seems especially suitable for reaching network-level outcomes in networks aiming for new value creation and innovation.

6.2. Managerial implications

This study has three significant implications for managers. First, we posit that collective determination of a system-level goal is important activity to enhance value creation on the network level, which could then produce benefits for individual organizations. Even a strong individual organization should not solely dictate the network's goals, but rather define them jointly with other actors in order to improve goal consensus and commitment to collective actions.

Second, we argue that managers responsible for inter-organizational relationships are not managers in a traditional sense but should adopt the role of architects who facilitate shared decision making. Joint coordination boards with frequent meetings allow members to participate equally, making the network less vulnerable to member exits and changes in single firms' strategies. An architect can adopt a hybrid role of visionary and facilitator, first to form and express an initial vision of the goal, and second to coordinate collective sensemaking by leading joint negotiations to develop the vision further toward a system-level goal. This requires extensive knowledge of the field combined with creativity.

Third, managers should pay attention to member selection, which is a crucial process both in creating the network and in maintaining its vitality. Architects should facilitate selection of members by suggesting pre-defined member selection criteria, which then ensures a right degree of domain similarity among network members. In the ideal situation, network members share a common value and knowledge base that facilitates sensemaking on goals but also provides complementary resources to help networks jointly offer comprehensive offerings to customers.

6.3. Limitations and avenues for further research

Our study analyzed two Finnish health care networks and, as such, it is contextually limited by sector and geography. Other networks in other contexts might have different operating logics. Furthermore, the network boundaries were purposefully limited to two campuses, and we did not analyze organizations' connectivity to external actors or networks, which would have affected value creation in the analyzed networks (Boschma & Ter Wal, 2007). As a result, high boundary conditions apply to the generalization of our conceptual model and the six propositions. Therefore, we call for both quantitative research to

further develop and test our propositions and in-depth, qualitative research to identify other possible constructs and explain their nature in the formation of a system-level goal and its relation to value creation in strategic networks.

In addition, the propositions developed here about the intertwined nature of the constructs and the conceptual model show similarities with previous attempts to develop network creation processes (e.g., Partanen & Möller, 2012). Based on these findings, we welcome future research on a more generalized process of collective approaches in creating new business networks.

Appendix A. Lists of informants and organizations

Table A1

The list of informants and organizations in the HealthPark network.

No.	Informant	Organization	Description of the organization
1	Real Estate Manager	Orton Foundation	<ul style="list-style-type: none"> • A foundation providing private services for orthopedic health care, rehabilitation, scientific research, and educational supply • Operates in HealthPark through three subsidiaries: Orton Hospital, Orton Rehab, and Orton Pro • Former owner of the Prostheses Foundation (until 2014) • A subsidiary of Orton operating a private orthopedic hospital • Hospital was founded for the rehabilitation of Second World War veterans • Highly appraised in the field of clinical research and operations in orthopedics • A private company providing all services for assistive devices • Earlier a subsidiary of the Orton Foundation • Fully sold to a multinational assistive device company in 2014 • Headquarters in HealthPark and operates a regional center in Rehapolis • A private company providing assistive devices and domestic aid products as well as nursing and cleaning services for disabled and elderly people • Executives had personal relationships to Orton's top managers and became interested in the network concept, which led the company to move to the Orton campus
2	Chief Executive Officer (CEO) (until late 2014)	Orton Orthopedic Hospital Inc.	
3	Regional Manager	Prostheses Foundation	
4	CEO COO	Disability Service Inc. (a pseudonym)	
5	Manager	Orton Pro	<ul style="list-style-type: none"> • A subsidiary of Orton providing a wide variety of professional education services, e.g., for patients requiring re-education after serious accidents • See the explanation above • See the explanation above • See the explanation above
6	CEO	Prostheses Foundation	
7	CEO	Orton Foundation	
8	CEO	Orton Orthopedic Hospital	
9	Director	University Hospital neurosurgery unit	<ul style="list-style-type: none"> • University Hospital's neurosurgery unit leases one operation room from Orton Hospital to gain extra capacity • University Hospital's main campus is located two kilometers from HealthPark • A vocational school for secondary level remedial education • Originally founded around the re-education tradition in Orton hospital, from where it diverged to an independent vocational school • Currently an independent actor moving to new premises in 2017 • See the explanation above
10	Former Headmaster (until the end of 2014)	Central Park Vocational School	
11	Former CEO (until late 2012)	Orton Foundation	
Observations			
<ul style="list-style-type: none"> • Two (2) development board meetings, approximately 90 min each • Workshop facilitation: 3 h • Thirteen participants from local health care associations (NGOs) developing a vision for HealthPark in June 2015. Six facilitators from the research group (including all of the authors) 			

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Table A2

The list of informants and organizations in the Rehapolis network.

No.	Informant	Organization	Description of the organization
1	Chief Executive Officer (CEO) (until late 2014)	Prostheses Foundation	<ul style="list-style-type: none"> • A private company providing all services for assistive devices • Earlier a subsidiary of the Orton Foundation • Fully sold to a multinational assistive device company in 2014 • Headquarters in HealthPark and operates a regional center in Rehapolis
2	Service Manager	Resta Inc. (a pseudonym)	<ul style="list-style-type: none"> • A company providing restaurant and catering services on Rehapolis campus • Previously took care of small facility management tasks in Rehapolis, such as guest reception, keys, access control, etc.
3	Regional Manager	Prostheses Foundation	<ul style="list-style-type: none"> • See the explanation above
4	CEO	Fysio (a pseudonym)	<ul style="list-style-type: none"> • A private company providing various physiotherapeutic services • CEO is a current chairperson of a Rehapolis development board • Joined Rehapolis in 2010
5	Chief Operating Officer (COO)	Assistive Device Unit	<ul style="list-style-type: none"> • A public organization providing public assistive device services (prostheses, walking aids, etc.) • One of the largest actors in Rehapolis • Formed through a merger of assistive device units in the City of Oulu and the Hospital District in 2009
6	COO	Disabled Association	<ul style="list-style-type: none"> • An association representing disabled people • Close collaborator with private and public service providers of assistive devices offering consultation and peer support for disabled patients
7	COO	Rheumatism Association	<ul style="list-style-type: none"> • An association representing and supporting rheumatic patients by offering guidance, help, and education about rheumatism • Among the first operators in Rehapolis, since 2004
8	CEO	Hearing Inc. (a pseudonym)	<ul style="list-style-type: none"> • A private company providing solutions for the hearing-impaired • Previously a subsidiary of the Prostheses Foundation • Among the first operators in Rehapolis, since 2004
9	COO	Wellness Tours (a pseudonym)	<ul style="list-style-type: none"> • A private company focusing on wellness tourism and operating a rehabilitation and wellness center • Among the first operators in Rehapolis, since 2004
10	CEO	Active Inc. (a pseudonym)	<ul style="list-style-type: none"> • A private company providing various services for medical, social, and professional rehabilitation (e.g., occupational and speech therapy) • Joined Rehapolis in 2008
11	CEO	Hospital Property Management	<ul style="list-style-type: none"> • A public actor responsible for University Hospital's property investments and management • Joint owner of the Rehapolis 2 building together with the Orton Foundation
12	Service Manager	Facility Mgmt Inc. (a pseudonym)	<ul style="list-style-type: none"> • Facility management company that took over the facility management of Rehapolis premises in 2014
13	Service Manager	Occupational Health Inc. (a pseudonym)	<ul style="list-style-type: none"> • A private health care company • Offers occupational health care services for University Hospital • Joined Rehapolis in 2010
14	Former CEO (2nd interview)	Prostheses Foundation	<ul style="list-style-type: none"> • See the explanation above
15	Regional Manager	AsDevice Inc. (a pseudonym)	<ul style="list-style-type: none"> • A private company providing assistive devices • Joined Rehapolis in 2010
16	COO and director of Rehapolis (until late 2012)	Disabled Association	<ul style="list-style-type: none"> • See the explanation above
17	CEO	Implant Inc. (a pseudonym)	<ul style="list-style-type: none"> • Private start-up company developing innovative bone implants • Joined Rehapolis 2 in 2008
18	Administrator (until 2009)	Prostheses Foundation	<ul style="list-style-type: none"> • See the explanation above
19	COO (2nd interview)	Assistive Device Unit	<ul style="list-style-type: none"> • See the explanation above
20	Regional Manager (2nd interview)	Prostheses Foundation	<ul style="list-style-type: none"> • See the explanation above
21	COO (2nd interview)	Disabled Association	<ul style="list-style-type: none"> • See the explanation above
22	CEO (2nd interview)	Fysio Inc.	<ul style="list-style-type: none"> • See the explanation above
23	Rehabilitation Nurse	University Hospital, Rehabilitation unit	<ul style="list-style-type: none"> • The unit is responsible for the rehabilitation of amputated patients and coordinates the post-amputation treatment chain • Not located on the campus, but closely connected to the Assistive Device Unit and private service providers at an operational level

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