

It takes two to tango: the fit between network context and inter-organizational strategic information systems planning

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Abstract

The view of evaluating Strategic Information Systems Planning (SISP) process and effectiveness has matured. The inter-organizational view or network view however is understudied. The introduction of information strategy in networks seems to be more reactive than proactive; many organizations continue to use SISP as a way to support their internal decision-making process without actually co-operating with their business partners.

This paper aims at qualitatively exploring and validating respectively context and process dimensions in two inter-organizational cases: a network of municipalities in Finland and a network of healthcare organizations in the Netherlands. The first case study explores the network context and results in a theory on how network context influences inter-organizational SISP. It seems that the inter-organisational SISP process is influenced by 1) the external environment, 2) the network context 3) the nature of the planned (inter-organizational) information systems and 4) resources committed to the inter-organizational SISP process. The role of trust and complexity of the planning environment are handled. The second case study shows that the traditional SISP process dimensions are incomplete in an inter-organizational context. The result of this case study is the recommendation to add three process dimensions: contingency, certainty and contractual agreements.

Keywords: Inter-organizational, SISP, Evaluation, IT governance, eGovernment & e-health.

1 INTRODUCTION

The image of strategic IS planning (SISP) has changed over years. Early research on SISP focused primarily on the formal study that led to a formal SISP plan. SISP is, however, part of a wider

planning system and thus only one way to support decision making in organizations. Empirical research on SISP in different decades has shown that companies also adopt different approaches to developing IS plans ((McLean and Soden 1977) (Pyburn 1983) (Earl 1993) (Segars and Grover 1998)).

Our society shifts to a network society(Castells 1996), which makes boundaries between organizations more permeable and vague (Alexander 1992). This increases complexity of governmental ICT projects. For example, the OECD (2003) published a report on e-government in Finland stressing the challenge of coordinating the collaboration between governmental bodies on large ICT projects. Finland is not the only country facing such challenges (Ernst&Young 2007); in Dutch Healthcare, the challenge of coordination is even bigger, as networks are not only horizontal (same organizations working together) but also vertical (e.g. healthcare chains) (Hong 2002). Networks of organizations are increasingly undertaking planning of a portfolio of Inter-organizational systems that helps to achieve the common goals of the network. This is referred to as Inter-Organizational Strategic Information System Planning (IOSISP) (Spil and Salmela 2007). Sadly, academic studies on IOSISP are still rare. A study of relevant literature shows that most research so far focuses on either SISP in a single organization or governance issues of Inter-Organizational information systems and networks. Like SISP, networks seem to vary in the way they approach IOSISP (Finnegan, Galliers et al. 2003).

Methods for evaluating a SISP study are fairly well documented. The conceptual framework presented by King (1988) provides a good basis for evaluating SISP. (Baker 1995), Lederer & Salmela (1996) and Brown (2004) provide a more dynamic model. Additionally, survey instruments have been developed that researchers can use in measuring planning success according to predefined dimensions (Segars and Grover 1999). This research adopts these frameworks to evaluate the processes of SISP in two cases of network organizations. In addition to this theory on SISP evaluation, the paper also makes a more situational evaluation of SISP. The differences between these two evaluations are then discussed. While supporting the prior evaluation methods, the paper suggests that also a contextual evaluation can provide interesting insights and promote learning.

In terms of IOSISP process dimensions, prior research on inter-organizational systems suggests fairly emergent forms of planning between different stakeholder groups. The formulation and implementation of IOS strategy is typically described as an emergent process driven by perceptions of power, interest and environmental forces which are only partially controlled(Konsynski and Tiwana 2004; Boonstra and Vries 2005). Often, individual companies make their own strategies, which are based on assumptions related to other networks parties' expectations and future actions(Phan 2001). It is, however, very common that the outcomes are different from what was originally planned by individual parties (Pouloudi and Whiteley 1997; Boddy 2000)

Although planning processes between different parties tend to be emergent (i.e. characterised by low comprehensiveness and formalization and limited participation), there are also reasons to believe that a more comprehensive planning – in particular in a favourable context – could lead to better outcomes. For instance, comprehensive planning could lead to improved common understanding about the benefits of IOS to all parties. The resulting common understanding has been found to better commit all parties in the network to implement systems and process changes(Chatfield and Yetton 2000).

In the public sector organizations, where formal political decisions are required to implement information exchange between different agencies and public sector organisations, plans are used as a means to find solutions between conflicting interests of different stakeholders(Christiaanse and Huigen 1997). As a result, also the planning processes in the public sector are more comprehensive and formal. In those cases, when the objective is to improve information sharing practices on the whole industry through e.g. development of common standards, the requirements for planning

comprehensiveness increase. Wide participation in planning is believed to contribute to wide adoption of resulting systems and standards (Steinfeld, Markus et al. 2005).

On inter-organizational level, Lin (2006) and Salmela and Spil (2006) are the first to deal with evaluation of Inter organizational SISP. The first comes up with three organizational dimensions based upon Segars and Grover (1999) and two inter organizational dimensions based on Premkumar and Ramamurthy (1995). The latter base their organizational dimensions also on Segars and Grover but explore corporate strategy (Ring and Ven 1992) and network theory (Castells 1996) and come up with three complimentary Inter organizational dimensions. Both studies do not seem complete yet.

This paper aims to study how IOSISP could be evaluated, so it could give reasons why process and effectiveness of IOSISP differ among networks. Apart from dimensions known from SISP research, we will focus on contextual factors from the internal and external environment of the networks, which should fit the planning process in order to be successful (Teo and King 1997). Empirical evidence for inter-organizational contextual and process dimensions is explored and validated in two inter-organizational cases.

How is the research question answered by this paper? First, the key elements of IOSISP evaluation will be defined. Next, an extensive literature review on contextual and process dimensions is presented. In section five these dimensions are qualitatively tested. Next, these analyzed in section six. The paper ends with conclusions and discussion.

2 DEFINITIONS

This chapter aims at defining the main elements relevant to evaluating IOSISP: (1) networks (2) SISP (3) IT governance (4) IOSISP.

There are many different definitions of networks, some in a very general way, and some described in a definition in the public sector. A network can be seen as a specific variant of an organization, albeit more distributed and loosely coupled than within the traditional hierarchical boundaries (Finnegan et al. 1999). Others define a network in a very general way as “a set of nodes and the set of ties representing some relationship, or lack of relationship, between the nodes (Brass et al. 2004). Recently, Provan et al. (2007) define a network as bounded by including only those organizations that interact with one another in an effort to achieve a common purpose.

Traditionally, SISP was defined as a process that defines a portfolio of IS applications that supports the organisation’s business plans and goals (Lederer and Sethi 1988). The definition of SISP as a process does not restrict SISP to a formal study. However, the idea of planning resulting in a portfolio of IS applications is very narrow – plans can and do contain a large number of other aspects. Furthermore, while business plans and goals are important dimensions, there are others. Because of the differences in the ways how organisations make strategic IS decisions it is difficult to narrow down the content of decisions, or dimensions to be used.

It is also interesting to compare the definition of SISP to definitions given to IT governance. IT governance has been defined as “an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization’s IT sustains and extends the organization’s strategies and objectives” (IT Governance Institute, 2007, Chin, 2004). IT governance gives more freedom in analyzing organizational arrangements that ensure alignment. The ability to make effective plans is a highly significant capability in IT governance. Still, there should be a growing recognition that SISP is part of a larger IT governance context. Inter-organizational SISP (IOSISP) could then be defined as: *an integral part of network governance and consists of the multiple leaderships and organizational structures and processes that ensure that the network’s ICT sustains and extends the network’s strategies and objectives* (Spil & Salmela, 2007).

3 EVALUATING IOSISP PROCESSES AND NETWORK CONTEXT

The first comprehensive model for evaluating strategic IS planning was provided by King (1988). The model prescribes an operational approach for making a comprehensive evaluation of an organisation's process for strategic IS planning. It describes an IS planning system that is driven by three varieties of inputs and which, in turn, produces outputs. The three inputs identified in the model are the informational inputs, the resource inputs, and the IS planning goals. The outputs are depicted as ultimately influencing business performance. This model has provided a basis for large quantitative studies (Raghnunathan and Raghnunathan 1991; Premkumar and King 1994). The general theme in these studies was to validate King's model, i.e. to show that better inputs lead to better strategic IS planning system, which in turn lead to better outcomes..

King's model is the basis of the research framework shown in figure 2, which structured an extensive literature review on contextual factors of IOSISP. The planning process and the effectiveness of IOSISP are influenced by factors from the external environment, internal environment, the nature of planned IOS and resources. Next, we will elaborate on the contextual and process dimensions in an inter-organizational context.

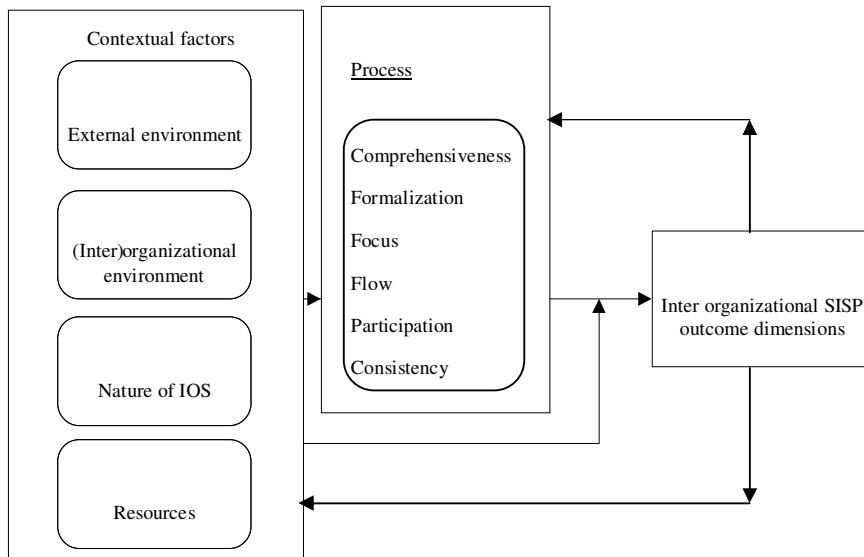


Figure 2: Research framework of IOSISP context

3.1 External environment

The external environment of an organization is seen as an input in the SISP process (Lederer and Salmela 1996; Brown 2004) and influences the process and effectiveness. We found the following sub factors:

Type of industry

The information intensity of an industry could have an impact on the SISP process (Premkumar and King 1991) as the resources can differ among industries. The industry type does not seem to influence the effectiveness of the SISP process (Premkumar et al. 1994b).

Heterogeneity

Heterogeneity refers to the number and diversity of external factors in an organization's external environment (Sabherwal and King 1995). Differentiation in stakeholders during planning makes it

harder to get consensus (Byrd, Sambamurthy et al. 1995). The inclusion of external stakeholders with conflicting interests can be expected to influence the coherence and timeliness of planning (Holley, Dufner et al. 2004). Heterogeneity increases the complexity of this process, as all external stakeholders need to be taken in account and so SISP tends to be more comprehensive and the level of analysis within the SISP process increases (Sabherwal & King, 1995) .

Dynamism

Environmental dynamism refers to the unpredictability and rate of change in the external environment (Sabherwal and King 1995). The implications of dynamism for SISP process is two sided: organizations need to adapt swiftly in a dynamic environment (Pyburn 1983). Conversely, organizations need analysis to keep track with uncertainty (Salmela, Lederer et al. 2000). In practice, most managers are reluctant to decide quickly (Sabherwal and King 1995). How to deal with uncertainty changes when an organization evolves: under conditions of increasing dynamism, organizational mechanisms are used by organizations to control and stabilize their relationship with the external environment (Grover and Segars 2005).

Hostility

Hostility represents the thread of environmental elements that restrict resources (Sabherwal & King, 1992). Market pressure as an influence on IOSISP process, resulting in more hierarchy (Mulder and Spil 2007). Hostility is associated with politics, in which SISP is seen as a bargaining and negotiation process. Government agencies face more hostility (Bajjal 1998), which characterize the process with low levels of formalization, comprehensiveness, consistency and participation (Segars and Grover 1999).

3.2 (Inter)organizational environment

IO SISP varies according to different organizational circumstances (Wang and Tai 2003). These circumstances can be divided in the following sub factors:

(Inter)organizational structure and governance

The planning of inter-organizational systems is usually embedded in a network. There are three types of networks based on coordination mechanisms (Salmela and Spil 2006):

- Relational networks, based on trust
- Hierarchical networks, based on authority
- Contractual networks, based on agreements

As figure 3 shows, the different networks and their coordination mechanisms are related to their planning approach: markets lack planning and are coordinated by transactions and contractual agreements, hierarchical networks use formal planning (Alexander 1992), and relational networks coordinate and plan informally (Spil and Salmela 2007).

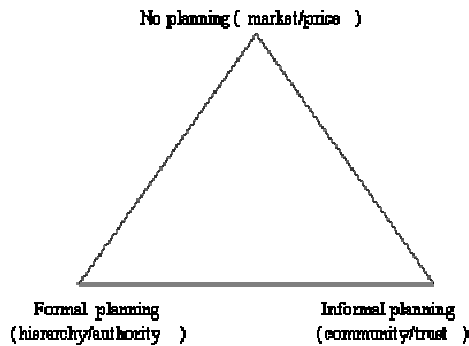


Figure 3: Relation network coordination mechanism and planning

The degree of planning is reflected in a network's governance structure, as there are three possibilities of governance in a network (Provan, Fish et al. 2007):

- Shared governance: no unique, formal governance structure other than through the collaborative interactions among members themselves, which can cause unsophisticated planning (Huxham 1993).
- Network administrative organization is an overarching authority that supports the leadership in a network, which creates an hierarchy mechanism and therefore more formal planning.
- Lead-organization: there is a more powerful organization in the network that has sufficient resources and legitimacy to play a lead role. A dominant partner causes hierarchy, which increases the comprehensiveness of planning (Finnegan, Galliers et al. 2003).

(Inter)organizational size

Large and complex companies tend to follow more systematic and formalized strategic IS planning practices (Pyburn 1983). Firm size does not seem to influence SISP effectiveness (Premkumar and King 1994). The size of network is an antecedent for network mechanism and planning. An higher number of partners in a network is likely to lower the decision making authority and autonomy and therefore there is less hierarchy when nothing is arranged to structure the network. A network of many organization of the same sector need more hierarchy to keep track of all parties and activities in the network (Astley 1984).

Organizational culture

Organizations with a formal culture are more likely to have a comprehensive SISP process (Earl 1993). Culture has an influence on decision making approaches in organizations, formalization and reward of innovation, which in their turn influence the SISP process (Guimares and McKeen 1989).

The role of the IS function

Centrality of IT the function has a negative influence on shared domain knowledge and results in less improvement in planning capabilities (Wang and Tai 2003). A lack of shared domain knowledge between IT and business managers decreases the rationality and comprehensiveness of the SISP process (Sambamurthy, Venkatraman et al. 1993). Decentralization can boost the differentiation in internal stakeholders, which makes it harder to get consensus (Byrd, Sambamurthy et al. 1995). Formalization of the IT unit is positively related with rationality of the SISP process (Sabherwal and King 1995). The more the IT function is integrated with the business function, the more the SISP process becomes sophisticated (Sabherwal 1999).

3.3 Nature of the IOS

A major factor that influences the SISP process is the strategic importance of IS in general for an organization and IS in specific. The strategic grid model is used to categorize planning approaches (Jiang and Klein 1999). Organizations that plan IS with a high strategic impact commit more resources to planning, have a long-term planning horizon, and perform quality planning, otherwise SISP tends to be more short-term and tactical. High strategic impact means higher levels of IS business integration and top management and user involvement (Premkumar and King 1992). It also raises acceptance of SISP in the organization, enables resources, increases the perceived usefulness of SISP and increases the support from top management for SISP. The relatively higher complexity of IOS compared to intra-organizational systems urges the need for IOS planning (Finnegan, Galliers et al. 1999). There is a relation between the network structure and the nature of IOS, denoting the structurability, coordination mechanism and conflict in coordination of the IOS (Kumar and Van Dissel 1996). IOS planning is more fluid than IS, resulting in little planning (Sabherwal and King 1995). Ownership is also important: the more partners in a network mutually own the IS, the more hierarchic the coordination and planning (Provan 1984).

3.4 Resources

King (1988) mentions three kinds of inputs of the SISP process: informational inputs, non-informational inputs and SISP planning goals.

Informational resources

Business goals and plans are important inputs for the process as they determine the horizon and the effectiveness of SISP. BSP-SISP integration increases SISP sophistication, because it enables opportunities for IS to add strategic value (Sabherwal 1999). Top managers and users become more committed to SISP in case of an high integration (King and Teo 1997). IS mission and vision are important informational inputs too and the quality of informational inputs has an influence on the perceived quality and effectiveness of SISP (Premkumar and King 1994). Experience and knowledge of SISP increases the comprehensiveness (Grover and Segars 2005).

Non-informational resources

User, IT and top management commitment are very important for the quality and effectiveness of SISP (Basu, Hartono et al. 2002). A lack of financial resources decreases the comprehensiveness and adaptability of the SISP process (Segars and Grover 1999). Methods, often chosen by consultants, enhances comprehensiveness, but can be too rigid (Earl 1993). Trust between stakeholders in the planning process is important: low relational certainty among network partners favour hierarchical or contractual control mechanisms. If partners in a network have worked more often together, the number of formal agreements in a network will diminish. Non-informational resources positively influences the quality and effectiveness of SISP (Premkumar and King 1994).

(IO)SISP planning goals

The reasons for conducting SISP also influence its process (King 1988). Organizations make a trade-off between implementation speed and fit with the organizational goals. The choice depends on what the organization values most. Networks with disparate partners need leadership and comprehensive planning to harmonize (Volkoff, Chan et al. 1999).

3.5 Process Dimensions

A recent research combined the results of previous qualitative and quantitative studies (Segars and Grover 1999; Grover and Segars 2005). The evaluation of strategic IS planning process was based on six dimensions, many of which had emerged in the qualitative studies: comprehensiveness, formalization; flow; focus; participation; consistency.

Comprehensiveness

The extent to which an organization attempts to be exhaustive or inclusive in making and integrating strategic decisions.

Formalization

Existence of structures, techniques, written procedures, and policies that guide the planning process.

Focus

Balance between creativity and control orientations inherent within the process structure.

Flow

Locus of authority or devolution of responsibilities for planning.

Participation

The breadth of involvement in planning; e.g. number of planners involved, representation from various functional areas.

Consistency

The frequency of planning activities or cycles as well as the frequency of evaluation/revision of strategic choices.

4 STUDY DESIGN

The objective in this study is to investigate evaluation of IOSISP. This is done through evaluation of IOSISP in two case studies:

- A network of fifteen healthcare organizations;
- A Network of four municipalities.

The theory based evaluation relies on the Segars and Grover (1999) framework. Evaluation of SISP process and effectiveness are made according to predefined dimensions.

The contextual evaluation is based on a view that SISP is not an end in itself, but it is only one of the processes within the overall IT governance. Evaluation looks at the situational objectives for SISP, the way IT governance context shaped the planning process, and the outcomes that were achieved. The IOSISP process analysis is done with the process dimensions of Segars and Grover (1998). Mulder & Spil (2007)'s interview model on process and effectiveness for the interview. Two pilot interviews were used to test and tune the interview on duration, comprehensibility, reliability.

Two experts were interviewed to obtain background information on inter-municipality projects and to identify and select two projects that differed in planning approach and fitted in the definition of IOSISP. The second case was more comprehensive: the same municipalities formulated an IT strategy for the metropolitan area in 2006. By using snowballing and theoretical sampling (Ruohonen 1991) most stakeholders in both projects were selected. Participants worked in different organizational layers: from CIO's to analysts. Some participants were involved in both projects and therefore they were interviewed about both cases in the same interview.

A total number of 26 interviews (13 in each case) were conducted with 26 stakeholders. One interview was conducted in the form of a group interview, in which the CIO and project manager of the same municipality were complementing each other in the interview. The interviews took place at the interviewee's office and took approximately 1.5 hour. Apart from interviews, project documents were collected. To make some assumptions on network level two interviews were repeated and one additional interview was done.

A conceptually clustered matrix was used to analyse both cases (Miles and Huberman 1994), in which the factors and interviewees were listed and analysed on differences and similarities. Subsequently, a cross-case analysis was conducted to identify differences and similarities.

5 ANALYSES

The case results are shown in the appendix to be able to make a good comparison between the Finnish and the Dutch case. This means that the content of these tables is not repeated in the main text of this paper. The case data is shown in three different tables: (1) focal network (2) network context (3) IOSISP process.

Focal network

Both networks exist for longer time and that time is needed to get to know each other and to be able to trust each other. Over time the networks changed due to learning but also due to changing contexts.

Network context

The cases showed that heterogeneity in the external environment determines the comprehensiveness and time horizon of the planning, because interacting with multiple, disparate external stakeholders slows down the process. The lower complexity in the Metropolitan area case made the planning much faster than the healthcare case, which needed more comprehensiveness to keep up with all players. The external environment can enhance IOSISP, like the pressure from the central government on municipalities to merge in the metropolitan area project. In opposition, external forces like privacy or procurement law can discourage cooperation, especially in the healthcare network context.

The cases also show that IOSISP is highly embedded in an inter-organizational setting, which has a high impact on how it is initiated, who is committed to the planning process and how it is approached. The Metropolitan area case had a clear top-down start, just as the healthcare network. The differences in governance structure of both networks, lead organization versus network administration organization (Innovation Care in Twente), can explain differences in comprehensiveness.

The nature of the planned IOS can play a role as well: the more important the IOS, the more likely that top management is involved. In both cases there was a high top management support, as both projects were strategic or enabled strategic information systems for the future. In the healthcare case the replacements of those top managers had a big influence on the planning process.

Resources had more direct impact. The metropolitan area case had a business strategy as a direct input, which made the planning top down and formal. In the healthcare case there was no network strategy as input so the planning process was more informal. Previous relation, experience and knowledge is positively influencing IOSISP in both cases. Non-informational inputs in both cases were mostly related to external and internal environment, such as the governance structure

In sum, most differences in planning between both case studies can be explained by contextual factors. Both theory and practice show that contextual factors have a profound influence on IOSISP.

IOSISP process

Competitive pressures and “market pressures” have an important impact on the IOSISP process. Premkumar and Ramamurthy (1995) specifically address an internet based system, where IOS can be

much more than just an internet system. From the vertical role and strategic focus we learn that we have to ask strategic market pressures (necessity, willingness). Together with trading readiness we propose to assess Contingency in a more general way with questions about the environment of the IOSISP process. Trading readiness as described by Lin (2006) and Chwelos (et al, 2001) we think it is too much technology oriented for IOSISP purposes. On this level it might go much further towards mergers and acquisitions.

Contractual agreements as described by Salmela & Spil (2006) often are a problem in the IOSISP. It can be the first step up toward a more transactional approach. Another measurement related to the contractual agreements could be legal agreements. Financial agreements are not easy to observe, neither available on the documents. A critical appraisal of costs and benefits from the start could make the process much clearer. Sharing resources in order to share costs and risks is an activity taking place in the horizontal strategic corner. For each participant integration problems will arise.

The Certainty has to be assessed according to Ring and van de Ven (1992) and this could be done by assessing the problem level and the size of the network. Also the Focal questions are targeted on the certainty of the implementation. Many IOS initiatives seem to emerge within the vertical linkage an operational role. Supply Chain Management often drives these initiatives.

Top management participation plays an important role in the IOSISP planning process. Some organizations only involve the CIO, others send the CEO and the CIO. Some CEO's have the leading role, some a supportive role. In this external context, top management is necessary for the continuity of the process but since these management positions change over time and the planning process has a very long scope, different top managers will take different positions during the IOSISP process. Top management participation seems more important than the previous process dimensions. The study of Lin (2006) confirms it. In the Hong (2002) grid IOSISP governability should take care of "creating trust between potentially untrusting partners".

The other process dimensions did not show much different from the normal SISP processes. From the comparison we can see that in both cases the organizational approach or learning school (Segars and Grover 1999) had the best fit with the scores on all the six dimensions. Only the focus dimension showed a small dog leg in the Dutch case.

	Innovation Care in the Netherlands	IT Plan Municipalities Finland
<i>Process</i>		
Comprehensiveness	Medium	Medium
Formalization	High	High
Focus	Creative or Medium	Control
Flow	Top Down	Top down
Participation	Broad	Broad perspective
Consistency	High	High

6 CONCLUSIONS

Network context

To state that the complexity of the context rises when doing strategic IS planning in an inter-organizational context does not come as a surprise. Still, to notice that the context influences the approach and network type in such a clear way was an eye-opener. Further research has to show if this clear connection is a coincidence or a rule.

Dynamism is one of the key areas to explore more extensively. We have only scratched the surface on this subject but it is clear that the network planning moves in several direction during time and that it does not follow a hyperbolic evolutionary path like shown in Grovers & Segars (2005).

The network type seems to follow the level of trust and control in the network context. When the level of trust is high, a shared network type can be used but when the control is high, the network type will shift toward leadership or network administrative.

IO processes

Where the overall IOSISP effectiveness seems to be a redesign of the existing dimensions, the process dimensions clearly change in a network context. For top management participation, the significant influence is confirmed in this study. In literature the relation with capability and alignment is shown but in this study also a close relationship with co-operation is visible. This might ask for a more complete evaluation model. The other process dimensions seem less important than top management participation. Only market pressure seems important in industry as the Taiwan study shows but because this case is in healthcare it is not that recognizable. Within SISP literature the market pressure would be closest to the context or contingency dimension (e.g. turbulence, IT maturity, technical complexity, consensus, significance of IT). We argue therefore to study a dimension IO contingency in stead of market pressure.

Future research

Future research has to validate some of the results shown in this study. As the underlying organizational dimensions are thoroughly grounded and validated, only the additional external dimensions have to be proven and completed. This study only showed that they are not yet complete and not on the same level for comparison for this case study.

Limitations

This study delivers new dimensions and insights but clearly the results cannot be generalized from these two case studies. Gathering empirical material from network planning proofs to be time consuming and difficult. We encourage researchers to apply and validate our results as “eating is the proof of the pudding”.

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APPENDIX

Table 1. Focal project dimensions

		Innovation Care in the Netherlands	IT PLAN Municipalities Finland
Focal network			
	<i>Duration</i>	The first project was in 2003, and there are new projects still going until now.	The project lasted 1 year and was exactly on schedule.
	<i>Goal</i>	To make use of ICT innovation in health care industry in Twente region.	The aim was to cooperatively find out what joint services mean for IT in the metropolitan area.
	<i>Other projects</i>	The innovation care in Netherlands collaboration goes back to the start in 1999. At that time there were no specific projects but there were plans and ideas.	Cooperation between the three big cities in the metropolitan area goes back to the 70's. Some IOS that were made back then are still operational. Cooperation will intensify in the future.

Table 2. Network context dimensions

		Innovation care in the Netherlands	IT PLAN Municipalities Finland
Weak ties			
	<i>Forces</i>	At first, there was an awareness of the importance of innovation in health care in the region by some knowledge institutes and health care organizations and together they started the foundation.	The merger of municipalities, was one of reasons why the project was started.
Strong ties			
	<i>Number of organizations</i>	19 organizations consist of health care organizations and health care professional organizations.	Four municipalities in the metropolitan area: Espoo, Helsinki, Kauniainen and Vantaa.
	<i>Equality among network partners</i>	There is no equality among network partners; they are all different with respect to size, power, trust, effort, cost and benefit.	The smaller the municipality, the more important the need for cooperation, as joint resources can enable services. Furthermore, the more effort, the more decision

			power in the team.
	<i>Initiation</i>	The initiation is more bottom up. It was initiated by some knowledge institutes and health care organizations and together they started the foundation which consists of representatives from each member.	Top down. The top management of the four metropolitan area cities decided in 2005 to closely work together on services. After setting a strategy, fourteen functions started to make plans in the functional area in 2006. The IT department was one of them. The IT directors, two secretaries and functional IT managers formed a planning team.
	<i>Existing relationships</i>	Good. The parties knew each other, and had already worked together previously, but never in the ICT field.	Team members worked a lot together, so they knew each other very good.
	<i>Atmosphere</i>	Good with some suspicion	Good
	<i>Leadership</i>	Board member of ICIN.	Although Helsinki is the biggest player, Espoo was democratically chosen by the network council as the chair in the planning team.
	<i>Contractual agreements</i>	There is a formal contract, which risks, transfers and deadlines are set. Later, the project has been embraced by ICIN and additional (contractual) agreements.	None
	<i>New legal bodies</i>	There was no formal legal entity created.	Yes, metropolitan area coordination group for information systems. The members of which would be the it directors of the CIO's of the four cities.
Role of IT			
	<i>Centralization</i>	The aim of ICIN is to make a centralize IT service among those silos system architecture of each organization.	Decentralized among the four network partners, but it is agreed in the plan that it will be centralized among the joint services.
	<i>Formalization</i>	There are only very general agreements made with the intention for the project	It was quite formalized: every city got their "homework" to do.

		to refine the business. There are quite a few contracts signed. There is much more formalized: financing of the project scope, phasing, coverage and involved parties.	
Nature of IOS			
	<i>Partners connected</i>	All organizations/members have their own (silo) IS architecture, which is integrated through ICIN.	Most information systems are not integrated yet. Some information systems, like the library information systems already shared a common database.
	<i>Importance of IOS</i>	The integration of IOS is very important and that is the goal of ICIN.	The IOS that has to be integrated in the future are on vital municipal functions, like healthcare and education, so of major importance. The current and planned dedicated IOS are less important.
	<i>Ownership</i>	The IOS is owned by members	Ownership is distributed among the cities. Now it is not an issue, but in the future there will be discussion about ownership of IOS.
Resources			
	<i>Originated from strategy / policy</i>	Yes, it was a top down approach from the start but now it is more money driven.	yes. Under pressure of government policy Paras, the majors of the metropolitan area decided to start working closer together on services in several areas. This top management strategy and strategic plans from functional area's were direct input to the IT planning team.
	<i>Prior experience and knowledge</i>	There was no experience and knowledge at the start but after 10 year of collaboration the capability is much higher. This capability is centered in the ICIN organization.	Yes. Most stakeholders had experience and knowledge of IOSISP. However this was the first time that a more institutionalized approach, instead of project approach, was chosen.

	<i>IT management</i>	IT management was not that much involved in the start. The participants were a level higher but gradually the projects are more interesting for IT management too.	IT directors and functional IT managers were highly involved, but only 1 more technical IT professional was directly involved in the planning committee
	<i>User managers</i>	User management was not that involved at the start but the projects are often leaded by project management.	Highly involved before the planning process (functional strategies were input) and during the planning process (workshops with functional departments were held).
	<i>Top managers</i>	Very involved at the start of the collaboration and still involved in the decision making in the board but later less involved in the projects.	Fairly involved. The IT planning group had to report two times to majors and metropolitan council.
	<i>Funds</i>	The collaboration mainly works with funding from all kind of sources but mainly the Ministry.	There were hardly any funds needed for the project.
	<i>Human resources</i>	Many people from many organizations are "used" to reach the ICIN goals. Still, the involvement of the 19 organizations could be higher.	The planning committee was part of their job, there was no extra time dedicated. "it is quite hard, for example I was in a big competition at the same time and I was in that project also in the beginning. "
	<i>Methods</i>	Prince 2 method was used to create project initiation documents	No explicit planning methods were used.
	<i>Consultants</i>	In the first period consultants were used to create project descriptions and a shared vision	No consultants were involved.

Table 3. Process dimensions

		Innovation Care in the Netherlands	IT Plan Municipalities Finland
<i>Process</i>			
Comprehensiveness		Medium	Medium
	<i>Analysis</i>	Initially, the analysis is a comprehensive, complete, coherent and comprehensive. This was later changed	Mostly high level analyses were made to inventarize the current systems and resources, formulating

		to detail.	goals and strategy on future status and identifying projects.
	<i>Report</i>	Project initiation documents were made and a vision document was created. All results of the project are pretty well documented.	Pretty comprehensive (30 pages). However, the information plan was on a high strategic level and did not contain details.
Formalization		High	High
	<i>Appointment of members</i>	It works in two ways, members could be appointed by the offer from ICIN depends on project's needs, but members could also joined by their own willingness.	The members were formally appointed by the metropolitan area council. The distribution of chairs was a formal political process.
	<i>Organizational status of members</i>	The members pay a member fee of 10.000 euro. There are no strict regulations of becoming a member.	The planning team was an official appointed committee.
	<i>Other arrangements</i>	The ICIN is organized as an operational unit to guide the interorganizational projects.	Several. A regional IT board was started and the city council could comment on the plans.
Focus		Creative	Control
	<i>New joint initiatives on IT</i>	Yes. "We are looking in the market what kind of ideas and we also go the members and ask for their needs and solutions".	No. "we just identify just the items we had to work on in the future. We didn't try to invent anything especially new on the strategies or the strategic goals or something"
	<i>Standardization</i>	Yes. "With ICIN, we develop an infrastructure so that different IS can communicate with each other and also to enhance the IT use".	Yes. "and to unify and made these systems which are in place already talk with each other, or maybe think about common systems in the future."
Flow		Top Down	Top down
	<i>Decisions</i>	The desicions are taken by the board member.	The planning team made a proposal which was approved by the city council and the majors.
Participation		Broad	Broad perspective
	<i>Representatives</i>	Representatives were selected from each organization involved in the network as one of board members.	Representatives were selected on a formal base. Two representatives per organization, mostly one IT director and one IT user manager.

	<i>Get together</i>	The meeting takes place differently depends on each project, and the board shall get together monthly.	Meetings and communication were highly distributed among different channels and places.
	<i>Coordination with own organization</i>	Coordination takes place on top management level in th monthly board meeting and on tactical level the organization members act often as project leaders.	Most network partners received strict guidelines from top management for the discussions. Partners involved their own organization, both user and top management quite a lot.
Consistency		High	High
	<i>How many times meet?</i>	The meeting takes place differently depends on each project, and the board shall get together monthly.	In one year time, the planning committee met about 15 times.
	<i>Continued meetings</i>	Yes	Yes, an official regional IT board is formed.