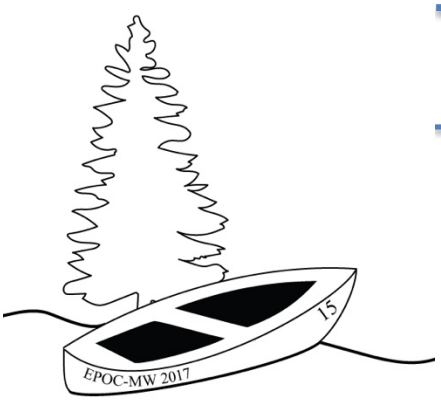

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Shedding Light to A Permanent-Temporary Dilemma by Investigating Projects as Complex Inter-Organizational Systems

Juri Matinheikki, Aalto University, Finland

Antti Peltokorpi, Aalto University, Finland

Proceedings Editors
Ashwin Mahalingam, IIT Madras, Tripp Shealy, Virginia Tech, and Nuno Gil, University of Manchester

SHEDDING LIGHT TO THE PERMANENT-TEMPORARY DILEMMA BY INVESTIGATING PROJECTS AS COMPLEX INTER-ORGANIZATIONAL SYSTEMS

MATINHEIKKI J[1]; AND PELTOKORPI A[2]

ABSTRACT

A project can be seen as a complex temporary organization, which integrates the efforts of multiple permanent organizations aimed to deliver transition and produce a tangible end-product. However, temporary organizations requires different management approaches than traditional permanent organizations potentially causing problems, when these two distinctive forms of organizing collide. Previous project management research has dealt with the temporal dimension by defining project as a complex system developing in time. However, we do not still fully know how such multi-organizational system evolves before, during and after the project, thus what roles temporary and permanent organizing have on a complete system lifecycle. We address a research question: How do temporary and permanent organizing coexist and how their management differs on the lifecycle of a complex inter-organizational system? Through a qualitative single case study, we map different activities occurring on the lifecycle of an inter-organizational system of Rehapolis, which is a disability health care campus and a local health care service network. In order to illustrate the dynamism of such system, we use qualitative data for social network analysis (SNA) to draw inter-organizational network in three different lifecycle phases. Our findings underline the importance of system lifecycle perspective in project management. The conceptualization of a project as a distinct phase on a longer lifecycle of a complex inter-organizational system allows us to better understand the high dynamism within such system helping distinguish between temporary and permanent organizing and their management. Finally, we present five differentiating features of the two parallel organizing forms.

KEYWORDS: project lifecycle; inter-organizational network; temporary organizing; complex systems; stakeholder dynamics

[1] Doctoral Candidate, Department of Industrial Engineering and Management, School of Science, Aalto University, Finland, Phone +358 50 442 0208, juri.matinheikki@aalto.fi

[2] Assistant Professor, Department of Civil Engineering, School of Engineering, Aalto University, Finland, Phone +358 50 371 6613, antti.peltokorpi@aalto.fi

INTRODUCTION

During the past decades increasing amount of global economic activity is undertaken through projects which have become a mundane form of organizing mainly due their effectiveness to manage complex business tasks (Packendorff & Lindgren, 2014; Scranton; 2014; Söderlund & Tell, 2009). Projects are typically described as temporary organizations (Lundin and Söderholm, 1995; Packendorf, 1995) used as vehicles of change (Turner & Müller, 2003) and as special forms of organizing (Söderlund, 2004) to deliver complex socio-technical systems ranging from airports to nuclear power plants (Davies, Brady & Hobday, 2006; Hobday, 2000). Such major undertakings are usually taken as inter-organizational projects (Jones & Lichenstein, 2008), in which multiple organizations need to integrate their efforts for a temporary period of time (Davies, Gann, & Douglas, 2009). Thus, organizational integration (Lawrence & Lorsch, 1967) requires to go past organizational boundaries when different capabilities of system component deliveries are combined to build a value creating end-product of a project (Morris, 2013). After a project, a temporary organization is typically dismantled through institutionalized termination (Lundin & Söderholm, 1995). However, the end-product of the project begins to create value after the project, thus the end-product is more permanent (Artto, Ahola & Vartiainen, 2016; Winter, Smith, Morris, & Cicmil, 2006). Therefore, projects are temporary by their nature but have a permanent impact which blurs a line between temporary and permanent organizing.

Such dilemma between temporary and permanent nature of projects has intrigued researchers. Organizations undertaking projects tend to have permanent organizational structures allowing for example project-to-project learning (Artto and Kujala, 2008). In addition, temporary organizing can be used for renewing permanent organizations (Anell and Wilson, 2002; Turner and Müller, 2003). Projects may also be tightly linked to permanent organizations e.g. through shared resources (Modig, 2009). Temporary-permanent relation may thus be looked through interfaces between temporary projects and permanent organizations such as project-based firms, owners and operators (Winch, 2014). The concept of extended project lifecycle (Morris, 2013) or system lifecycle (Artto et al., 2016) depicts project as a distinctive phase on a long-term continuum of value creation which occurs in the front-end design, implementation and operations phases of complex systems.

Despite these efforts, the relationship between permanent and temporary organizing has maintained unclear especially when projects are seen from a two-fold perspective as temporary organizations producing permanent value creating outcomes including both technical and organizational elements. For example, when an inter-organizational project, such as constructing a nuclear power plant, is depicted as a socio-technical system or as a network of multiple actors existing for several years (Ruuska, Ahola, Artto, Locatelli, & Mancini, 2011), it is by no means clear what in such a complex system can be treated as permanent or temporary and how such systems dynamically evolve in time considering also time periods before and after the project (Aaltonen & Kujala, 2016; Artto et al., 2016). This motivates us to address a research

question: How do temporary and permanent organizing coexist and how their management differs on the lifecycle of a complex inter-organizational system (or before, during and after a project)?

To elaborate these emerging theoretic views of inter-organizational projects and system lifecycle, we conduct a qualitative single case study of a Rehapolis health care campus, in which multiple organizations participated in project-based organizing to build new premises for disability health care services, but also in long-term efforts to create and develop a permanent network of actors providing such services. In our analysis, we combine inductive qualitative analysis to social network analysis (SNA) in order to better illustrate the dynamic nature of the complex inter-organizational system on its lifecycle.

Based on our findings, we argue that such system includes two separate entities, or in network terms *cliques*, a temporary and a permanent clique. Temporary clique aims to produce a tangible end-product of a project, or a technical system such as campus buildings. In contrast, the permanent but dynamic clique is associated with developing an intangible end-product of an organizational or a social system, such as the network of health care service providers operating in the campus. From these empirical findings, we formulate a framework of the system lifecycle depicting the dynamism of the networked system and related activities. Furthermore, we identify five diverging themes between concurrent temporary and permanent forms of organizing.

Our study provides four contributions to project management research. First, it further solidifies the importance of extended or system lifecycle perspective in project management. Without clearly understanding what happens before and after the project, project managers keep micro managing the project according the classical but oftentimes non-context relevant criteria. Second, the novel conceptualization of a project as a distinct phase on a lifecycle of a complex inter-organizational system could be illustrated through network analysis revealing the high dynamism within such system. Thirdly, such conceptualization further helps us to better distinguish between temporary and permanent organizing and management them accordingly. Fourth and final, we present five differentiating features of the two parallel organizing forms.

THEORETICAL BACKGROUND

Projects as temporary organizations are powerful forms of organizing for delivering transition and change (Lundin & Söderholm, 1995. Packendorf, 1995; Turner & Müller, 2003). The change can be achieved through developing a new, or altering an existing, non-living technical system as well as a living organizational system (Artto et al. 2016). These two systems thus form the different outcomes or end-products of a project (Morris, 2013).

When the focus is turned into the organizational system, ontological challenges may arise when temporary organizations are tried to be linked with the permanent organizations. For example to what extent, the temporary organization is dependent on permanent parent organizations and vice versa? Anell and Wilson (2002) posit that permanent organizations always require some temporary endeavors to keep themselves from away stagnating state and building organizational inertia. Modig (2007) concludes

that permanent and temporary organizational structures serve different purposes, i.e. temporary organizations suit better to tasks with great deal of uncertainty. On the other hand, Winch (2014) argues that permanent and temporary organizing is actually linked through relationships between multiple organizations for example asset owners and project-based firms. Temporary organization formed in projects or programmes may then facilitate these inter-organizational relationships by forming a temporary platform in which permanent relationships spanning beyond a single project may emerge.

Despite these efforts, the relationship between temporary and permanent organizations remains ambiguous leading to calls for research on how project constellations with varying degree of permanent and temporary actors may dynamically change through the project lifecycle (see e.g. Aaltonen & Kujala, 2016; Artto et al., 2016; Winch, 2014). To understand these aspects better, the following sub-sections explores past research of the project life cycle as well as inter-organizational relationships in projects.

Project and system lifecycle

By their definition temporary organizations are planned to be temporary thus they have a limited lifetime, when permanent organizations are considered to thrive for unknown period of time (Anell & Wilson, 2002). The tasks to achieve the end-product of a project, are thus organized on a lifecycle of a project (Morris, 2013). Various different presentations of a project lifecycle has been suggest varying from cyclical to linear with varying phases from design to implementation and close-up (Lundin & Söderholm, 1995; Morris, 1994). Recent research has highlight that it is not necessary to explicitly map out the distinct phases inside the project, but to also consider pre- and after project phases on extended project lifecycle or even system lifecycle (Aaltonen, Kujala, Havela, & Savage, 2015; Artto et al. 2016; Matinheikki, Artto, Peltokorpi & Rajala, 2016; Morris, 2013). Such views underline that a project is just a part of a longer system lifecycle in which value creation is strongly temporally depended, meaning that temporary organizing of a project aims to develop a system, which then creates value after the project itself has been terminated.

Therefore, an essential question for unlocking temporary permanent dilemma is what happens before and after the project? Research on project-based firms and project business (Artto & Kujala, 2008; Hobday, 2000; Wikström, Artto, Kujala, & Söderlund, 2010) addresses these questions by showing that certain permanently structured firms do business by continuously organizing and managing temporary project teams, which develop and deliver complex solutions. Thus, a project-based firm provides a permanent frame for developing required specialized organizational capabilities and facilitate learning from project-to-project (Davies & Brady, 2000; Whitley, 2006). This project-to-project view is the essence in the theory of project-based firm by providing the linkage to permanent organization but simultaneously does not fully address the question of what happens to a single project's outcome, when the project-based firm has finished the project, exists the project site and moves to another. One way to look at the project as being just a part of a whole system is the integrated solutions theorization, which dilutes

the line between project and operations management by moving the emphasis to developing, delivering and operating total lifecycle solutions (Davies et al., 2006).

At this point, we conclude that temporary-permanent dilemma manifests itself rather differently if one analyzes permanency of the organization delivering projects (e.g. a project-based firm) compared to permanency of the project's outcome or a system in which the project is embedded in. In this study, we focus on the latter, but see such system more than a pure technical outcome or a capital good and additionally focus on the social or organizational dimension of such outcomes.

The role of inter-organizational relationships in projects

Developing and delivering complex systems requires inputs of multiple organizational entities forming an inter-organizational project, which is a temporary organization gathering multiple organizations with diverging backgrounds and practices to work towards a common goal for a limited period time (Jones and Lichenstein, 2008). However, the literature on project-based firms or systems integrators focuses mainly on goals and business purposes of single company and does not take into account the development of inter-organizational relationships and structures of a project network during a system lifecycle. Traditionally, the project network is seen as dynamic set of organizational actors emerging on project lifecycle, but dismantling after the project (Hellgren & Stjernberg, 1995; Ruuska et al., 2011). Additionally, past literature has sought to understand the development of long-term inter-organizational relationships to certain key actors during project implementation phase in order to improve future's business opportunities (see e.g. Ahola, Kujala, Laaksonen, & Aaltonen, 2013; Cova, Ghauri & Salle, 2002; Skaates, Tikkanen & Lindblom, 2002). Thus, such project marketing focused literature emphasizes the benefits of building long relationships between project-based firms and its suppliers and customers.

Despite its theoretical soundness and great practical applicability, such views do not account the formation of permanent relationships in the context of a single project. When notifying the cultural and historical embeddedness of a project meaning that a project has always its own unique history (Engwall, 2003), a project can be seen as just an episode on a longer continuum. This leads us to assume that there may exist a somewhat permanent inter-organizational network already before the project in which the temporary organization form is embedded (as discussed by the authors of this paper in Matinheikki et al., 2016). This network may be expected also to exist after the project, in the following operations phase (Artto et al., 2016), but most likely it experiences changes when temporary actors enter and exit the network. Despite the recent efforts, project management research has not explicitly focused on the varying degrees of temporariness or permanency of the network of actors and says very little how such phenomenon should be taken into account when projects are managed. This motivates us to empirically investigate our research question: How do temporary and permanent organizing coexist and can be managed on the lifecycle of a complex inter-organizational system?

RESEARCH METHOD AND DATA

To deepen our understanding of temporary and permanent organizing on the system lifecycle, we conducted a qualitative single-case study of a Rehapolis health care campus. We retrospectively analyzed three different phases of Rehapolis from the front-end of the project to its implementation and the following operations phase. In Rehapolis, various public and private organizations participated in designing, developing, implementing and operating the health care campus, which offers wide variety of health care and wellbeing services to individuals with disabilities. To address our research question, we aimed to identify all key actors participating the project on different lifecycle phases (before, during and after the project) and pay especially attention to emergence and dynamic evolution of the inter-organizational network. We pursued to map interaction and activities within the network to draw three illustrations of the network at different phases enabling us to identify and make inferences about divergent approaches to manage temporary and permanent organizing on system lifecycle.

Instead of drawing highly generalizable conclusions, the purpose of the empirical study was to gain insight from a specific case with a unique context and history. Such research strategy allowed use of an theory-elaborating and abductive reasoning approach (Ketokivi & Choi, 2014), where our analysis makes new contributions to existing theory about project management through iterative review of the existing theory and comparing it to our case findings.

Case description

Rehapolis is a joint-campus combining multiple health care organizations and locating in the City of Oulu, Northern-Finland approximately 500 km from the capital Helsinki. Rehapolis consists of two buildings comprising 8,500 m^2 and currently hosts 19 different organizations ranging from private companies to public health care operators and non-governmental organizations (NGOs). The most of the actors operate in the field of disability health care, providing private and public assistive device and rehabilitation services. Rehapolis is more than a physical building since it forms a common identity for the campus actors creating an inter-organizational service network of local health care operators.

Initial idea of Rehapolis campus sparked in inter-organizational advisory board meetings organized by a Prosthesis Foundation chief executive officer (CEO) in the late 1990s. In the board meetings, a group of key actors in the local disability health care field (representatives of the Prosthesis Foundation, Disabled Association, University Hospital, and Municipal Assistive Device Unit) realized the poor status of local disability health care services, started pondering possible solutions, and came up with the idea of co-locating all the organizations in a new joint campus. Prosthesis Foundation led and financed the concept development and project implementation jointly with public actors of City of Oulu and Norther Ostrobothnia Health Care District. Idea creation and concept development began in 1998 followed by two-phased construction period of two campus buildings between 2002 and 2008. The campus has then be fully operational 2008 onwards. In our empirical case study, we focus on separately analyzing these three

explicit phases of the front-end (1998-2002), project implementation (2002-2008) and operations (2008 onwards).

Data collection

When choosing our case, we followed a theoretical sampling approach (Corbin & Strauss, 2014), meaning that we aimed to collect empirical data giving us better understanding of development of the inter-organizational system on its lifecycle. As described above, Rehapolis met well the criteria. While choosing our informants, we followed snowball sampling (Biernacki & Waldorf, 1981) meaning that we identified our informants or other sources of information based on the insights and needs cumulating during the research process.

Thus, in order to understand the history of Rehapolis and its lifecycle, we started interviewing the largest organizations (Assistive Device Unit, Prosthesis Foundation, Medifys and Uniresta) in Rehapolis as well as the representatives of a current property owner, Orton Foundation. This first round of interviews led us to interview representatives of sixteen different organization belonging to the Rehapolis network in order to map out Rehapolis' development history from the perspective of each health care organization within the campus. The chosen informants were top managers or executive being responsible for decisions to participate in Rehapolis, allowing us to gain knowledge about the reasons for their participation as well as their role in the evolving network. Some informants were interviewed twice to get confirmation on the emerging themes. In total, we conducted 26 interviews lasting 80 minutes on average. All interviews were recorded and transcribed verbatim. Our informants are listed in Table 1 in chronological order of conducted interviews with a short description of each organization as well informant's current or past role in the organization.

All our interviews were conducted in the winter 2014-2015. Therefore, we collected information about the earlier phases retrospectively. In order to avoid retrospective bias, we triangulated the interview data with internal and open-source documentation of the Rehapolis project, such as meeting memos, project marketing presentations, blueprints, news articles and even a personal biography of one key person responsible for the project.

Data analysis

We started our data analysis by utilizing thematic coding approach (Corbin & Strauss, 2014) to sort out the interview and supportive data. We used the project phases (front-end, implementation and operations, see e.g. Morris, 2013 and Artto et al., 2016) as our main thematic categories to sort our vast empirical data. In so doing, we created a chronological narrative of the main events in the Rehapolis lifecycle from 1998 to 2015. We mapped the events and activities as expressed by our interviewees and utilized the given documents to triangulate the information on different events and phases to place them in a clear chronological order. In our analysis, we focused on lower level entities such as activities, choices, and meanings given to activities by individuals representing various organizations.

To better understand how the inter-organizational network evolved through time or to tease out the dynamic dimension of network-based organizing (permanent vs. temporary), we utilized our codified data to draw illustration of the network in each three analyzed phases. We drew three network pictures by utilizing the general procedure of social network analysis (SNA), which is an effective and widely used method to analyze relational data in a matrix format and illustrate such data through sociograms drawn according to principles of graph theory (Wasserman & Faust, 1994; Scott, 2000).

Table 1.
List of the Rehapolis organizations and informants

Organization name and description	Informants and their roles (in total 26)
Orton Foundation • Private foundation providing services for orthopedic health care, rehabilitation, scientific research, and education supply. • Joint-owner of Rehapolis 1 & 2 buildings (80% and 50% of the shares). • Former owner of Prosthesis Foundation (until 2014). Decided on Prosthesis Foundation's investment in the project.	• Real Estate Manager • CEO • Former CEO (until late 2012) • 3 interviews in total
Prosthesis Foundation • Private company providing all the services for assistive devices • During the time of the project subsidiary of Orton Foundation. • Fully sold to multinational assistive device company in 2014	• Former Chief Executive Officer (CEO) (until late 2014), 2 interviews • Regional Manager, 2 interviews • Former Administrator (until 2009) • 4 interviews in total
Resta Inc.(a pseudonym) • A company providing restaurant and catering services on Rehapolis campus • Previously took care of small facility management tasks in Rehapolis 1 such as guest reception, keys, access control etc.	• Service Manager • 1 interview in total
Fysio (a pseudonym) • A private company providing various physiotherapist services • CEO is a current chairwoman of a Rehapolis development board • Joined Rehapolis 2 in 2010	• CEO, 2 interviews in total
Assistive Device Unit • A public actor providing public assistive device services (prosthesis, walking aids etc.) • One of the largest actors in Rehapolis. • Formed through a merger of assistive device units of City of Oulu and Hospital District in 2009	• Chief Operating Officer (COO), 2 interviews
Disabled Association • An association representing disabled people • Close collaborator with private and public service providers of assistive devices offering consultation and peer-support for disabled patients	• Current COO, 2 interviews • Former COO and former director of Rehapolis (until late 2012) • 3 interview in total

Table 1 continued

Rheumatism Association • An association representing and supporting rheumatic patients by offering guidance, help, and education about rheumatism • Among the first operators in Rehapolis, since 2004	• COO • 1 interview in total
Hearing Inc. (a pseudonym) • A private company providing solutions for the hearing-impaired • Previously a subsidiary of Prosthesis Foundation • Among the first operators in Rehapolis, since 2004	• CEO • 1 interview in total
Wellness Tours (a pseudonym) • A private company focusing on wellness tourism and operating a rehabilitation and wellness center. • Among the first operators in Rehapolis 1, since 2004	• COO • 1 interview in total
Active Inc. (a pseudonym) • Private company providing various services for medical, social, and professional rehabilitation (e.g., occupational and speech therapy) • Among the first actors in Rehapolis 2, since 2008	• CEO • 1 interview in total
Hospital District • A public actor responsible special healthcare and operating a University Hospital's • Joint-owner (50% of the shares) of Rehapolis 2 building together with Orton Foundation through its property management unit • Operates own rehabilitation unit (not located in the campus) responsible for the rehabilitation of amputated patients and coordinates the post-amputation treatment chain	• CEO of property management unit • Rehabilitation Nurse • 2 interviews in total
Facility Mgmt Inc. (a pseudonym) • Facility management company, which took over the facility management of Rehapolis 1 premises in 2014.	• Service Manager • 1 interview in total
Occupational Health Inc. (a pseudonym) • Private health care operator • Offers occupational health care services for University Hospital • Joined Rehapolis in 2010	• Service Manager • 1 interview in total
AsDevice Inc. (a pseudonym) • Private company providing assistive devices • Direct competitor of Prosthesis Foundation • Regional manager was previously employed by Prosthesis Foundation • Joined Rehapolis in 2010	• Regional Manager • 1 interview in total
Implant Inc. (a pseudonym) • Private start-up company developing innovative bone implants • Joined Rehapolis 2 in 2008	• CEO • 1 interview in total

The basic idea of SNA is to analyze and illustrate a network of actors (being individuals, organizations or any other unit of analysis) through a sociogram consisting of nodes, which represent the actors while lines connecting the nodes representing

potential relationships between the actors. The relationships can be operationalized through any means of interactions between the actors such as membership in common boards, contractual relationships, official, unofficial correspondence, which can be represented in a numerical format in actor-by-actor matrix (Scott, 2000).

In order to map out the relationships in the Rehapolis' lifecycle, we quantified our qualitative data into a one-mode network (Wasserman & Faust, 1994). We chose one-mode network type, since we had not interviewed all of the actors during the long lifecycle of Rehapolis, but we relied on descriptions of certain informants as well as archival material, thus we did not always have the perspective of both actors in order to define the potential direction of the relationship (Scott, 2000). We utilized our coding of different activities and events to identify possible source of relationship between any two identified actors and listed it to three different data matrices describing each lifecycle phase by using MS Excel. The typical type of relational data included for example membership in a common board, contractual relationships, positioning in the Rehapolis campus and implementation of a common development project. The data matrices were square and adjacency type (i.e. companies-by-companies), where the rows and columns contained focal organizations in each lifecycle phase and the crossing cell included list of shared activities indicating a potential relationship (Scott, 2000). The crossing cell information was then converted directly to a numerical value equaling the number of different activities. See the appendix A for the matrices of the three lifecycle phases, describing the codified qualitative data on the lower left side of the diagonal, transformed into numerical value for social network analysis in the upper right side of the diagonal.

We then utilized the resulting numerical data matrices and converted them to a symmetric sociomatrices with UCINET 6 software. We used these sociomatrices to draw three sociograms (the network graphs) with standard Netdraw add-in of UCINET 6. These network graphs are shown in our results section and they illustrate the dynamic development of the inter-organizational network over the system lifecycle. We distinguished between the strong and weak ties by using a threshold value of three shared activities, meaning that we assumed actors to have a strong relationship when they share three activities for example participate in a joint board, share a common development initiative and are positioned in the Rehapolis campus. Thus, in our network diagrams, we sized the lines according the tie strength with the maximum value of three. This resulted thicker lines to describe strong ties.

From these three network graphs, we saw that certain group of key actors had participated in all the phases and that certain actors were active only in the project implementation. By using the basic terms of the social network analysis, we labeled these as separate network cliques, which we named a permanent and a temporary network clique. The illustration and identification of these two cliques was crucial for our abductive reasoning, since it allowed us to further focus our analysis to comparing the similarities and differences between these two cliques, which we then treated as embedded cases (Yin, 2013). By using an analogy of inductive cross-case study approach (Eisenhardt, 1989), we then compared these two cliques and found interesting differences between them, which helped us to address our research question. In total, we found five

divergent themes related to our theoretical background, which we saw to describe the differences between temporary and permanent organizing on the system life cycle.

EMPIRICAL FINDINGS

In this section, we first give a short version of our case narrative to give readers the basic understanding of the events on the Rehapolis lifecycle. The first three sub-sections describe each lifecycle phase accompanied with the respective network graph. To summarize our findings, we then illustrate the whole system lifecycle in Figure 4, which shows the analytical conceptualization of the three network graphs illustrating the dynamism of the inter-organizational system as well as summarizes the divergent activities of temporary and permanent organizing on the systems lifecycle. Finally, in the end of the section we report our cross analysis on these two different forms of organizing.

Front-end phase – From idea creation to concept development and funding decision

Rehapolis did not born by sudden, but it was a result of years-long inter-organizational activities. Prosthesis Foundation and its former CEO started to organize advisory board meetings in the beginning of 1990s in order to develop business of Prosthesis Foundation. Back then, the newly appointed new CEO came from different industry and wanted to gain better picture what was happening in the field of disability healthcare and invited key decision-makers from the different organizations in the Oulu region. The advisory board included physicians from Hospital District Disability Unit and Municipal Assistive Device Unit (which later merged into one Assistive Device Unit governed by the Hospital District), political decision-makers from the City of Oulu and a front man of a local Disabled Association. The advisory board organized regular meetings in which the board members discussed also on broad issues in the field of disability healthcare such as scattered service locations, poor premises of all the operators and poorly managed and greatly overlapping but poorly integrated services. They all felt that something had to be done in order to improve the situation and came up with the initial idea of Rehapolis during a train trip to Helsinki to visit a healthcare fair in 1998.

All the advisory board members agreed and supported the idea of shared campus between public, private and third party healthcare organizations. The first task was to gain stronger public support to the project. Therefore, CEO of Prosthesis Foundation saw it important to contact City council and the mayor in order to gain legitimacy and funding for the campus. Together with advisory board members, CEO of Prosthesis Foundation formulated a letter to the head of City's department of social and healthcare services depicting the need for the combined campus for public, private and third party disability healthcare operators. In addition, they collected names to the letter from representatives of other non-governmental organizations and political decision-makers. In the letter, they request funding for concept development of the campus.

The mayor got interested about the project and founded a pre-project steering committee, whose task was formulated in a memorandum of founding meeting as following: "Steering committee's task is to perform analysis of functional and economic

requirements for different options to organize assistive device operations". The steering committee was built op on the basis of Prosthesis Foundation advisory board, thus included CEO of Prosthesis Foundation and five representatives from City of Oulu's department of healthcare social services and University Hospital. As a result, the steering committee proposed that public and private disability healthcare operators should be located in newly build and shared premises. Finally, after multiple reports and meetings, the City of Oulu decided that is will invest in the campus construction together with Prosthesis Foundation's owner Orton Foundation.

The initial inter-organizational network, which evolved on the basis of Prosthesis Foundation advisory board is illustrated in Fig. 1. As it can be seen from the Figure, the initial network was dense and involved multiple strong relationships, which were built through advisory board meetings as well as following Rehapolis pre-project steering committee. Orton Foundation is described as only outlier in this network having contact only to Prosthesis Foundation, which was Orton's subsidiary during that time. Nevertheless, Orton played a crucial role as a co-funder in the project, but was not that interested in participating the project or the evolving network as Orton management saw their own hospital in Helsinki as their strategic location.

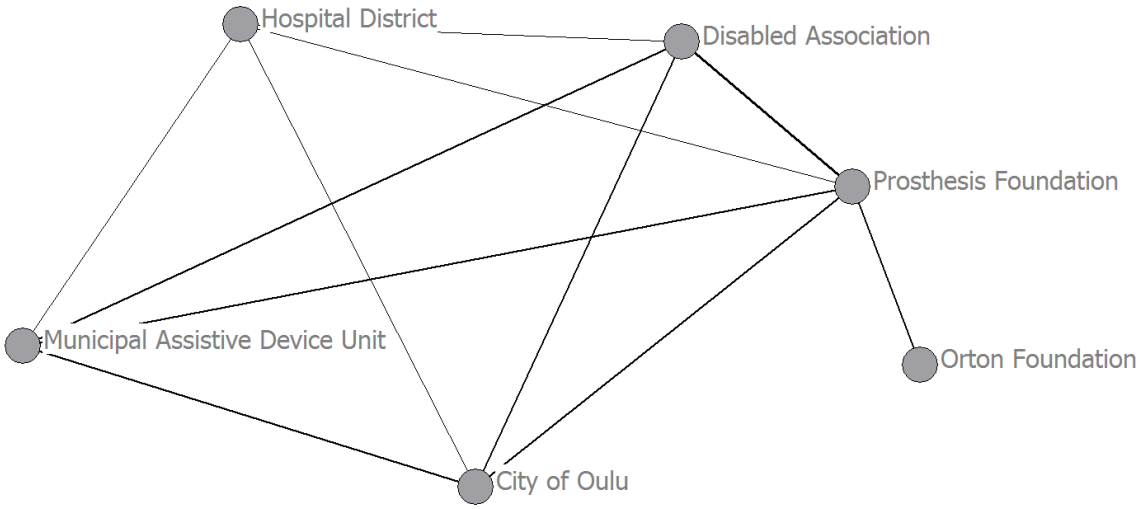

Fig. 1. The inter-organizational network in the front-end phase of the project (1998-2002)

Project implementation phase – Constructing the health care campus

When the investment decision was made, it was time for implementation. Prosthesis Foundation took a developer's role in the construction project and hired an external consultant, architect office and construction company to build the campus based on the open book principle. Concurrently with designing and constructing, Prosthesis Foundation's CEO and Disabled Association's COO engaged new organizations into emerging campus network. The goal was to include similar organizations in order to strengthen the local disability health care network. They interviewed the potential organizations about their needs and gave them possibility to design their own premises.

This led to some changes in the campus design, since some of the organizations joined in this phase. Despite the required changes, the developer saw that is was crucial to give everybody an opportunity to design their premises to ensure the perfect suitability and long-time commitment to the campus.

Despite the changes and some challenges, the both campus buildings were completed in time and in budget with minor changes to original plans. The first campus building was opened in the end of 2004 followed by the construction of the second campus building. Prosthesis Foundation and University Hospital joined forces to finance the construction of the second building. The same main contractor was used for both campus buildings. Finally, the campus was fully operational in 2008.

Fig. 3 illustrates the inter-organizational network during the project implementation phase of Rehapolis 1. We have only included some major project participants such as development consultant, architect firm and main contractor, which presence rose up during our interviews. Although not directly interviewing these parties, we triangulated the sociomatrix data from the given project documents and interviews. In addition to these, multiple subcontractors and other minor actors naturally participated in the campus construction, but were left out of the picture due to lack of detailed information. The important feature of the network is that the organizations responsible for the campus construction were "weakly" connected to Prosthesis Foundation and Disabled Association, who were the main developers of the project and as a main bridge between the multiple organizations. Simultaneously the "left-side of the network" continued to evolve when new actors (such as Wellness Tours) joined the future campus network.

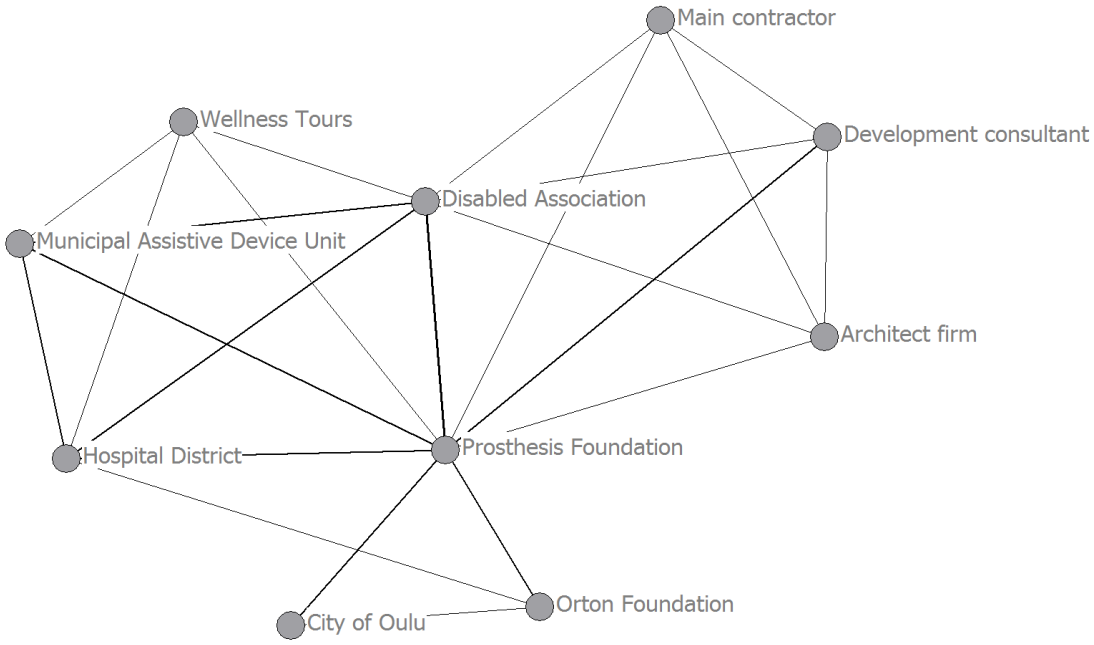

Fig. 2. The inter-organizational network in the project implementation phase (2002-2004)

Operations phase – Continuous development of the inter-organizational heath care network

From the 2008 to the present day, the campus has been operational hosting currently 18 different organizations. Despite, some minor changes in the organization-mix such as merger of City's and Hospital District's disability healthcare units and the exit of City of Oulu's Sports Department as well as some smaller actors, the focus of Rehapolis has stayed in disability healthcare. After the start-up of operations, Prosthesis Foundation hired COO of Disabled Association as a Rehapolis director and his main task was to keep the inter-organizational network vivid. He started to organize regular marketing board meetings, to which all organizations where allowed to participate. The board planned common events in the campus as well as formed shared marketing budget in order to improve the brand and visibility of Rehapolis. In addition, some of the organizations developed dyadic relationships by establishing joint development initiatives and projects such as standardization of care practices and developing new kind of services.

The network picture describing the operational campus network is illustrated in Fig. 3. As it can be seen from the graph, the network is rather dense and includes several strong relationships (the thick lines represent more than three shared activities) between the actors, which basically means that nearly all organizations had participated in marketing board meetings as well as organized joint events. However, for example Implant Inc. and Occupational Health Inc. stayed rather peripheral with only weak ties to other organizations (mainly because of shared location in Rehapolis). For example, Implant Inc.'s CEO thought that as being a medical research company they do not have much in common with other organizations and did not participate in any shared activities. In addition, as the main owner of the campus Orton Foundation was connected to other actors only through tenant contracts. Furthermore, City of Oulu's presence in campus diminished after its sports department exited and City stayed only as a minor shareholder in Rehapolis 1 buildings.

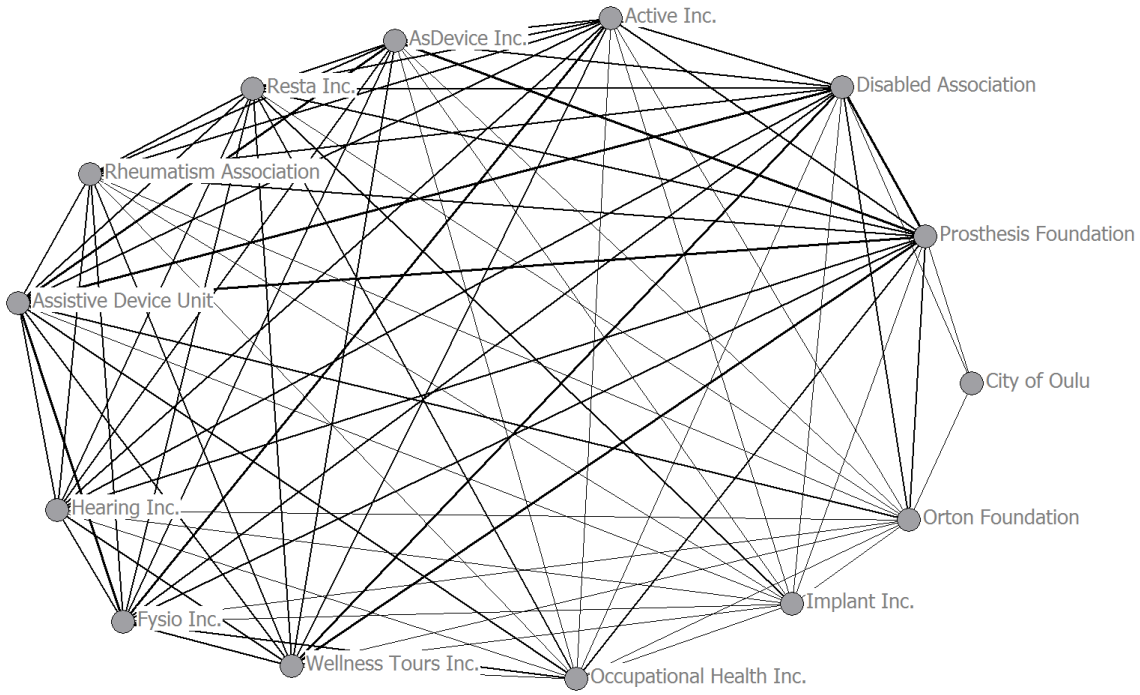

Fig. 3. The inter-organizational network in the operations phase (2008 onwards)

Emergence of the inter-organizational system

We have summarized the dynamic emergence of the inter-organizational network during the system lifecycle in the Figure 4, which describes an analytical conceptualization of the above network graphs and links them to the system lifecycle activities. When we look the inter-organizational network in each of the lifecycle phase, we see that the network involves both permanent and temporary organizing depending on the project lifecycle phase. Thus, when looking especially the implementation phase network, one can identify two different cliques, which are bridged by Prosthesis Foundation and Disabled Association. Based on the social network analysis terms (e.g. Scott, 2001), we decided to call these as permanent and temporary cliques.

For example, in the very beginning, before nobody even talked about Rehapolis campus, the network emerged on permanent basis in advisory board meetings. Regular meetings throughout the 1990s among the board members formed trusting relationship between board members creating dense network laying the foundation for Rehapolis campus project.

When the project slowly started in 2002 new actors were included into the network. The business consultant and the architect played major role in concept development phase, helping to gain legitimacy to the project. Also in the construction phase, the network further expanded when main contractor as well as its sub-contractors entered the picture. These actors formed a traditional temporary project organization responsible for project implementation. Concurrently to traditional project management,

Prosthesis Foundation and Disabled Association continued engaging the future operators to the campus, thus build the future campus network.

Naturally, when the project was finished, the temporary clique of the network dissolved, but the developed campus network continued to evolve when great number of operators moved into the campus. Rehapolis director started to organize marketing board meetings in order to facilitate the interaction inside the network. The campus network can be seen as permanent network, which still undergoes occasional changes. As the case shows, it emerged through project and can be seen as its outcome together with the physical campus.

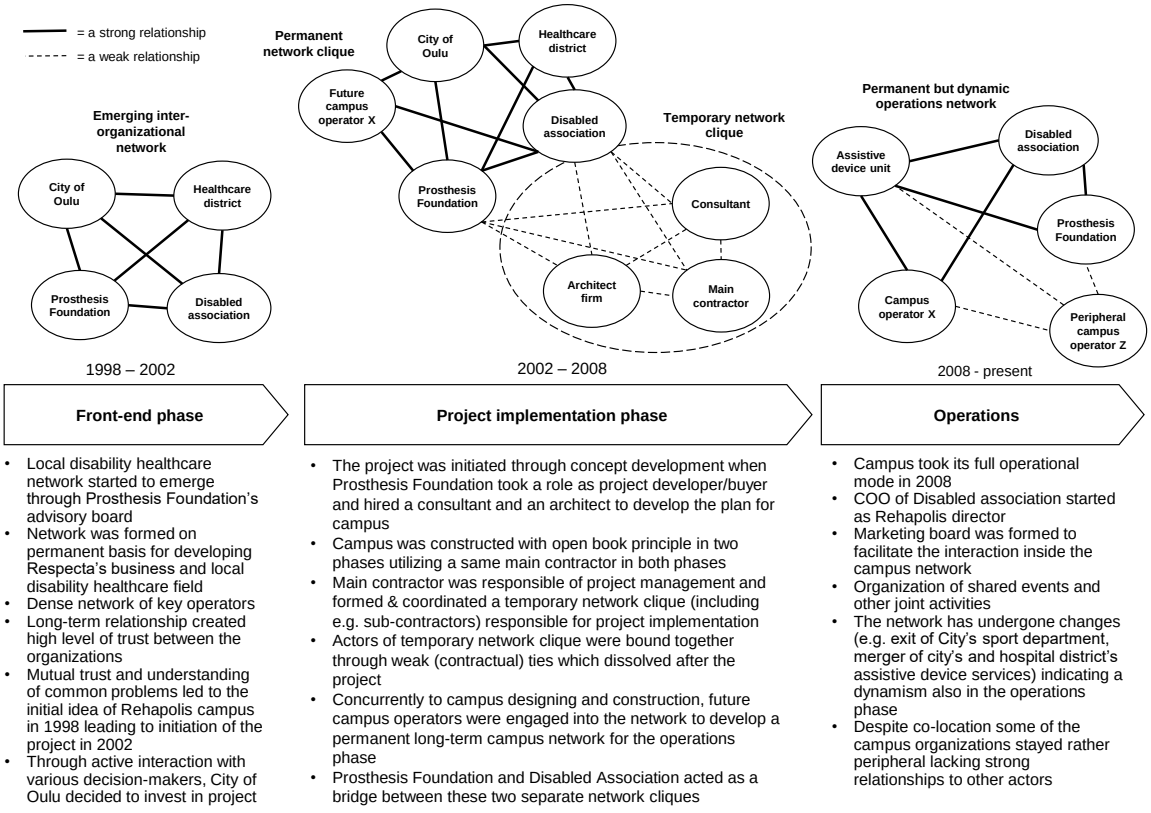

Fig. 4. An analytical conceptualization of the emergence of inter-organizational system on its lifecycle.

Differences between the temporary and permanent organizing

To better understand the dimensions of temporary and permanent, we aimed to identify some of the very basic attributes in the two identified network cliques. Based on our abductive analysis, we underline five different attributes listed in Table 2: management objective, management activities, nature of relationships, time perception and organizational structure.

When the management objective is concerned, we saw a clear distinction between the very basic goal towards which the certain clique thrived. Temporary network clique aimed purely to build the physical campus thus aimed to develop a tangible technical

system and dissolved after it was finished. In contrast, the permanent network clique aimed to develop the health care service network by finding a suitable organizations and projecting already towards the post-project era. We call this objective as a development of intangible social system.

When the objective between the cliques differed, so did the used management activities. Temporary clique in our case utilized rather traditional project management activities, such as architectural and engineering designing, scheduling and contracting through competitive bidding. Prosthesis Foundation acted as a buyer in the project and hired external developing consultant to assist in selecting suitable architect office and main contractor for the project mainly according to the lowest price. During the implementation phase, Prosthesis Foundation CEO and Disabled Association COO paid regular visits to the construction site to supervise the progress as well as reviewed project reports.

The management activities of the permanent clique were quite different. The inter-organizational health care network started emerging already well before the Rehapolis project through active but more indirect management such as organizing the advisory board meetings, in which the actors envisioned and constructed agenda for Rehapolis project. Such actions continued when the idea of Rehapolis was born and for example constant meetings with political decision-makers of City of Oulu and top managers of Hospital District were important in building legitimacy for the project. During the project implementation, such relationship building activities led by Prosthesis Foundation and Disabled Association continued when new organizations were sought to join Rehapolis. Even in the operations phase, the inter-organizational coordination bodies were important ways to keep the network vital by for example organizing joint events and marketing efforts.

These activities also indicate the difference in relationships between the actors of the two cliques. As our social network analysis and resulting figures show, the organizations of the temporary clique were mainly interlinked through project-specific contracts indicating arm's length relationships. In contrast, the organizations of the permanent clique were mainly interlinked through stronger and not purely contractual relationships when they co-located in the same campus, participated in the joint boards and implemented joint initiatives such as developed shared booking systems and standardized treatment practices (in the operations phase).

The nature of relationships then leads to different network structure. The temporary clique consisting of contractual relationships represents a pseudo-hierarchy in which the project buyer aims to control other actors by defining the project outcome and setting the monetary incentives and compensation for the others. Furthermore, the temporary clique can be seen as closed structure in which new actors can only join through competitive bidding. The permanent clique represents a more relational arrangement with low hierarchy, while no actor has a strong transactional bargaining power over others. In addition, the boundaries of the permanent clique were semi-open meaning that new members were able to join if there was open space in the campus, but they were not chosen through any competitive criteria or were required to invest anything in the network.

Deriving from these differences and based on our analysis, we conclude that these two different cliques had different time perception while participating the network. It was clear to temporary actors that they are only participating in short term undertaking to build the campus facilities, while more permanent actors joined the network as well as campus in order to develop their long-term operations.

Table 2.
Diverging themes between temporary and permanent organizing on the system lifecycle

Theme	Temporary organizing	Permanent organizing
Objective	To build tangible technical system such as a capital good	To develop an intangible organizational system such inter-organizational network
Management activities	• Traditional task-oriented project management such as planning and control • Competitive bidding of suppliers • Architectural/civil engineering design • Scheduling • Project reporting • Construction supervision	• Envisioning and agenda construction • Legitimacy building in the field • Relationship building in joint meetings • Contacting and negotiating with potential new organizational members
Nature of relationships	Arm's length shorter term ties or longer term project-to-project based relationships	Long-term relationship with high level of mutual trust contributing the functioning of developing social system
Network structure	Contractual and transaction-based arrangements causing hierarchical or pseudo-hierarchical structure and closed structure	Relational arrangement resulting low hierarchy, networked and complex structure with semi-open boundaries
Time perception	Short term and temporary time frame with institutionalized termination	Long-time frame going beyond the project with perception of stability

DISCUSSION

The objective of the paper was to empirically study the co-existence and management of permanent and temporary organizing on the lifecycle of an inter-organizational system. Our case study of the Rehapolis health care campus has shown a complex and dynamic emergence of a local health care system through years-long planning and networking phase (the front-end) followed by a construction project of two campus buildings. After the completion of the campus, the network has become operational, but still undergoes occasional changes. Therefore, we conceptually embed a project to a lifecycle of a dynamic inter-organizational system and argue that it is an important part of the lifecycle in delivering change.

We have depicted such inter-organizational system as a network consisting of various actors or forming distinctive cliques inside the network. These cliques may then have different roles and state of permanency on the system lifecycle. We argue that the difference partly derives from the two different outcomes aspired in the project: the

development of physical campus building (a tangible and technical end-product of a project) and emergence of the inter-organizational network of campus operators (an intangible organizational and dynamic end-product). Both of the system elements evolve concurrently during the project forming two differing objects requiring different management approaches and activities. This parallel emergence of two divergent system elements with different permanent and temporary relation create complexity in the project and requires different management approaches, for example balancing between soft and hard management methods (Crawford & Pollack, 2004).

Practical project management methods and standards (e.g. PMI, 2013; BS6079, 2010) underline transaction-based market mechanisms such as competitive bidding and contracting as key means to manage network of actors in projects (for an alternative approach see e.g. Ruuska et al., 2011). However, long tradition of network research has underlined importance of social factors (such as trust, solidarity, and mutuality) in inter-organizational relations thus go well beyond pure exchange based relationships (Achrol, 1997). Thus, previous studies on network management (see e.g. Järvensivu and Möller, 2009) underlines the importance of continuous management and development of divergent inter-organizational relationships (not just market-based contractual relationships), through different network-level management activities such as framing and joint goal setting as well as activation and mobilization of other actors to join and commit to the network. In Rehapolis, the relationships between certain actors emerged years before the project implementation and active interaction between different organizations was required to set the idea and goals of Rehapolis. Through such active interaction in various boards during and after the project helped further strengthening the relationships.

On the other hand, the temporary network clique, including the construction company and subcontractors, was created mainly based on competitive bidding. This clique then formed a pseudo-hierarchy (Hellgren & Stjernberg, 1995) within the system when Prosthesis Foundation as project buyer had transactional power over the contractor. Thus, especially from the contractor perspective, relationship building was limited and leaned on traditional project-to-project logic (Skaates et al., 2002). Good reference from the first phase of the Rehapolis yielded a new contract for second phase, but afterwards the relationship diminished. The temporary network clique actors may not be interested in the participating the development of long-term relationship, but relied on swift trust (trust deriving from the institutionalized role of organizations, not from past mutual interaction) and existing norms and legislative institutions strongly prevalent in project contracting (Meyerson et al. 1996; Ahola et al. 2008).

The basic difference between temporary and permanent organizing is the perception of time span. Temporary organizations are designed to be temporary, although they might last longer than permanent organizations (Lundin & Söderholm, 1995). In the Rehapolis network, the contractor knew that they will only construct the campus and after that move to the other project. In contrast, Prosthesis Foundation, other campus operators and investors such as City of Oulu and Orton Foundation knew that they will sign up for longer time period. Thus, these different perceptions of time co-existed in the inter-organizational network especially during project implementation phase. Different

time perceptions are reported to increase likelihood of temporal misfits potentially complicating project delivery (Dille and Söderlund, 2011). We argue that understanding and coping with the co-existence of different temporal perceptions is important, not just for on-time delivery, but for reaching value creating project outcomes, which are functional also long after the project is finished. In the other words, the permanent network actors need to incorporate and communicate their views to the temporary organizations in order to ensure the proper designing of both systems, a technical and an organizational.

Traditionally project managers aim to achieve the understanding of these "permanent expectation" through early engagement of stakeholder (for practical implications see e.g. Bourne & Walker, 2008), but we want to emphasize that when we conceptualize project as a phase on a lifecycle of an inter-organizational system, the project is no more a separate manageable entity but tightly interconnected to a more permanent system. Therefore, it may be valid to even ask that is it a job of a project manager to engage stakeholder or should the stakeholders engage the project manager into system development? By this problematization, we underline our most interesting finding that in our case the project actually derived from the joint activities of local health care organizations (which might be labeled as "stakeholders") who started to drive change in their field by initiating the Rehapolis project. Naturally, we aim not to step on the toes of project managers, but underline the importance of widening our perspective not just by expanding the lifecycle view of the developed physical product (as has been discussed in sustainable project management, see e.g. Labuschagne & Brent (2005)), or building lifecycle management (see e.g. Vanlande, Nicolle & Cruz (2008)), but also to incorporate a perspective of the organizational system, which should include also more permanent actors and not just the temporary project organization. We argue that such inter-organizational system perspective is by no means a simple one, but complex depiction might be the only way to really map the complex and dynamic nature of project stakeholders as recently called by Aaltonen and Kujala (2016).

CONCLUSIONS

Theoretical contributions

The paper provides several contributions to the theory of temporary organizing and project management. First, by building on the past work of Morris (2013) as well as Artto and colleagues (2016) we solidify the conceptualization of a project as a temporary organizing phase on a system lifecycle. In our case study, we show how spanning the temporal dimension beyond the traditional project phases can actually reveal interesting aspects about dynamics of the system.

Second, to better understand the nature of such dynamic system, we conceptualize it as an inter-organizational network, which allows to analyze the temporariness or permanency of the system consisting of multiple interlinked organizations engaging in joint activities (Jones and Lichenstein, 2008). Furthermore, we show how to utilize a practical method of social network analysis in order to better illustrate the dynamic change the inter-organizational system undergoes during its

lifecycle. We see that our method strengthens the traditional case study approach and gives us much more attractive and justified findings about the investigated phenomenon.

Third, deviating from traditional conceptualization of projects as temporary organizations (Lundin and Söderholm, 1995) our conceptualization and empirical research shows that when projects are depicted as inter-organizational systems or networks, they seem to include highly intertwined permanent and temporary organizing structures, or cliques, complementing each other but in the same time potentially complicating management of the overall system. According to our analysis, the need for parallel organizing forms originates from the multifaceted objectives of the complex inter-organizational systems.

Fourth and final, to advance our understanding on such systems consisting of divergent parts, we present five differentiating features of the two parallel organizing forms: objective, management activities, nature of relationships, network structure, and time perception.

Managerial implications

The study shows that practitioners should start accounting diverging aspects of temporary and permanent organizing and widen their perspective beyond the project. If managers keep treating projects as bare temporary forms of organizing, they might fall in trap of not seeing the true value-creating potential of the complex system, of which development they are responsible. Myopic focusing on tangible or technical project outcomes may become expensive when more and more economic activity is undertaken as projects, which in the light of our research are merely just temporary launching pads for longer-term value creation. Identifying the permanent and temporary cliques during the system lifecycle and developing distinctive activities for concurrent management of both cliques as well as their interfaces provides project managers new tools to improve their customers' long-term value. For project managers as well as for designers and managers of the inter-organizational systems the study highlights the salience of developing and utilizing social relationships in order to ensure that temporary project organizing provides sustainable value for the permanent inter-organizational system.

Limitations and future research

In our study, we succeeded only to provide a simple illustration of the dynamic lifecycle of an inter-organizational system. The illustration was based on three simplified sociomatrices, which were formulated from our retrospective interview data triangulated with the archival material. Furthermore, the illustrated networks by no means include all of potential actors, who had participated in the inter-organizational system, but for sake of analytical simplicity, we had to restrict our analysis only to the core organizations. Despite these limitations, we believe that through our explorative findings, we have been able to elaborate the existing theories and more importantly formed a basis for future research on temporary and permanent relation in projects. With more sophisticated research design utilizing a more direct data sources for social network analysis (e.g. e-mail correspondence, phone calls, contracts or other ERP-data) or by incorporating a longitudinal design, future researchers could tease out even more detailed findings about

the dynamism of inter-organizational systems. We wish that our explorative research helps open up new avenues for strong conceptual research aiming to further clarify the complex relation between permanent and temporary organizing.

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APPENDIX 1 - SOCIOMATRICES

Appendix 1-A. The sociomatrix of the inter-organizational network in the front-end phase.

	Prosthesis Foundation	Disabled Association	Orton Foundation	Municipal Assistive Device Unit	Hospital District	City of Oulu
Prosthesis Foundation		**4**	**3**	**3**	**2**	**3**
Disabled Association	1. PF's advisory board 2. Same temporary office 3. Service development initiatives 4. Reha pre-project steering commitee		**0**	**3**	**2**	**3**
Orton Foundation	1. PF was Orton's subsidiary until 2012 2. PF CEO requested funding from Orton 3. Headquarters in the same location in Helsinki			**0**	**0**	**0**
Municipal Assistive Device Unit	1. PF's advisory board 2. Service supply contracts 3. Reha pre-project steering commitee	1. PF's advisory board 2. Peer support services 3. Reha pre-project steering commitee			**2**	**3**
Hospital District	1. PF's advisory board 2. Reha pre-project steering commitee	1. PF's advisory board 2. Reha pre-project steering commitee		1. PF's advisory board 2. Reha pre-project steering commitee		**2**
City of Oulu	1. PF's advisory board 2. Reha pre-project steering commitee 3. Letter to city council	1. PF's advisory board 2. Reha pre-project steering commitee 3. Letter to city council		1. PF's advisory board 2. Reha pre-project steering commitee 3. Owner of Municipal Ass. Dev. Unit before a merger with Hospital District	1. PF's advisory board 2. Reha pre-project steering commitee	

Appendix 1-A. The sociomatrix of the inter-organizational network in the front-end phase.

	Prosthesis Foundation	Disabled Association	Orton Foundation	Municipal Assistive Device Unit	Hospital District	Wellness Tours	Development consultant	Architect firm	Main contractor	City of Oulu
Prosthesis Foundation		4	3	3	3	1	3	1	1	2
Disabled Association	1. Reha development board 2. Co-developers of the project 3. Shared office 4. PF advisory board		0	3	2	1	1	1	1	0
Orton Foundation	1. PF was Orton's subsidiary til 2012 2. Orton is a funder of Rehapolis 3. Headquarters in same location in Helsinki			0	1	0	0	0	0	1
Municipal Assistive Device Unit	1. Advisory board 2. Reha development board 3. Service supply contracts	1. PF advisory board 2. Reha development board 3. Peer support to disabled patients			2	1	0	0	0	0
Hospital District	1. PF advisory board 2. Reha development board 3. Joint funder of Rehapolis 2	1. PF advisory board 2. Reha development board	1. Joint owner of the Rehapolis 2	1. PF advisory board 2. Reha development board		1	0	0	0	0
Wellness Tours	1. Reha development board	1. Invited to Rehapolis project development board meetings		1. Invited to Rehapolis project development board meetings	1. Invited to Rehapolis project development board meetings		0	0	0	0
Development consultant	1. Hired by PF to assist in project development 2. Worked together to develop the project	1. Worked together with PF CEO to develop project						1	1	0
Architect firm	1. Hired by PF for project implementation	1. Worked together with PF CEO to develop project					1. Worked together in project development and implementation		1	0
Main contractor	1. Hired by PF for project implementation	1. Worked together with PF CEO to develop project					1. Worked together in project development and implementation	1. Worked together in project development and implementation		0
City of Oulu	1. Joint owner of the Rehapolis 1 2. Reha development board		1. Joint owner of the Rehapolis 1							

Appendix 1-C: The sociomatrix of the inter-organizational network in the operations phase

	Prosthesis Foundation	Disabled Association	Orton Foundation	Resta Inc.	Fysio Inc.	Assistive Device Unit	Rheumatism Association	Hearing Inc.	Wellness Tours Inc.	Active Inc.	Occupational Health Inc.	AsDevice Inc.	Implant Inc.	City of Oulu
Prosthesis Foundation		4	3	3	3	4	3	2	4	3	2	4	1	1
Disabled Association	1. Marketing board 2. Same office 3. DA CEO employed by PF as Reha director 4. Shared events		2	3	3	4	3	3	4	3	1	3	1	1
Orton Foundation	1. PF was Orton's subsidiary until 2012 2. Rehapolis facility management 3. Headquarters in Helsinki	1. Disabled Association COO was director of Rehapolis 2. Tenancy		1	1	2	1	1	1	1	1	1	1	1
Resta Inc.	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Tenancy		3	3	3	3	3	3	3	3	2	0
Fysio Inc.	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events		4	3	3	3	4	2	3	1	0
Assistive Device Unit	1. Operate in Rehapolis 2. Marketing board 3. Service supply contracts 4. Development initiatives	1. Operate in Rehapolis 2. Marketing board 3. DA provides disability peer support 4. Joint initiatives	1. Tenancy 2. Joint owner of Rehapolis 2 (Hospital District)	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Operate in Rehapolis 2. Marketing board 3. Service supply contracts 4. Development initiatives		3	3	3	3	2	4	1	0
Rheumatism Association	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events		3	3	3	1	3	1	0
Hearing Inc.	1. Operate in Rehapolis 2. Previous subsidiary of PF	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events		3	3	1	3	1	0
Wellness Tours Inc.	1. Marketing board 2. Operate in Rehapolis 3. Joint development project 4. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Joint development project 4. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events		3	1	3	1	0
Active Inc.	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operating in Rehapolis 3. Shared events 4. Joint services (until 2016)	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events		1	3	1	0
Occupational Health Inc.	1. Operate in Rehapolis campus 2. Occasional service contracts	1. Operate in Rehapolis	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Operate in Rehapolis campus 2. Occasional service contracts	1. Operate in Rehapolis campus 2. Occasional helath service contract	1. Operate in Rehapolis campus	1. Operate in Rehapolis campus	1. Operate in Rehapolis campus	1. Operate in Rehapolis campus		1	1	0
AsDevice Inc.	1. Both operate in Rehapolis 2. Marketing board 3. AD manager previously employed by PF	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Operate in Rehapolis campus 2. Marketing board 3. Service provider contract 4. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Operate in Rehapolis campus		1	0
Implant Inc.	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Tenancy	1. Operate in Rehapolis campus 2. Restaurant and catering services	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis		0
City of Oulu	1. Joint owner of Rehapolis 1	1. DA COO was Reha facility manager	1. Joint owner of Rehapolis 1											

SHEDDING LIGHT TO A PERMANENT-TEMPORARY DILEMMA BY INVESTIGATING PROJECTS AS COMPLEX INTER-ORGANIZATIONAL SYSTEMS

ABSTRACT

A project can be seen as a complex temporary organization, which integrates the efforts of multiple permanent organizations aimed to deliver transition and produce tangible end-products. However, temporariness of project organizations requires different management approaches than management of traditional permanent organizations potentially causing problems, when these two distinctive forms of organizing collide. Previous project management research has dealt with temporal dimension of organizing by defining project as a complex system developing in time. However, we do not still fully know how such a system, consisting of multiple organizational actors, evolve before, during and after the project, thus what roles temporary and permanent organizing have on a complete system lifecycle. Therefore, we address a research question: How do temporary and permanent organizing coexist and how their management differs on the lifecycle of a complex inter-organizational system? Through a qualitative single case study, we map different activities occurring on the lifecycle of an inter-organizational system of Rehapolis, which is a disability health care campus and service network. In order to illustrate the dynamism of such system, we use our qualitative findings for social network analysis (SNA) to draw inter-organizational network in three different lifecycle phases. Our findings underline the importance of system lifecycle perspective for project management. Furthermore, the conceptualization of a project as a distinct phase on a longer lifecycle of a complex inter-organizational system allows us to better understand the high dynamism within such system. Such conceptualization helps distinguishing between temporary and permanent organizing and their management. Finally, we present five differentiating features of the two parallel organizing forms.

KEYWORDS: project lifecycle; inter-organizational network; temporary organizing; complex systems; stakeholder dynamics

INTRODUCTION

During the past decades increasing amount of global economic activity is undertaken through projects which have become a mundane form of organizing mainly due their effectiveness to manage complex business tasks (Packendorff & Lindgren, 2014; Scranton; 2014; Söderlund & Tell, 2009). Projects are typically described as temporary organizations (Lundin and Söderholm, 1995; Packendorf, 1995) used as vehicles of change (Turner & Müller, 2003) and as special forms of organizing (Söderlund, 2004) suitable for delivering complex systems (Davies, Brady & Hobday, 2006; Hobday, 2000). Such major undertakings are usually taken as inter-organizational projects (Jones & Lichenstein, 2008), in which multiple organizations need to integrate their efforts for a temporary period of time (Davies, Gann, & Douglas, 2009). Thus, organizational integration (Lawrence & Lorsch, 1967) requires to go past organizational boundaries when different capabilities of system component deliveries are combined to build a value creating end-product of a project (Morris, 2013). After a project, a temporary organization is typically dismantled through institutionalized termination (Lundin & Söderholm, 1995).

However, the end-product of the project begins to create value after the project, thus the end-product has more permanent nature (Artto, Ahola & Vartiainen, 2016; Winter, Smith, Morris, & Cicmil, 2006). Therefore, projects are temporary by their nature but have a permanent impact which blurs a line between temporary and permanent organizing.

Such dilemma between temporary and permanent nature of projects has intrigued researchers. Organizations undertaking projects tend to have permanent organizational structures allowing for example project-to-project learning (Artto and Kujala, 2008). In addition, temporary organizing can be used for renewing permanent organizations (Anell and Wilson, 2002; Turner and Müller, 2003), or being at least tightly linked to permanent organizations e.g. through shared resources (Modig, 2009). Temporary-permanent relation may also be looked through interfaces between temporary projects and permanent organizations such as project-based firms, owners and operators (Winch, 2014). The concept of extended project lifecycle (Morris, 2013) or system lifecycle (Artto et al., 2016) depicts project as a part of long-term continuum of value creation which occurs in the front-end design, implementation and operations phases of complex systems.

Despite these efforts, the relationship between permanent and temporary organizing has maintained unclear especially when projects are seen from a two-fold perspective as temporary organizations producing permanent value creating outcomes. For example, when an inter-organizational project, such as constructing a nuclear power plant, is depicted as a system or a network of multiple organizational actors existing for multiple years (Ruuska, Ahola, Artto, Locatelli, & Mancini, 2011), it is by no means clear what in such a complex system can be treated as permanent or temporary and how such systems dynamically evolve in time considering also time periods before and after the project (Aaltonen & Kujala, 2016; Artto et al., 2016). This motivates us to address a following research question: How do temporary and permanent organizing coexist and how their management differs on the lifecycle of a complex inter-organizational system (or before, during and after a project)?

To elaborate these emerging theoretic views of inter-organizational projects and system lifecycle, we conduct a qualitative single case study of a health care campus, in which multiple organizations participated in project-based organizing to build new premises for disability health care services, but also in long-term efforts to create and develop a permanent network of actors providing such services. In our analysis, we combine inductive qualitative analysis to social network analysis (SNA) in order to better illustrate the dynamic nature of the complex inter-organizational system on its lifecycle.

Based on our findings, we argue that such system includes two separate entities, or in network terms *cliques*, a temporary and a permanent clique. Temporary clique aims to produce a tangible end-product of a project, or a technical system such as campus buildings. In contrast, the permanent but dynamic clique is associated with developing an intangible end-product of an organizational or a social system, such as the network of health care service providers operating in the campus. From these empirical findings, we formulate a framework of the system lifecycle depicting the dynamism of the networked system and related activities. Furthermore, we identify five diverging themes between concurrent temporary and permanent forms of organizing.

Our study provides four contributions to project management research. First, it further solidifies the importance of extended or system lifecycle aspect in project management. Without clearly understanding what happens before and after the project, project managers keep micro managing the project according the classical but oftentimes non-context relevant criteria and actions. Second, the novel conceptualization of a project as a distinct phase on a lifecycle of a complex inter-organizational system could be mapped through network analysis revealing the

high dynamism within such system. Thirdly, such conceptualization further helps us to better distinguish between temporary and permanent organizing and management them accordingly. Fourth and final, to advance our understanding on such systems consisting of divergent parts, we present five differentiating features of the two parallel organizing forms.

THEORETICAL BACKGROUND

Projects as temporary organizations are powerful forms of organizing for delivering transition and change (Lundin & Söderholm, 1995. Packendorf, 1995; Turner & Müller, 2003). The change can be achieved through developing a new, or altering, an existing non-living technical system as well as a living organizational system (Artto et al. 2016). These two systems thus form the different outcomes or end-products of a project (Morris, 2013).

When the focus is turned into the organizational system, ontological challenges may arise when temporary organizations are tried to be linked with the permanent organizations. For example to what extent, the temporary organization is dependent on permanent parent organizations or vice versa? Anell and Wilson (2002) posit that permanent organizations always require some temporary endeavors to keep themselves from away stagnating state and building organizational inertia. Modig (2007) concludes that permanent and temporary organizational structures serve different purposes, i.e. temporary organizations suit better to tasks with great deal of uncertainty. On the other hand, Winch (2014) argues that permanent and temporary organizing is actually linked through relationships between multiple organizations for example asset owners and project-based firms. Temporary organization formed in projects or programmes may then facilitate these inter-organizational relationships by forming a temporary platform in which permanent relationships spanning beyond a single project may emerge.

Despite these efforts, the relationship between temporary and permanent organizations is ambiguous leading to calls for research on how project constellations with varying degree of permanent and temporary actors may dynamically change through the project lifecycle (see e.g. Aaltonen & Kujala, 2016; Artto et al., 2016; Winch, 2014). To understand these aspects better, the following sub-sections explores past research of the project life cycle as well as inter-organizational relationships in projects.

Project and system lifecycle

By their definition temporary organizations are planned to be temporary thus they have a limited lifetime, when permanent organizations are considered to thrive for unknown period of time (Anell & Wilson, 2002). The tasks to achieve a value-creating end-product of a project, are thus organized on a lifecycle of a project (Morris, 2013). Various different presentations of a project lifecycle has been suggest varying from cyclical to linear presentations with differentiating phases from design to implementation and close-up (Lundin & Söderholm, 1995; Morris, 1994). Recent research has highlight that importance is not necessarily to explicitly to map out the distinct phases inside the project, but to also consider pre- and after project phases on extended project lifecycle or even system lifecycle (Aaltonen, Kujala, Havela, & Savage, 2015; Artto et al. 2016; Matinheikki, Artto, Peltokorpi & Rajala, 2016; Morris, 2013). Such views underline that project is just a part of a longer system lifecycle in which value creation is strongly temporally depended, meaning that temporary organizing of a project aims to develop a system, which then creates value after the project itself has been terminated.

Therefore, an essential question for unlocking temporary permanent dilemma is what happens before and after the project? Research on project-based firms and project business

(Artto & Kujala, 2008; Hobday, 2000; Wikström, Artto, Kujala, & Söderlund, 2010) addresses these questions by showing that certain permanently structured firms do business by continuously organizing and managing temporary project teams, which develop and deliver complex solutions. Thus, a project-based firm provides a permanent frame for developing required specialized organizational capabilities and facilitate the learning from project to project (Davies & Brady, 2000; Whitley, 2006). This project-to-project view is the essence in project-based firm by providing the linkage to permanent organization but simultaneously does not fully address the question of what happens to a single project's outcome, when the project-based firm has finished the project and exists the project site. One way to look at the project as being just a part of a whole system is the integrated solutions theorization, which dilutes the line between project and operations management by moving the emphasis to developing, delivering and operating total lifecycle solutions (Davies et al., 2006).

Thus, at this point, we conclude that temporary-permanent dilemma manifests itself rather differently if one analyzes permanency of the organization delivering projects (e.g. a project-based firm) compared to permanency of the project's outcome or a system in which the project is embedded in. In this study, we focus on the latter, but see such system more than a pure technical outcome or a capital good and additionally focus on the social or organizational aspect of such outcomes.

The role of inter-organizational relationships in projects

Developing and delivering complex systems requires input of multiple organization entities forming an inter-organizational project (Jones and Lichenstein, 2008) which is a temporary organization gathering multiple organizations with diverging organizational backgrounds and practices but who are assumed to work towards a common goal for a limited period time. However, the literature on project-based firms or systems integrators focuses mainly on goals and business purposes of single company and does not take into account the development of inter-organizational relationships and structures of a project network during a system lifecycle. Traditionally, the project network is seen as dynamic set of organizational actors emerging on project lifecycle, but dismantling after the project (Hellgren & Stjernberg, 1995; Ruuska et al., 2011). Additionally, past literature has sought to understand the development of long-term inter-organizational relationships to certain key-stakeholders during project implementation phase in order to improve future's business opportunities (Ahola, Kujala, Laaksonen, & Aaltonen, 2013; Cova, Ghauri & Salle, 2002; Skaates, Tikkanen & Lindblom, 2002). Thus, such project marketing focused literature emphasizes the benefits of building long relationships between project-based firms and its suppliers and customers.

Despite its theoretical soundness and great practical applicability, such views do not account the formation of permanent relationships in the context of a single project. When notifying the cultural and historical embeddedness of a project meaning that a project has always its own unique history (Engwall, 2003), a project can be seen as just an episode on a longer continuum or as a part of a system lifecycle. This leads us to assume that there may exist a somewhat permanent inter-organizational network already before the project in which the temporary organization form is embedded (as discussed by Matinheikki et al., 2016). This network may be expected also to exist after the project, in the following operations phase (Artto et al., 2016), but most likely it experiences changes when temporary actors enter and exit the network. Previous project management research has not explicitly focused on these aspects of varying degrees of temporariness or permanency of the network of actors and says very little how such phenomenon should be taken into account when projects are managed. This motivates

us to empirically investigate our research question: How do temporary and permanent organizing coexist and can be managed on the lifecycle of a complex inter-organizational system?

RESEARCH METHOD AND DATA

To deepen our understanding of temporary and permanent organizing on the system lifecycle, we conducted a qualitative single-case study of a Rehapolis health care campus. We retrospectively analyzed three different phases of Rehapolis from the front-end of the project and its implementation to the following operations phase. In Rehapolis, various public and private organizations participated in designing, developing, implementing and operating the health care campus, which offers wider variety of health care and wellbeing services. To address our research question, we aimed to identify all key actors participating the project on different lifecycle phases (before, during and after the project) and pay especially attention to emergence and dynamics of the inter-organizational network. We pursued to map interaction and activities within the network to draw three illustrations of the network at different phases enabling us to identify and make inferences about diverging approaches to manage temporary and permanent organizing on system lifecycle.

Instead of drawing highly generalizable conclusions, the purpose of the empirical study was to gain insight from a specific case with a unique context and history. Such research strategy allowed use of an theory-elaborating and abductive reasoning approach (Ketokivi & Choi, 2014), where our analysis makes new contributions to existing theory about project management through iterative review of the existing theory and comparing it to our case findings.

Case description

Rehapolis is a joint-campus combining multiple health care organizations and locating in the City of Oulu, Northern-Finland approximately 500 km from the capital Helsinki. Rehapolis consists of two buildings comprising 8,500 m^2 and currently hosts 19 different organizations ranging from private companies to public health care operators and non-governmental organizations (NGOs). The most of the actors operate in the field of disability health care, providing private and public assistive device and rehabilitation services. Rehapolis is more than a physical building since it forms a common identity for the campus actors creating an inter-organizational network of local health care operators.

Initial idea of Rehapolis campus sparked in inter-organizational advisory board meetings organized by a Prosthesis Foundation chief executive officer (CEO) in the late 1990s. In the board meetings, a group of key actors in the local disability health care field (representatives of the Prosthesis Foundation, Disabled Association, University Hospital, and Municipal Assistive Device Unit) realized the poor status of local disability health care, started pondering possible solutions, and came up with the idea of co-locating all the organizations in a joint campus. Prosthesis Foundation led and financed the concept development and project implementation jointly with public actors of City of Oulu and Norther Ostrobothnia Health Care District. Idea creation and concept development began in 1998 followed by two-phased construction period of two campus buildings between 2002 and 2008. The campus has then fully operational from 2008 onwards. In our empirical case study, we focus on separately analyzing these three explicit phases of the front-end (1998-2002), project implementation (2002-2008) and operations (2008 onwards).

Data collection

When choosing our case, we followed a theoretical sampling approach (Corbin & Strauss, 2014), meaning that we aimed to collect empirical data giving us better understanding of development of the inter-organizational system on its lifecycle. As described above, Rehapolis met well these aspects. While choosing our informants, we followed snowball sampling (Biernacki & Waldorf, 1981) meaning that we identified our informants or other sources of information based on the insights and needs cumulating during the research process.

Thus, in order to understand the history of Rehapolis and its lifecycle, we started interviewing the largest organizations (Assistive Device Unit, Prosthesis Foundation, Medifys and Uniresta) in Rehapolis as well as the representatives of a current property owner, Orton Foundation. This first round of interviews led us to interview representatives of sixteen different organization belonging to the Rehapolis network in order to map out Rehapolis' development history from the perspective of each health care organization within the campus. The chosen informants were top managers or executive being responsible for decisions to participate in Rehapolis, allowing us to gain knowledge about the reasons for their participation as well as evolution of their role in the network. Some informants were interviewed twice to get confirmation on the emerging themes. In total, we conducted 26 interviews lasting 80 minutes on average. All interviews were recorded and transcribed verbatim. Our informants are listed in Table 1 in chronological order of conducted interviews with a short description of each organization as well informant's current or past role in the organization.

All our interviews were conducted in the winter 2014-2015. Therefore, we collected information about the earlier phases retrospectively. In order to triangulate our retrospective data, we utilized internal and open-source documentation of the Rehapolis project, such as meeting memos, project marketing presentations, blueprints, news articles and even a personal biography of one key person responsible for the project.

Data analysis

We started our data analysis by utilizing thematic coding approach (Corbin & Strauss, 2014) to sort out the interview and supportive data. We used the project phases (front-end, implementation and operations, see e.g. Morris, 2013 and Artto et al., 2016) as our main thematic categories to sort our vast empirical data. In so doing, we created a chronological narrative of the main events in the Rehapolis lifecycle from 1998 to 2015. We mapped the events and activities as expressed by our interviewees and utilized the given documents to triangulate the information on different events and phases to place them in a clear chronological order. Our empirical analysis was at the micro level. We focused on lower level entities such as activities, choices, and meanings given to activities by individuals representing various organizations.

To better understand how the inter-organizational network evolved through time or to tease out the dynamic dimension of network-based organizing (permanent vs. temporary), we utilized our codified data to draw illustration of the network in each three analyzed phases. For such illustration, we drew three network pictures by utilizing the general idea of social network analysis (SNA), which is an effective and widely used method to analyze relational data in a matrix format and illustrate such data through sociograms drawn according to principles of graph theory (Wasserman & Faust, 1994; Scott, 2000).

Table 1.
List of the Rehapolis organizations and informants

Organization name and description	Informants and their roles (in total 26)
Orton Foundation • Private foundation providing services for orthopedic health care, rehabilitation, scientific research, and education supply. • Joint-owner of Rehapolis 1 & 2 buildings (80% and 50% of the shares). • Former owner of Prosthesis Foundation (until 2014). Decided on Prosthesis Foundation's investment in the project.	• Real Estate Manager • CEO • Former CEO (until late 2012) • 3 interviews in total
Prosthesis Foundation • Private company providing all the services for assistive devices • During the time of the project subsidiary of Orton Foundation. • Fully sold to multinational assistive device company in 2014	• Former Chief Executive Officer (CEO) (until late 2014), 2 interviews • Regional Manager, 2 interviews • Former Administrator (until 2009) • 4 interviews in total
Resta Inc.(a pseudonym) • A company providing restaurant and catering services on Rehapolis campus • Previously took care of small facility management tasks in Rehapolis 1 such as guest reception, keys, access control etc.	• Service Manager • 1 interview in total
Fysio (a pseudonym) • A private company providing various physiotherapist services • CEO is a current chairwoman of a Rehapolis development board • Joined Rehapolis 2 in 2010	• CEO, 2 interviews in total
Assistive Device Unit • A public actor providing public assistive device services (prosthesis, walking aids etc.) • One of the largest actors in Rehapolis. • Formed through a merger of assistive device units of City of Oulu and Hospital District in 2009	• Chief Operating Officer (COO), 2 interviews
Disabled Association • An association representing disabled people • Close collaborator with private and public service providers of assistive devices offering consultation and peer-support for disabled patients	• Current COO, 2 interviews • Former COO and former director of Rehapolis (until late 2012) • 3 interview in total
Rheumatism Association • An association representing and supporting rheumatic patients by offering guidance, help, and education about rheumatism • Among the first operators in Rehapolis, since 2004	• COO • 1 interview in total
Hearing Inc. (a pseudonym) • A private company providing solutions for the hearing-impaired • Previously a subsidiary of Prosthesis Foundation • Among the first operators in Rehapolis, since 2004	• CEO • 1 interview in total

Wellness Tours (a pseudonym) • A private company focusing on wellness tourism and operating a rehabilitation and wellness center. • Among the first operators in Rehapolis 1, since 2004	• COO • 1 interview in total
Active Inc. (a pseudonym) • Private company providing various services for medical, social, and professional rehabilitation (e.g., occupational and speech therapy) • Among the first actors in Rehapolis 2, since 2008	• CEO • 1 interview in total
Hospital District • A public actor responsible special healthcare and operating a University Hospital's • Joint-owner (50% of the shares) of Rehapolis 2 building together with Orton Foundation through its property management unit • Operates own rehabilitation unit (not located in the campus) responsible for the rehabilitation of amputated patients and coordinates the post-amputation treatment chain	• CEO of property management unit • Rehabilitation Nurse • 2 interviews in total
Facility Mgmt Inc. (a pseudonym) • Facility management company, which took over the facility management of Rehapolis 1 premises in 2014.	• Service Manager • 1 interview in total
Occupational Health Inc. (a pseudonym) • Private health care operator • Offers occupational health care services for University Hospital • Joined Rehapolis in 2010	• Service Manager • 1 interview in total
AsDevice Inc. (a pseudonym) • Private company providing assistive devices • Direct competitor of Prosthesis Foundation • Regional manager was previously employed by Prosthesis Foundation • Joined Rehapolis in 2010	• Regional Manager • 1 interview in total
Implant Inc. (a pseudonym) • Private start-up company developing innovative bone implants • Joined Rehapolis 2 in 2008	• CEO • 1 interview in total

The basic idea of SNA is to analyze and illustrate a network of actors (being individuals, organizations or any other unit of analysis) through a sociogram consisting of nodes representing the actors and lines connecting the nodes representing potential relationships between the actors. The relationships can then illustrate any means of interactions between the actors such as membership in common boards, contractual relationships, official, unofficial correspondence etc., which can be represented in a numerical format in actor-by-actor matrix (Scott, 2000).

In order to map out the relationships in the Rehapolis' lifecycle, we quantified our qualitative data into a one-mode network (Wasserman & Faust, 1994). We chose one-mode network type, since we had not interviewed all of the actors during the long lifecycle of Rehapolis, but we relied on descriptions of certain informants as well as archival material (Scott, 2000). We utilized our coding of different activities and events to identify possible source of relationship between any two identified actors and listed it to three different data matrices

describing each lifecycle phase by using MS Excel. The typical type of relational data included for example membership in a common board, contractual relationships, positioning in the Rehapolis campus and implementation of a common development project. The data matrices were square and adjacency type (i.e. companies-by-companies), where the rows and columns contained focal organizations in each lifecycle phase and the crossing cell included list of shared activities indicating a potential relationship (Scott, 2000). The crossing cell information was then converted directly to a numerical value equaling the number of different activities. See the appendix A for matrices of the three lifecycle phases, describing the codified qualitative data on the lower left side of the diagonal, transformed into numerical value for social network analysis in the upper right side of the diagonal.

We then utilized the resulting numerical data matrices and converted them to a symmetric sociomatrices with UCINET 6 software. We used these sociomatrices to draw three sociograms (the network graphs) with standard Netdraw add-in of UCINET 6. These network graphs are shown in our results section and they illustrate the dynamic development of the inter-organizational network over the system lifecycle. We distinguished between the strong and weak ties by using a threshold value of three shared activities, meaning that we assumed actors to have a strong relationship for example when they participate in a joint board, share a common development initiative and are positioned in the Rehapolis campus. Thus, in our network diagrams, we sized the lines according the tie strength with the maximum value of three. This resulted thicker lines to describe stronger ties.

From these three network graphs, we saw that certain group of key actors had participated in all the phases and that certain actors were active only in the project implementation. By using the basic terms of the social network analysis, we labeled these as separate network cliques, which we named a permanent and a temporary network clique. The illustration and identification of these two cliques was crucial for our abductive reasoning, since it allowed us to further focus our analysis to comparing the similarities and differences between these two cliques, which we then treated as embedded cases (Yin, 2013). By using an analogy of inductive cross-case study approach (Eisenhardt, 1989), we then compared these two cliques and found interesting differences between them, which helped us to address our research question. In total, we found five divergent themes related to our theoretical background, which we saw to describe the differences between temporary and permanent organizing on the system life cycle.

EMPIRICAL FINDINGS

In this section, we first give a short version of our case narrative to give readers the basic understanding of the Rehapolis lifecycle. The first three sub-sections describe each lifecycle phase accompanied with the respective network graph. To summarize our findings, we then illustrate the whole system lifecycle in Fig. 4, which shows the analytical conceptualization of the three network graphs illustrating the dynamism of the inter-organizational system as well as summarizes the divergent activities of temporary and permanent organizing on the systems lifecycle. Finally, in the end of the section we show our cross analysis on these two different forms of organizing.

Front-end phase – From idea creation to concept development and funding decision

Rehapolis did not born by sudden, but it was a result of years-long inter-organizational activities. Prosthesis Foundation and its former chief executive officer (CEO) started to organize advisory board meetings in the beginning of 1990s in order to develop business of Prosthesis

Foundation. Back then, the newly appointed new CEO came from different industry and wanted to gain better picture what was happening in the field of disability healthcare and invited key decision-makers from the different organizations in the Oulu region. The advisory board included physicians from Hospital District Disability Unit and Municipal Assistive Device Unit (which later merged into one Assistive Device Unit governed by the Hospital District), political decision-makers from the City of Oulu and a front man of a local Disabled Association. The advisory board organized regular meetings in which the board members discussed also on broad issues in the field of disability healthcare such as scattered service locations, poor premises of all the operators and poorly managed and greatly overlapping but poorly integrated services. They all felt that something had to be done in order to improve the situation and finally they came up with the initial idea of Rehapolis during a train trip to Helsinki to visit a healthcare fair in 1998.

All the advisory board members agreed and supported the idea about shared campus between public, private and third party healthcare organizations. The first task was to gain stronger public support to the project. Therefore, CEO of Prosthesis Foundation saw it important to contact City council and mayor in order to gain legitimacy and funding for the campus. Together with advisory board members, CEO of Prosthesis Foundation formulated a letter to the head of City's department of social and healthcare services depicting the need for the combined campus for public, private and third party disability healthcare operators. In addition, they collected names to the letter from representatives of other non-governmental organizations and political decision-makers. In the letter, they request funding for concept development of the campus.

The mayor got interested about the project and founded a pre-project steering committee, whose task was formulated in a memorandum of founding meeting as following: "Steering committee's task is to perform analysis of functional and economic requirements for different options to organize assistive device operations". The steering committee was built on the basis of Prosthesis Foundation advisory board, thus included CEO of Prosthesis Foundation and five representatives from City of Oulu's department of healthcare social services and University Hospital. As a result, the steering committee proposed that public and private disability healthcare operators should be located in newly build and shared premises. Finally, after multiple reports and meetings, the City of Oulu decided that is will invest in the campus construction together with Prosthesis Foundation's owner Orton Foundation.

The initial inter-organizational network, which evolved on the basis of Prosthesis Foundation advisory board is illustrated in Fig. 1. As it can be seen from the Figure, the initial network was dense and involved multiple strong relationships, which were built through advisory board meetings as well as following Rehapolis pre-project steering committee. Orton Foundation is described as only outlier in this network having contact only via Prosthesis Foundation, which was Orton's subsidiary during that time. Nevertheless, Orton played a crucial role as a co-funder in the project, but was not that interested in participating the project or the evolving network as Orton management saw their own hospital in Helsinki as their strategic location.

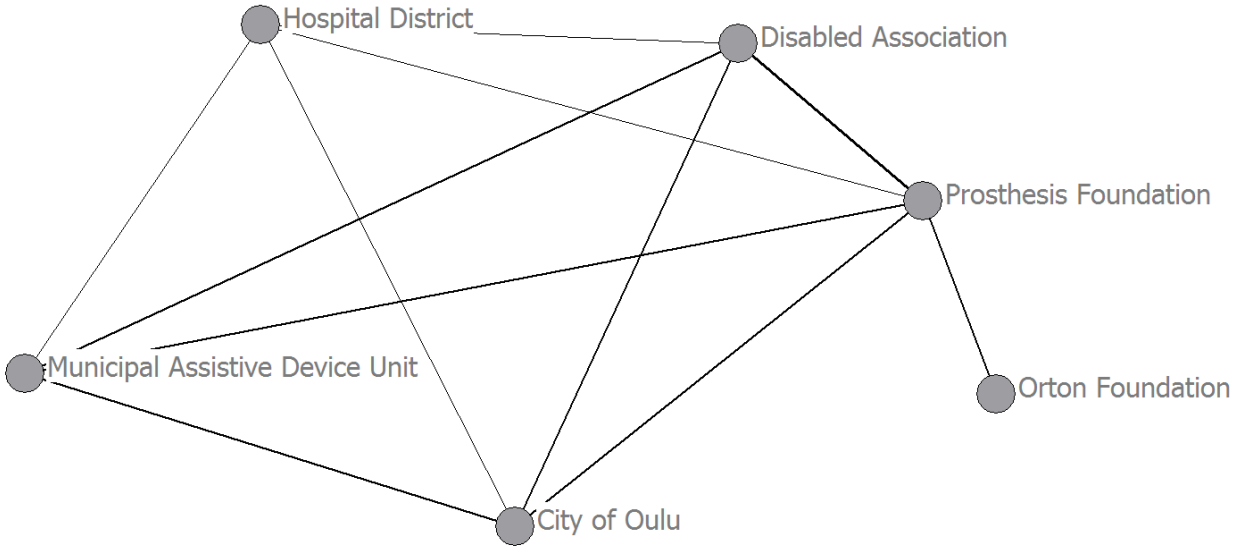


Fig. 1. The inter-organizational network in the front-end phase of the project (1998-2002)

Project implementation phase – Constructing the health care campus

When the investment decision was made, it was time for implementation. Prosthesis Foundation took a developer's role in the construction project and hired an external consultant, architect office and construction company to build the campus based on the open book principle, which City of Oulu had requested. Concurrently with designing and constructing, Prosthesis Foundation's CEO and Disabled Association's COO engaged new organizations into emerging campus network. The goal was to include similar organizations in order to form a local health care network. They interviewed the potential organizations about their needs and gave them possibility to design their own premises. This led to some changes in the construction phase, since some of the organizations joined in this phase. Despite the required changes, the developer saw that is was crucial to give everybody an opportunity to design their premises to ensure the perfect suitability and long-time commitment to the campus.

Despite the changes and some challenges, the both campus buildings were completed in time and in budget with minor changes to original plans. The first campus building was completed in the end of 2004 which led to the initiation of construction of the second campus building. Prosthesis Foundation and University Hospital joined forces to finance the construction of the second building. The same main contractor was used for both campus buildings. Finally, the campus took it full operational mode in 2008.

Fig. 3 illustrates the inter-organizational network during the project implementation phase of Rehapolis 1. We have only included some major project participants such as development consultant, architect firm and main contractor, which presence rose up during our interviews. Although not directly interviewing these parties, we triangulated the sociomatrix data from the given project documents and interviews. In addition to these, multiple subcontractors and other minor actors naturally participated in the campus construction. The important feature of the network is that the organizations responsible for the campus construction were "weakly" connected to Prosthesis Foundation and Disabled Association, who were the main developers of the project and as a main bridge between the multiple organizations. Simultaneously the "left-

side of the network" continued to evolve when new actors (as Wellness Tours) joined the future campus network.

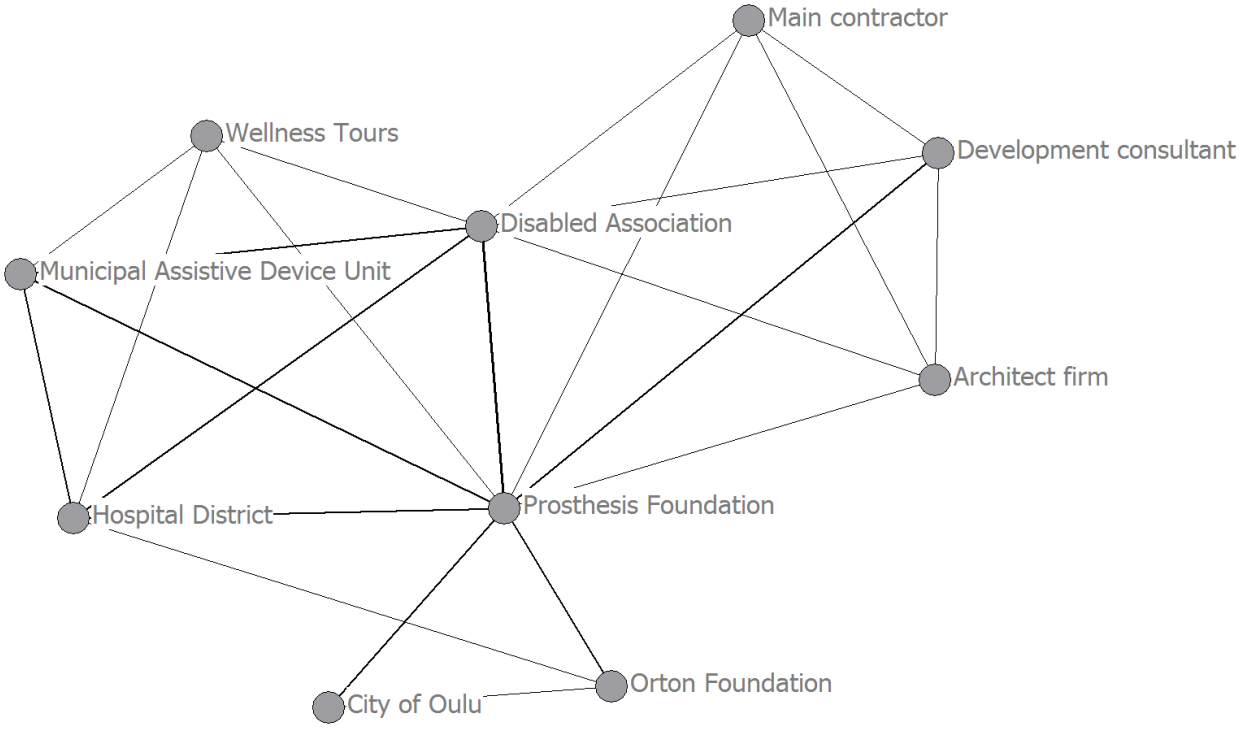


Fig. 2. The inter-organizational network in the project implementation phase of Rehapolis 1 (2002-2004)

Operations phase – Continuous development of the inter-organizational heath care network

From the 2008 to the present day, the campus has been in operational mode hosting currently 18 different organizations. Despite, some minor changes in the organization-mix such as merger of City's and Hospital District's disability healthcare units and the exit of City of Oulu's Sports Department as well as some smaller actors, the focus of Rehapolis has stayed in disability healthcare. After the start-up of operations, Prosthesis Foundation hired COO of Disabled Association as a Rehapolis director and his main task was to keep the inter-organizational network vivid. He started to organize regular marketing board meetings, to which all organizations where allowed to participate. The board planned common events in the campus as well as formed shared marketing budget in order to improve the brand and visibility of Rehapolis. In addition, some of the organizations developed dyadic relationships by establishing joint development initiatives and projects such as standardization of care practices and developing new kind of services.

The network picture describing the operational campus network is illustrated in Fig. 3. As it can be seen from the graph, the network is rather dense and includes many strong relationships (the thicker lines represent more than three shared activities) between the actors, which basically means that nearly all organizations had participated in marketing board meetings as well as organized joint events. However, for example Implant Inc. and Occupational Health Inc. stayed rather peripheral with only weak ties to other organizations (mainly because of shared location in Rehapolis). For example, Implant Inc.'s CEO thought that as being a medical research company

they do not have much in common with other organizations and did not participate in any shared activities. In addition, Orton Foundation was connected to other actors only through tenant contracts since it was the main owner of the campus facilities. Furthermore, City of Oulu's presence in campus diminished after its sports department exited and City stayed only as a minor shareholder in Rehapolis 1 buildings.

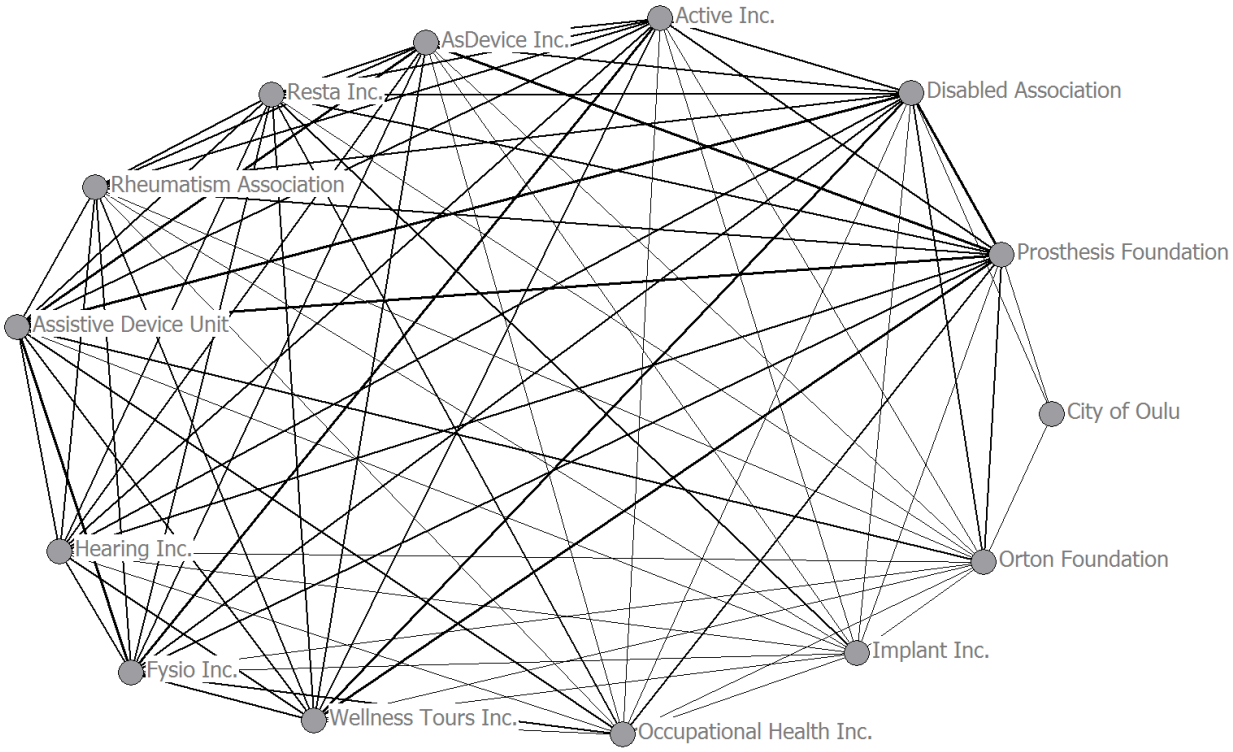


Fig. 3. The inter-organizational network in the operations phase (2008 onwards)

Emergence of the inter-organizational system on its lifecycle

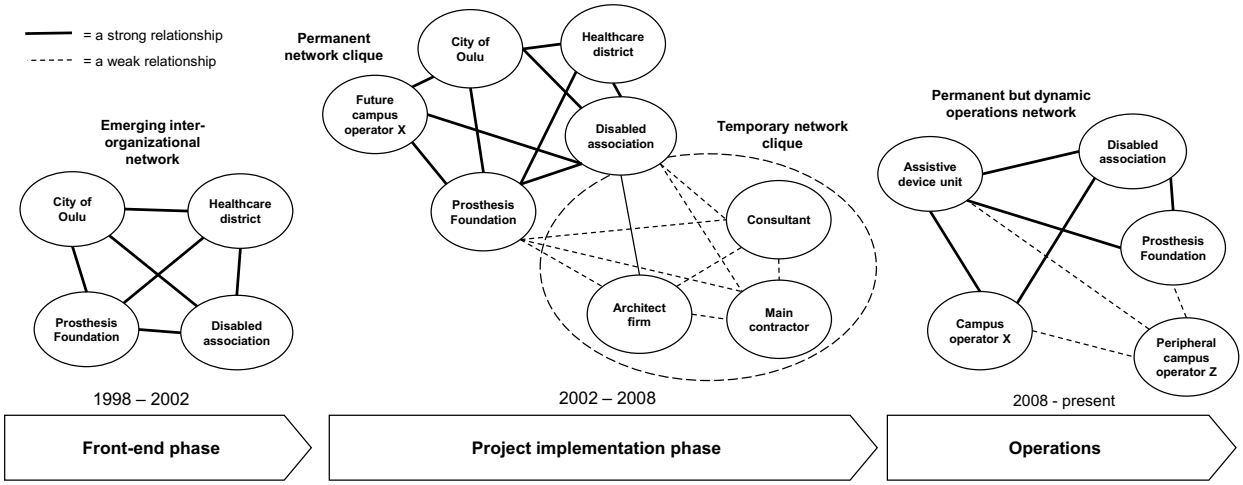
We have summarized the dynamic emergence of the inter-organizational network during the system lifecycle in the Figure 4, which describes an analytical conceptualization of the above network graphs and links them to the system lifecycle activities. When we look the inter-organizational network in each of the lifecycle phase, we see that the network involves both permanent and temporary organizing depending on the project lifecycle phase. Thus, when looking especially the implementation phase network, one can identify two different cliques, which are bridged by Prosthesis Foundation and Disabled Association. Based on the social network analysis terms (e.g. Scott, 2001), we decided to call these as permanent and temporary cliques having different states of permanency.

For example, in the very beginning, before nobody even talked about Rehapolis campus, the network emerged on permanent basis in advisory board meetings. Regular meetings throughout the 1990s among the board members formed trusting relationship between board members creating dense network laying the foundation for Rehapolis campus project.

When the project slowly started in 2002 new actors were included into the network. The business consultant and the architect played major role in concept development phase, helping to gain legitimacy to the project. Also in the construction phase, the network further expanded when main contractor as well as its sub-contractors entered the picture. These actors formed a

traditional temporary project organization responsible for project implementation according to given specification in time and in budget. Concurrently to traditional project management, Prosthesis Foundation and Disabled Association continued engaging the future operators to the campus, thus build the campus network.

Naturally, when the project was finished, the temporary clique of the network dissolved, but the developed campus network continued to evolve when great number of operators moved into the campus. Rehapolis director started to organize marketing board meetings in order to facilitate the interaction inside the network. The campus network can be seen as permanent network, which still undergoes occasional changes. As the case shows, it emerged through project and can be seen as its outcome together with the physical campus.



- Local disability healthcare network started to emerge through Prosthesis Foundation's advisory board
- Network was formed on permanent basis for developing Respecta's business and local disability healthcare field
- Dense network of key operators
- Long-term relationship created high level of trust between the organizations
- Mutual trust and understanding of common problems led to the initial idea of Rehapolis campus in 1998 leading to initiation of the project in 2002
- Through active interaction with various decision-makers, City of Oulu decided to invest in project

- The project was initiated through concept development when Prosthesis Foundation took a role as project developer/buyer and hired a consultant and an architect to develop the plan for campus
- Campus was constructed with open book principle in two phases utilizing a same main contractor in both phases
- Main contractor was responsible of project management and formed & coordinated a temporary network clique (including e.g. sub-contractors) responsible for project implementation
- Actors of temporary network clique were bound together through weak (contractual) ties which dissolved after the project
- Concurrently to campus designing and construction, future campus operators were engaged into the network to develop a permanent long-term campus network for the operations phase
- Prosthesis Foundation and Disabled Association acted as a bridge between these two separate network cliques

- Campus took its full operational mode in 2008
- COO of Disabled association started as Rehapolis director
- Marketing board was formed to facilitate the interaction inside the campus network
- Organization of shared events and other joint activities
- The network has undergone changes (e.g. exit of City's sport department, merger of city's and hospital district's assistive device services) indicating a dynamism also in the operations phase
- Despite co-location some of the campus organizations stayed rather peripheral lacking strong relationships to other actors

Fig. 4. An analytical conceptualization of the emergence of inter-organizational system on its lifecycle.

Differences between the temporary and permanent organizing

To better understand the roles of temporary and permanent organizing in the analyzed project, we aimed to identify some of the very basic attributes in the two identified network cliques. Based on our abductive analysis, we underline five different attributes listed in Table 2: management objective, management activities, nature of relationships, time perception and organizational structure.

When the management objective is concerned, we saw a clear distinction between the very basic goal towards which the certain clique thrived. Temporary network clique aimed purely to build the physical campus thus aimed to develop a tangible technical system and

dissolved after it was finished. In contrast, the permanent network clique aimed to develop the health care service network by finding a suitable organizations and projecting already towards the post-project era. We call this objective as a development of intangible social system.

When the objective between the cliques differed, so did the used management activities. Temporary clique in our case utilized rather traditional project management activities, such as architectural and engineering designing, scheduling and contracting through competitive bidding. Prosthesis Foundation acted as a buyer in the project and hired external developing consultant to assist in selecting suitable architect office and main contractor for the project mainly according to the lowest price. During the implementation phase, Prosthesis Foundation CEO and Disabled Association COO paid regular visits to the construction site to supervise the progress as well as reviewed project reports.

The management activities differed when the permanent clique is considered. The inter-organizational health care network started emerging already well before the Rehapolis project through active but more indirect management such as organizing the advisory board meetings, in which the actors envisioned and constructed agenda for Rehapolis project. Such actions continued when the idea of Rehapolis was born and for example constant meetings with political decision-makers of City of Oulu and top managers of Hospital District were important in building legitimacy for the project. During the project implementation, such relationship building activities led by Prosthesis Foundation and Disabled Association continued when new organizations were sought to join Rehapolis. Even in the operations phase, the inter-organizational coordination bodies were important ways to keep the network vital by for example organizing joint events and marketing efforts.

These activities also indicate the difference in relationships between the actors within these two different cliques. As our network analysis and resulting figures show, the organizations of the temporary clique were mainly interlinked through a project-specific contract indicating an arm's length relationship. In contrast, the organizations of the permanent clique were mainly interlinked through stronger and not purely contractual relationships when they co-located in the same campus, participated in the joint boards and even implemented joint initiatives such as developed shared booking systems and standardized treatment practices (in the operations phase).

The nature of relationships then leads to different network structure. The temporary clique consisting of contractual relationships represents a pseudo-hierarchy in which the project buyer aims to control other actors by defining the project outcome and setting the monetary incentives and compensation for the others. Furthermore, the temporary clique can be seen as closed structure in which new actors can only join through competitive bidding. The permanent clique represents a more relational arrangement with low hierarchy, while no actor has a strong transactional bargaining power over others. In addition, the boundaries of the permanent clique were semi-open meaning that new members were able to join if there was open space in the campus, but they were not chosen through any competitive criteria or were required to invest anything in the network.

Deriving from these differences and based on our analysis, we conclude that these two different cliques had different time perception while participating the network. It was clear to temporary actors that they are only participating in short term undertaking to build the campus facilities, while more permanent actors joined the network as well as campus in order to develop their long-term operations.

Table 2.
Diverging themes between temporary and permanent organizing on the system lifecycle

Theme	Temporary organizing	Permanent organizing
Objective	To build tangible technical system such as a capital good	To develop an intangible organizational system such inter-organizational network
Management activities	• Traditional task-oriented project management such as planning and control • Competitive bidding of suppliers • Architectural/civil engineering design • Scheduling • Project reporting • Construction supervision	• Envisioning and agenda construction • Legitimacy building in the field • Relationship building in joint meetings • Contacting and negotiating with potential new organizational members
Nature of relationships	Arm's length shorter term ties or longer term project-to-project based relationships	Long-term relationship with high level of mutual trust contributing the functioning of developing social system
Network structure	Contractual and transaction-based arrangements causing hierarchical or pseudo-hierarchical structure and closed structure	Relational arrangement resulting low hierarchy, networked and complex structure with semi-open boundaries
Time perception	Short term and temporary time frame with institutionalized termination	Long-time frame going beyond the project with perception of stability

DISCUSSION

The objective of the paper was to empirically study the co-existence and management of permanent and temporary organizing on the lifecycle of an inter-organizational system. Our case study of the Rehapolis health care campus has shown a complex and dynamic emergence of a local health care system through years long planning and network phase (the front-end) leading to and followed by a construction project of two campus buildings. After the completion of the campus, the network has become more stable, but still undergoes occasional changes. Therefore, we conceptually embed a project to a lifecycle of a dynamic inter-organizational system and argue that it is an important part of the lifecycle in delivering change.

We have depicted such inter-organizational system as a network consisting of various actors or forming distinctive cliques inside the network. These cliques may then have different roles and state of permanency on the system lifecycle. We argue that the difference partly derives from the two different outcomes aspired in the project: the development of physical campus building (a tangible and technical end-product of a project) and emergence of the inter-organizational network of campus operators (an intangible organizational and dynamic end-product). Both of such systems evolve concurrently during the project forming two differing objects requiring different management activities. This parallel emergence of two completely different systems with different permanent and temporary relation create complexity in the project and requires different management approaches, for example balancing between soft and hard management methods (Crawford & Pollack, 2004).

Practical project management methods and standards (e.g. PMI, 2013; BS6079, 2010) underline transaction-based market mechanisms such as competitive bidding and contracting as key means to manage network of actors in projects (for an alternative approach cf. Ruuska et al., 2011). However, long tradition of network research has underlined importance of social factors (such as trust, solidarity, and mutuality) also in inter-organizational relations thus go well beyond pure exchange based relationships (Achrol, 1997). Thus, previous studies on network management (see e.g. Järvensivu and Möller, 2009) underlines the importance of continuous management and development of divergent inter-organizational relationships (not just market-based contractual relationships), through different network-level management activities such as framing and joint goal setting as well as activation and mobilization of other actors to join and commit to the network. In Rehapolis, the relationships between certain actors had emerged years before the project implementation and active interaction between different organizations was required to set the idea and goals of Rehapolis. Through such active interaction in various boards during and after the project helped further strengthening the relationships.

On the other hand, the temporary network clique, including the construction company and subcontractors, was created mainly based on competitive bidding. This clique then formed a pseudo-hierarchy (Hellgren & Stjernberg, 1995) within the system in when Prosthesis Foundation as project buyer had transactional power over the contractor, which further had such power to its subcontractors. Thus, especially from the contractor perspective, relationship building was limited and leaned on traditional project-to-project logic (Skaates, Tikkanen & Lindblom, 2002). Good reference from the first phase of the Rehapolis yielded a new contract for second phase, but afterwards the relationship diminished. The temporary network clique actors may not be interested in the participating the development of long-term relationship, but relied on swift trust (trust deriving from the institutionalized role of organizations, not from past mutual interaction) and existing norms and legislative institutions strongly prevalent in project contracting (Meyerson et al. 1996; Ahola et al. 2008).

The basic difference between temporary and permanent organizing is the perception of time span. Temporary organizations are designed to be temporary, although they might last longer than permanent organizations (Lundin & Söderholm, 1995). In the Rehapolis network, the contractor knew that they will only construct the campus and after that move to the other project. In contrast, Prosthesis Foundation, other campus operators and investors such as City of Oulu and Orton Foundation knew that they will sign up for longer time period. Thus, these different perceptions of time span co-existed in the inter-organizational network especially during project implementation phase. The existence of different perceptions of time is reported to increase likelihood of temporal misfits potentially complicating project delivery (Dille and Söderlund, 2011). We argue that understanding and coping with the co-existence of different temporal perceptions is important, not just for on-time delivery, but for reaching value creating project outcomes, which are functional also long after the project is finished. In the other words, the permanent network actors need to incorporate and communicate their views to the temporary organizations in order to ensure the proper designing of both systems, a technical and an organizational.

Traditionally project managers aim to achieve the understanding of these “permanent expectation” through early engagement of stakeholder (for practical implications see e.g. Bourne & Walker, 2008), but we want to emphasize that when we conceptualize project as a phase on a lifecycle of an inter-organizational system, the project is no more a separate manageable entity but tightly interconnected to a more permanent system. Therefore, it may be valid to even ask

that is it a job of a project manager to engage stakeholder or should the stakeholders engage the project manager into system development? By this problematization, we highlight our most interesting finding that in our case the project actually derived from the joint activities of local health care organizations (which might be labeled as "stakeholders") who started to drive change in their field by initiating the Rehapolis project. Naturally we aim not to step on the toes of project managers, but underline the importance of widening our perspective not just by expanding the lifecycle view of the developed physical product (as has been discussed in sustainable project management, see e.g. Labuschagne & Brent (2005), or building lifecycle management see e.g. Vanlande, Nicolle & Cruz (2008)), but also to incorporate a perspective of the organizational system, which should include also more permanent actors and not just the temporary project organization. We argue that such inter-organizational system perspective is by no means a simple one, but complex depiction might be the only way to really map the complex and dynamic nature of project stakeholders as recently called by Aaltonen and Kujala (2016).

CONCLUSIONS

Theoretical contributions

The paper provides several contributions to the theory of temporary organizing and project management. First, by building on the past work of Morris (2013) as well as Artto and colleagues (2016) we offer a fresh conceptualization of a project as a temporary organizing phase on a system lifecycle. In our case study, we show how spanning of the temporal dimension beyond the traditional project phases can actually reveal interesting aspects about dynamics of the system.

Second, to better understand the nature of such dynamic systems, we conceptualize them as an inter-organizational network, which allows to better analyze the temporariness or permanency of the system consisting of multiple interlinked organizations engaging in joint activities (Jones and Lichenstein, 2008). Furthermore, we show how to utilize a practical method of social network analysis in order to better illustrate the dynamic change the inter-organizational system undergoes during its lifecycle. We see that our method strengthens the traditional case study approach and gives us much more attractive and justified findings about the investigated phenomenon.

Third, deviating from traditional conceptualization of projects as temporary organizations (Lundin and Söderholm, 1995) our conceptualization and empirical research shows that when projects are depicted as inter-organizational systems or networks, they seem to include highly intertwined permanent and temporary organizing structures, or cliques, complementing each other but potentially complicating management of the overall system. According to our analysis, the need for parallel organizing forms originates from the multifaceted (tangible and intangible) objectives of the complex inter-organizational systems.

Fourth and final, to advance our understanding on such systems consisting of divergent parts, we present five differentiating features of the two parallel organizing forms: objective, management activities, nature of relationships, network structure, and time perception.

Managerial implications

The study shows that practitioners should start accounting diverging aspects of temporary and permanent organizing and widen their perspective beyond the project. If managers keep treating projects as bare temporary forms of organizing, they might fall in trap of not seeing the true value creating potential of the complex system, of which development they are responsible.

Myopic focusing on tangible outcomes may become expensive when more and more economic activity is undertaken as projects, which in the light of our research are merely just temporary launching pads or vehicles of longer-term value creation. Identifying the permanent and temporary cliques during the system lifecycle and developing distinctive activities for concurrent management of both cliques as well as their interfaces provides project managers new tools to improve their customers' long-term value. For project managers as well as for designers and managers of the inter-organizational systems the study highlights the salience of developing and utilizing social relationships in order to ensure that temporal project organizing provides sustainable value for the permanent inter-organizational system.

Limitations and future research

In our explorative study, we succeeded only to provide a simple illustration of the dynamic lifecycle of an inter-organizational system. The illustration was based on three simplified sociomatrices, which were formulated from our retrospective interview data triangulated with archival material. Furthermore, the depicted networks by no means include all of potential actors, who had participated in the inter-organizational system, but for sake of analytical simplicity, we had to restrict our analysis only to the very core organizations. Despite these limitations, we believe that through our explorative findings, we have been able to elaborate the existing theories and more importantly formed a basis for future research on temporary and permanent relation in projects. With more sophisticated research design utilizing a more direct data sources for social network analysis (e.g. e-mail correspondence, phone calls, contracts or other ERP-data) or by incorporating a longitudinal design, future researchers could tease out even more detailed findings about the dynamism of inter-organizational systems. We wish that our explorative research helps open up also new avenues for strong conceptual research aiming to clarify the relation between permanent and temporary organizing even further.

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APPENDIX 1 - SOCIOMATRICES

Appendix 1-A. The sociomatrix of the inter-organizational network in the front-end phase.

	Prosthesis Foundation	Disabled Association	Orton Foundation	Municipal Assistive Device Unit	Hospital District	City of Oulu
Prosthesis Foundation		**4**	**3**	**3**	**2**	**3**
Disabled Association	1. PF's advisory board 2. Same temporary office 3. Service development initiatives 4. Reha pre-project steering commitee		**0**	**3**	**2**	**3**
Orton Foundation	1. PF was Orton's subsidiary until 2012 2. PF CEO requested funding from Orton 3. Headquarters in the same location in Helsinki			**0**	**0**	**0**
Municipal Assistive Device Unit	1. PF's advisory board 2. Service supply contracts 3. Reha pre-project steering commitee	1. PF's advisory board 2. Peer support services 3. Reha pre-project steering commitee			**2**	**3**
Hospital District	1. PF's advisory board 2. Reha pre-project steering commitee	1. PF's advisory board 2. Reha pre-project steering commitee		1. PF's advisory board 2. Reha pre-project steering commitee		**2**
City of Oulu	1. PF's advisory board 2. Reha pre-project steering commitee 3. Letter to city council	1. PF's advisory board 2. Reha pre-project steering commitee 3. Letter to city council		1. PF's advisory board 2. Reha pre-project steering commitee 3. Owner of Municipal Ass. Dev. Unit before a merger with Hospital District	1. PF's advisory board 2. Reha pre-project steering commitee	

Appendix 1-A. The sociomatrix of the inter-organizational network in the front-end phase.

	Prosthesis Foundation	Disabled Association	Orton Foundation	Municipal Assistive Device Unit	Hospital District	Wellness Tours	Development consultant	Architect firm	Main contractor	City of Oulu
Prosthesis Foundation		4	3	3	3	1	3	1	1	2
Disabled Association	1. Reha development board 2. Co-developers of the project 3. Shared office 4. PF advisory board		0	3	2	1	1	1	1	0
Orton Foundation	1. PF was Orton's subsidiary till 2012 2. Orton is a funder of Rehapolis 3. Headquarters in same location in Helsinki			0	1	0	0	0	0	1
Municipal Assistive Device Unit	1. Advisory board 2. Reha development board 3. Service supply contracts	1. PF advisory board 2. Reha development board 3. Peer support to disabled patients			2	1	0	0	0	0
Hospital District	1. PF advisory board 2. Reha development board 3. Joint funder of Rehapolis 2	1. PF advisory board 2. Reha development board	1. Joint owner of the Rehapolis 2	1. PF advisory board 2. Reha development board		1	0	0	0	0
Wellness Tours	1. Reha development board	1. Invited to Rehapolis project development board meetings		1. Invited to Rehapolis project development board meetings	1. Invited to Rehapolis project development board meetings		0	0	0	0
Development consultant	1. Hired by PF to assist in project development 2. Worked together to develop the project	1. Worked together with PF CEO to develop project						1	1	0
Architect firm	1. Hired by PF for project implementation	1. Worked together with PF CEO to develop project					1. Worked together in project development and implementation		1	0
Main contractor	1. Hired by PF for project implementation	1. Worked together with PF CEO to develop project					1. Worked together in project development and implementation	1. Worked together in project development and implementation		0
City of Oulu	1. Joint owner of the Rehapolis 1 2. Reha development board		1. Joint owner of the Rehapolis 1							

Appendix 1-C: The sociomatrix of the inter-organizational network in the operations phase

	Prosthesis Foundation	Disabled Association	Orton Foundation	Resta Inc.	Fysio Inc.	Assistive Device Unit	Rheumatism Association	Hearing Inc.	Wellness Tours Inc.	Active Inc.	Occupational Health Inc.	AsDevice Inc.	Implant Inc.	City of Oulu
Prosthesis Foundation		4	3	3	3	4	3	2	4	3	2	4	1	1
Disabled Association	1. Marketing board 2. Same office 3. DA CEO employed by PF as Reha director 4. Shared events		2	3	3	4	3	3	4	3	1	3	1	1
Orton Foundation	1. PF was Orton's subsidiary until 2012 2. Rehapolis facility management 3. Headquarters in Helsinki	1. Disabled Association COO was director of Rehapolis 2. Tenancy		1	1	2	1	1	1	1	1	1	1	1
Resta Inc.	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Tenancy		3	3	3	3	3	3	3	3	2	0
Fysio Inc.	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events		4	3	3	3	4	2	3	1	0
Assistive Device Unit	1. Operate in Rehapolis 2. Marketing board 3. Service supply contracts 4. Development initiatives	1. Operate in Rehapolis 2. Marketing board 3. DA provides disability peer support 4. Joint initiatives	1. Tenancy 2. Joint owner of Rehapolis 2 (Hospital District)	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Operate in Rehapolis 2. Marketing board 3. Service supply contracts 4. Development initiatives		3	3	3	3	2	4	1	0
Rheumatism Association	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events		3	3	3	1	3	1	0
Hearing Inc.	1. Operate in Rehapolis 2. Previous subsidiary of PF	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events		3	3	1	3	1	0
Wellness Tours Inc.	1. Marketing board 2. Operate in Rehapolis 3. Joint development project 4. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Joint development project 4. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events		3	1	3	1	0
Active Inc.	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operating in Rehapolis 3. Shared events 4. Joint services (until 2016)	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events		1	3	1	0
Occupational Health Inc.	1. Operate in Rehapolis campus 2. Occasional service contracts	1. Operate in Rehapolis	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Operate in Rehapolis campus 2. Occasional service contracts	1. Operate in Rehapolis campus 2. Occupational health service contract	1. Operate in Rehapolis campus	1. Operate in Rehapolis campus	1. Operate in Rehapolis campus	1. Operate in Rehapolis campus		1	1	0
AsDevice Inc.	1. Both operate in Rehapolis 2. Marketing board 3. AD manager previously employed by PF	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Tenancy	1. Operate in Rehapolis 2. Restaurant and catering services 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Operate in Rehapolis campus 2. Marketing board 3. Service provider contract 4. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Marketing board 2. Operate in Rehapolis 3. Shared events	1. Operate in Rehapolis campus		1	0
Implant Inc.	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Tenancy	1. Operate in Rehapolis campus 2. Restaurant and catering services	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis	1. Operate in Rehapolis		0
City of Oulu	1. Joint owner of Rehapolis 1	1. DA COO was Reha facility manager	1. Joint owner of Rehapolis 1											