

Chapter 9

Interorganizational Shared Services: Creating Value across Organizational Boundaries

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Abstract

Purpose — Sharing services increasingly extends beyond intraorganizational concentration of service delivery. Organizations have started to promote cooperation across their boundaries to deal with strategic tensions in their value ecosystem, moving beyond traditional outsourcing. This chapter addresses two research questions geared to the challenge of interorganizational shared services (ISS): why would organizations want to get and remain involved in ISS? And: what are the implications of ISS for (inter)organizational value creation?

Design/methodology/approach — The conceptual chapter reviews literature pertaining to ISS from public, commercial, and nongovernmental sectors. ISS is understood as a multistakeholder organizational innovation. In order to analyze ISS and conduct empirical research, we developed a taxonomy and research framework.

Findings — The chapter shows how ISS can be positioned in value chains, distinguishing vertical, horizontal, and hybrid ISS. It outlines ISS implications for developing business models, structures, and relationships. Success factors and barriers are presented that epitomize the dynamic interplay of organizational autonomy and interorganizational dependence.

Research limitations/implications — The research framework offers conceptual ideas for theoretical and empirical work. Researchers involved in ISS studies may adopt strategic, strategic innovation, and organizational innovation perspectives.

Practical implications — ISS phases are distinguished to focus innovation management — initiation, enactment, and evaluation. Furthermore, insights are provided

into processes and interventions aimed at making ISS a success for participating organizations.

Originality/value — Cross-sectoral perspective on ISS; taxonomy of ISS; research framework built on organization and strategic management literature.

Keywords: Shared services; interorganizational shared services; interorganizational relationships; value creation; value chains; innovation

Introduction

Large organizations, both private and public, have invested in shared service initiatives to improve the internal use of scarce resources, increase quality, and offer new products and services (Janssen & Joha, 2008; Kamal, 2012). For instance, they have concentrated facility management, logistics, and R&D, financial, IT, and HR services in onshore, near shore, or offshore centers¹ (Howcroft & Richardson, 2012; Vlaar et al., 2008). Intraorganizational shared services imply bundling of services while delegating control to the organization's business units, i.e., not centralization (Meijerink & Bondarouk, 2013). Sharing services within an organization often proves to be a dynamic process in terms of organizational boundaries and governance. Organizations may stress their core competencies and consider services bundled in a shared service center as belonging to their core business. The shared service center, staying within organizational boundaries, may start serving other customers in addition to the parent organization.² It could outsource delivery of (parts of) its services, plugging in efforts from vendors while serving its internal customers and retaining an orchestrating role (Janssen & Joha, 2008). The center as a whole could be divested and become a business of its own (McIvor et al., 2011). Or the center's work package and labor force could be outsourced to another vendor, possibly terminating intraorganizational responsibility for the actual delivery of services in due time (Gospel & Sako, 2010). Sharing services within organizations tends to originate in intraorganizational efficiencies: business units are serviced by a common center that can achieve economies of scale. In addition, organizations improve their performance by investing in interorganizational shared services (ISS). Demand for complex services drives new sourcing strategies (Caldwell & Howard, 2010; van Fenema & Beeres, 2010). Service customers tend to focus on their core competencies to improve positioning in their end-markets. They rely on service suppliers to partially take over or support with services that appear peripheral to

¹Researchers refer to shared service centers (SSC), shared service organizations (SSO), e.g., Herbert and Seal (2012), or service-oriented enterprises (Janssen & Joha, 2008).

²See for instance engineering and maintenance services in aviation: http://www.klm.com/csr/en/floating/engineering_maintenance.html, or banks' payment processing organization serving other banks.

the customer's business model. As an example, consider the maintenance of complex technological systems that often require a large variety of skills seldom present at one service provider. Hence, various service providers should cooperate and align their activities to jointly guarantee an optimal performance of the system. Like with intraorganizational shared services, economies of scale also play a role — suppliers can provide more service to customers thereby increasing their scale. Yet these supply-based factors are merely supportive to factors related to service demand and customer performance. The key motivation of ISS lies in the fact that independent service partners together may create an added value level far beyond each individual's service.

Complementing research paying attention to topics associated with sharing services within organizational boundaries, this chapter focuses on the interorganizational dimension of shared services. Specifically, ISS involving mutual involvement of organizations is investigated, i.e., a relationship that goes beyond merely contracting out or subcontracting services. Mutual involvement implies more complex and often shifting roles for organizations participating in ISS as they create value in a shared manner (Porter & Kramer, 2011). It resembles Huxham's notion of organizational collaboration as "... a process through which organizations exchange information, change activities, share their resources and enhance capacity for mutual benefit and a common purpose by sharing risks, rewards and responsibilities" (1996). Examples include collective procurement, cocreating services between vendors and their customers, and interorganizational cooperation to deliver integrated services to common customers. Our approach excludes examples of neoclassical, hands-off contracting (outsourcing) between customers and vendors with traditional contractual organization of each organization's roles and responsibilities. In our perception, outsourcing, of for instance IT and BPO, has been around for a while and the topic has matured in terms of research. Hence, positioned in the literature on governance, this chapter does not examine market (neoclassical contracts) or intraorganizational hierarchy (internal shared service centers), but interorganizational relationships (Bradach, 1997; Jones et al., 1997). This is also referred to as "allying" in transaction cost economics as opposed to making or buying (Geyskens et al., 2006). Another example is constituted by PPP (Joha & Janssen, 2010). These relatively new relational forms of governance represent both bilateral interorganizational relationships as well as networks (Provan & Lemaire, 2012; Van de Ven, 2005). Before we proceed with the chapter's focus, we reflect on services as a concept.

Services have become the backbone of advanced socioeconomic systems (Grönroos, 2011). In addition to business-to-consumer services (personal finance, medical services, entertainment, trash collection, retail etc.), business-to-business services encompass professional services such as HR, logistics, maintenance, and R&D. Conceptually, a service is defined here as a transformational process that combines activities of value to service recipients. Service performance is intangible yet it often relies on the use of tangible products and infrastructures (Caldwell & Howard, 2010). Service encounters take place in "serviscapes," i.e., a front stage where service recipients and providers interact, also referred to as touch points or

the engagement cycle.³ This front stage is connected to back stages of these stakeholders (Grove et al., 2000), encompassing people, equipment, and processes for delivery (supply side) as well as customer processes (Turner & Rindova, 2012).

A common understanding is that organizations take on either a service delivery or service consumption role in vertical value chains (Shostack, 1984). This represents a traditional exchange-based service business model. Delivery implies designing and operationally organizing an activity system generating service elements (Oliveros et al., 2010), while consumption means that a service recipient experiences benefits from infusing its own routines with service elements (Ng et al., 2012). Service quality depends on the consumer's impression of encounters with service elements provided and experienced (Parasuraman et al., 1985). For instance, a company hires an accounting firm for specific services. ISS changes this perspective on business models and associated role demarcations in service exchanges (Kamal, 2012). The word "shared" in ISS refers to mutual involvement of distinct organization (Goes & Park, 1997). From a service perspective it could mean:

- Supply-side organizations delivering a service (e.g., integrated or comprehensive offering by diverse organizations; Kamal, 2012; Niehaves & Krause, 2010);
- Demand-side organizations cooperating when buying and consuming the same service (e.g., collective procurement; Balcik et al., 2010); and/or
- Organizations delivering and consuming services (e.g., shared responsibility for cocreating services and their value; Edvardsson et al., 2011; Sierra et al., 2009).

For many organizations, such forms of mutual involvement represent a new way of working. Moreover, they need to redefine their product/service outputs, business model, and how they add or receive value. Following Crossan and Apaydin's definition of innovation (2010),⁴ we consider ISS an example of process and output innovation which involves multiple organizations. When organizations consider innovations, a first concern for strategic managers is the extent to which an innovation will add value. Like any investment, a business case must be developed to explore specific performance areas that could be improved (Davenport, 1993). Moreover, managerial attention will be devoted to ongoing monitoring of ISS impact on the organization and its external relationships (Keil & Mann, 2000). Hence, *a first research question guiding our study is: why would organizations want to get and remain involved in ISS?*

A subsequent challenge for organizations is to understand how their members can modify their operational ways of working and an organization's overarching business model to improve performance. While innovation has been conceptualized

³See for instance <http://thehospitalityblog.ecornell.com/customer-engagement-touchpoints/>

⁴Innovation is: production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome (Crossan & Apaydin, 2010).

as an incremental process (Feldman & Pentland, 2003; Pentland & Feldman, 2008), many organizations deliberately invest in recombining routines and promoting (Lin et al., 2013). They explore managerial processes for translating learning into better performance (Walker et al., 2011).

If we define value as a variety of benefits organizations accumulate minus their costs (Jensen, 2010), then the key *second research question is: what are the implications of ISS for (inter)organizational value creation?* In other words, how can organizations⁵ draw on ISS concepts to increase value both individually and collectively, and which business model would apply and how could this be organized? Or, alternatively, what business model should we invoke to achieve additional joint benefits, and how to share these benefits proportionally among the various stakeholders? The conceptual relationship between ISS as an innovation and value increase is represented in Figure 1.

To give an example, suppliers of the same customer-base could combine their logistical flows or virtually combine their stocks. ISS thus improves service experienced by the customer (e.g., single point of contact instead of dealing with all suppliers separately, fewer shipments), while reducing costs for suppliers

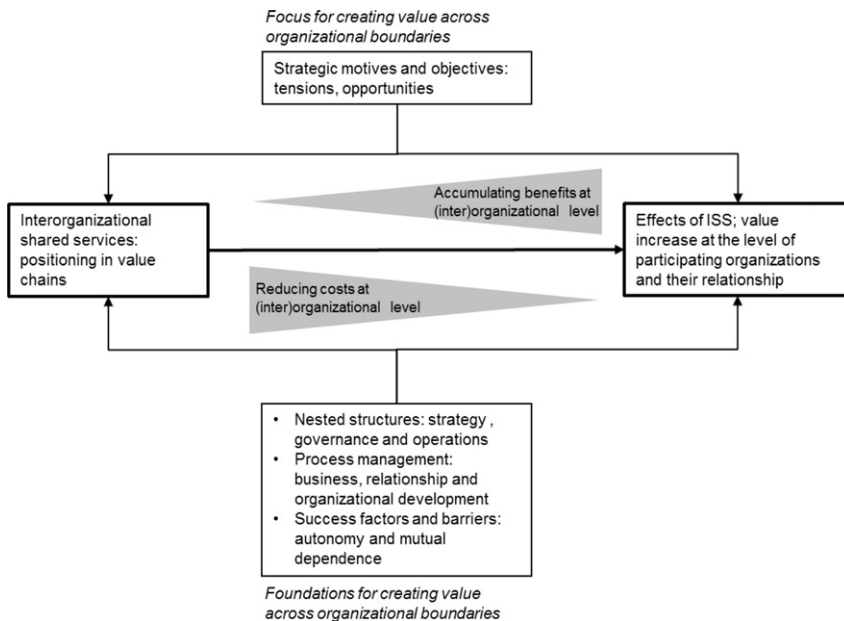


Figure 1: Focus ISS research.

⁵We refer to organizations as stakeholders in a service ecosystem, i.e., playing different roles (Weiller & Neely, 2013).

(limiting their shipments to the customer and the number of items they stock) (Cheng & Choi, 2010; Gomes & Dahab, 2010). Since ISS becomes popular in a variety of industries, this offers opportunities for synergetic insights. This chapter is built around a literature review and theory development to capture these insights; its scope is not limited to a particular industry.

Understanding the conceptual relationship between ISS and value requires insight in:

- strategic motives and objectives for initiating ISS
- a taxonomy of ISS examples framing their position in value chains
- structures organizations can choose to shape their relationship
- interventions enhancing value derived from ISS
- success factors and barriers experienced in prior ISS

The chapter is structured accordingly, and concludes with implications and opportunities for future research.

Value Creation across Organizational Boundaries: Strategic Motives and Objectives

Value in Ecosystems

Why would organizations invest in ISS? These strategic motives and objectives differ across categories of organizations (public, commercial, and NGO). In many cases, ISS is positioned at the intersection of categories of organizations. Recent work advocates a value ecosystem perspective, acknowledging mutual dependence between organizations (Porter & Kramer, 2011). We start off from this perspective and elaborate on specific tensions for different categories of organizations later on. Public organizations, firms, and other non-commercial organizations such as NGOs depend on support from stakeholders in their ecosystem to continue operations (Weiller & Neely, 2013). Value creation has become a systemic challenge, rather than a go it alone endeavor (Jensen, 2010; Maull et al., 2012). ISS may take the form of private, public, and/or hybrid cooperation depending on the particular ecosystem organizations operate in. Within this system, organizations provide stakeholders valuable experiences while covering their expenses by the price they ask for products or services (private ISS), or by others means of funding and resourcing (public and NGO). Current research emphasizes the usefulness of organizational outcomes to others when defining value (Magala, 2009). Stakeholders in a particular context define value by the way they use products and services (Chandler & Vargo, 2011; Moore, 1995). This value-in-use notion replaces approaches focusing on the exchange value of products and services or their inherent value. In public management, value centers on the public's perception of governmental outcomes

(Moore, 1995). In a commercial context value depends on what a customer can do with (features of) products and services (Grönroos, 2011; Ng et al., 2012). What is the role of ISS? We distinguish tensions per category of organizations and at the ecosystem level.

- *Category-specific strategic tensions.* From a strategic organizational-level perspective, creating value is offset against costs. Can the organization please stakeholders with its current operations? Increasingly, interorganizational cooperation such as ISS studied here is perceived as an opportunity to address strategic tensions specific to their category of organization. Public organizations may use ISS to better accomplish their societal role. That is, with ISS they can offer integrated services and reduce costs, e.g., combining emergency response services across municipalities. Firms can leverage the ISS concept to improve efficiency (e.g., sharing costs) or expanding markets (e.g., jointly setting up business in a new geographical area). NGOs may cooperate in their operational domain to extend service offerings and improve local embeddedness.
- *Ecosystem strategic tensions.* Currently, organizations experience tensions on a strategic level when attempting to please stakeholders and sustaining operations (e.g., availability of clean water or labor force). Value chains (e.g., bioenergy chains) navigate “between challenges and benefits of bioenergy production with simultaneous internal supply chain management and external stakeholder management needs” (Gold, 2011). Customers, for instance, demand innovative and sustainable products and services, yet global competition and substitutes erode price levels. Public organizations and other types of non-commercial organizations face shrinking budgets at multiple levels of government (Giegerich, 2012; Palm & Ramsell, 2007; Turle, 2010). Moreover, due to globalization and media, organizations have to take more stakeholders into account. Their operations are scrutinized as recent examples concerning electronics and clothing industry in South-East Asia have shown. NGOs may challenge business models and operations with negative socioeconomic local impact. Tensions are defined as contradictory requirements (Smith & Lewis, 2011). At the strategic level, this means challenges — others would say: entrepreneurial opportunities (Goldsmith et al., 2010) — to sustain support (e.g., customer-base erodes which requires investments) and operations (e.g., lack of affordable and capable personnel, limited resources, increasing risks, failure of complex assets, and rising costs). In construction for instance, “there is constant pressure for the civil engineering industry to keep improving its cost efficiency. In the meantime, the industry has to operate within an increasingly stringent policy and regulatory environment, more recently driven by the growing commitment to sustainable development” (Zhang et al., 2011). An example emphasizing tensions in the sense of population needs is the bottom-of-the-pyramid movement (Collier, 2007). For instance, cooperation between Procter & Gamble and social marketing NGO Population Services International (PSI). This project led to a product innovation geared toward the developed world — “PUR, a sachet of powder which, mixed into a 10-litre bucket of dirty water, would make it clean and safe to drink” (Dahan

et al., 2010). Considering NGO–multinational relationships in developing countries, researchers found opportunities: “By lowering costs, reaching new groups of customers, streamlining distribution and — more broadly — by filling institutional voids through new product or service offerings, these collaborative initiatives provide bundles of social and economic value that may be very difficult to disaggregate” (Dahan et al., 2010).

Next, we elaborate on the strategic role of ISS in creating stakeholder value on one hand, and sustaining operations and reducing stakeholder costs on the other hand.

Creating Stakeholder Value

First, organizations may collectively create additional value by increasing each other’s business and generating positive impact in the public domain. For instance, major disasters or humanitarian crises evoke (inter)national response from businesses, governments, and other types of organizations (Quarantelli, 2007). ISS, by enhancing coherence of these efforts, could contribute to positive changes in affected communities in the sense of improved socioeconomic development and security (de Coning & Friis, 2011). In developed parts of the world, ISS could activate businesses, communities, and local government to improve at a collective level the strength of their socioeconomic system while generating organization-level value such as enhanced public, business, and consumer value (Porter & Kramer, 2011). For instance, collective use of infrastructures (Hall et al., 2013), and collectively procuring new military assets may improve national industry and result in state-of-the art technology (Rasmussen, 2011; Uiterwijk et al., 2013). Similarly, cooperation between businesses, government organizations, and NGOs could result in sustainability benefits, such as new products made from recycled materials, reverse logistics, and energy independence (Gopalakrishnan et al., 2012). Moreover, organizations could share their competencies (e.g., R&D services, market segments) to improve mutual knowledge (Gebauer et al., 2011), and to develop, produce, and market products and services with innovative features and enhanced performance levels (Janssen et al., 2009; Van de Ven, 2005). These products and services may enable customers to do new things or to improve their experience. While strategic flexibility (or agility) has traditionally been defined at the organizational level, recent work points at the importance of interorganizational innovations to create new products and services and to manufacture in a flexible manner (Oke, 2012). Upstream in value chains, ISS may fuel new ideas to suppliers to improve their products and services (Ng et al., 2012).

ISS could thus improve strategic performance in the sense of adaptability at the value chain level (Wycisk et al., 2008). Conceptually, organizations combine their resources not just internally but across organizational boundaries (Galunic & Rodan, 1998; Sirmon et al., 2007). “Strategic resources and knowledge come not only from within the organization’s boundaries, but also from outside”

(Lai et al., 2012, p. 445). This extended Resource-Based View (RBV) assumes that some organizational capabilities can be combined in a complementary manner (Caldwell & Howard, 2010; Dahan et al., 2010). For participating organizations (public or private), such combination or interorganizational specialization allows for sustainment of capabilities they consider essential to (stakeholders of) their core business, while relying on other organizations for non-core activities (Brusoni, 2013; Faleg & Giovannini, 2012). For instance, in national defense programs: “(i)ntead of pursuing costly national programmes, allies can seek more cost-effective solutions by pooling and sharing (P&S) resources” (Faleg & Giovannini, 2012).

Sustaining Operations and Reducing Stakeholder Costs

Second, ISS could support sustainment of operations and reduction of stakeholders' costs. It can improve operational efficiency, risk levels, and continuity (Janssen et al., 2009; Tsang, 2002). Costs (monetary expenditure, time, environmental impact/eco-footprint, and transaction costs) are incurred for categories such as personnel management, acquisition, operation and maintenance of assets, facility management, stock keeping, logistics, and procurement. Similarly, stakeholders benefiting from products and services may incur costs, e.g., transaction costs (Estep, 2012). For organizations and their stakeholders, costs diminish the value of their performances, both to the organization and their stakeholders. As Porter and Kramer claim “companies have overlooked opportunities to meet fundamental societal needs and misunderstood how societal harms and weaknesses affect value chains” (2011). For example, stakeholders increasingly value environmental impact and socioeconomic conditions of operations (Hall et al., 2013). From a financial point of view, organizations co-innovate with other organizations to reduce or eliminate costs. Public organizations increasingly have to follow this path since their budgets get reduced while similar or even enhanced performance is expected. Cost innovations concern reducing prices paid for resources and services (e.g., through collective procurement), standardizing spare parts to economize on stocks (Bloch, 2013), economizing on transaction costs incurred for operations (e.g., e-business), or re-allocating work across organizations (Gebauer et al., 2011). Moreover, organizations can improve on total costs of ownership by considering acquisition, maintenance, and use of assets on the longer term (use of e-maintenance technologies, self-healing technologies, and asset analytics; Hampapur et al., 2011). Organizations can cooperate across their value chain to optimize their operations in terms of timing, product availability, and reduction of risks (Graham et al., 2013; Yao et al., 2007). ISS may reduce smoothen supply chains (van der Vlist, 2004) and reduce bullwhip effects: “When an information system that allows collaborative sharing of information about the whole supply chain is introduced, the new information allows the actors to reach savings by, e.g., reaching reductions in inventory. Other benefits in reducing bullwhip effect may include decrease in production over time, increased customer satisfaction, and reduced lead times” (Björk et al., 2012). Organizations can improve performance by sharing

back-office services and service delivery (Arya, 2011; Niehaves & Krause, 2010), or bundle incoming or outgoing logistical flows to reduce environmental impact and monetary costs. And finally, organizations may share assets, pool stocks and co-organize maintenance services to improve economies of scale, uptime, safety, and capacity use (Karsten & Basten, 2014; Van Horenbeek et al., 2013). Interorganizational cooperation could enable proactive and life-cycle based approaches to maintenance which reduce overall costs over time (van der Lei et al., 2012).

In short, these two aspects of interorganizational value creation exemplify possible operationalization of network (i.e., interorganizational) effectiveness. Researchers consider network effectiveness in relation to organizational effectiveness, noting the risk of unequal distribution of value: “what may be a positive outcome for the network as a whole (e.g., improving innovation, economic activity, or community well-being) may prove detrimental to one or more individual network members, as when innovations are implemented by some firms but not others, making the innovators more competitive relative to others in the network” (Provan et al., 2007). Ideally speaking, ISS could increase value for all stakeholders involved: “enlarging the pie” of a particular business market, or improving the performance of public networks (Joha & Janssen, 2010). Public organizations may share back-office services to reduce costs and empower their service delivery. Next, we provide a taxonomy of ISS positioned in value chains; this offers a more precise understanding of how ISS could increase value.

ISS and Value Chains: A Taxonomy

The increasing variety of ISS examples calls for an analytical framework to understand more specifically why organizations start off ISS initiatives, and how they use ISS to increase value for themselves and collectively. We use the notion of value chains for this purpose. Value chains refer to processes of transforming inputs into outputs (Stabell & Fjeldstad, 1998); they demarcate value-generating activities within and across organizational boundaries (Ehret & Wirtz, 2010; van Fenema & Beeres, 2010). Along the value chain, organizations add value with their business model and operations consisting of primary and support activities. Figure 2 depicts two value chains each consisting of three organizations, moving from top (upstream) to bottom (downstream). We distinguish three categories of ISS. First, examples that concern vertical relationships within a single value chain (as mentioned in the introduction, we are interested in mutual involvement, not neoclassical outsourcing). Second, ISS between organizations operating in their own value chains (with or without vertical impact). And finally, hybrid ISS that encompasses both horizontal and vertical cooperation. Next, we elaborate on specific examples of ISS across the three categories and point at challenges that we elaborate on in later sections.

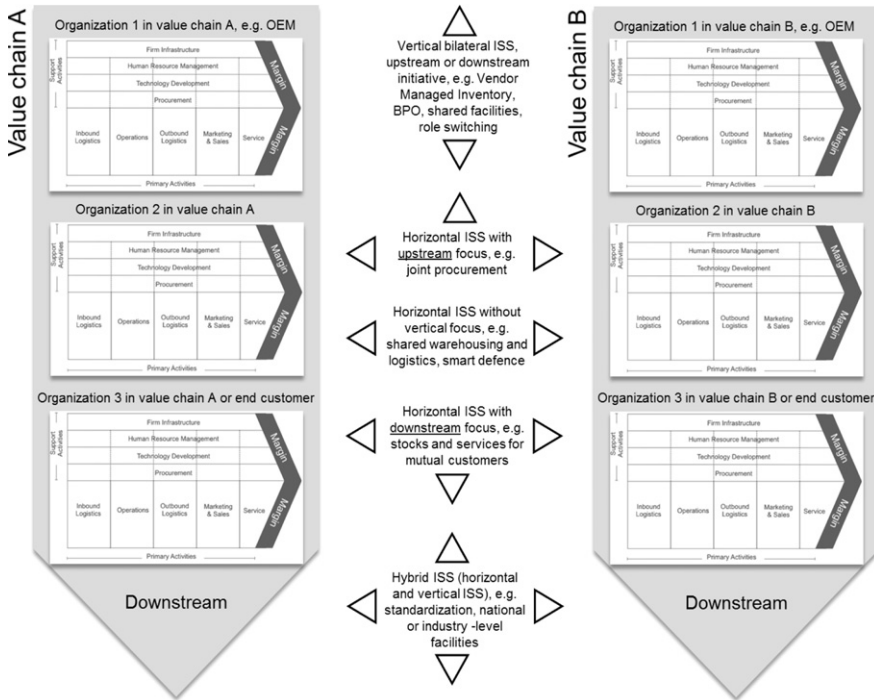


Figure 2: A taxonomy of ISS and value chains.

Vertical ISS

Vertical ISS reorganizes services and their associated business processes and resources in supplier–customer relationships.⁶ Demarcation and arrangement of supplier–customer responsibilities shift (Sierra et al., 2009), resulting in renewed attention for specialization across the value chain (Johnston & Lawrence, 1991). This specialization and awareness of value chain partner’s potential contributions lead to new dependencies and coordination patterns, for instance programs for engaging customers or citizens in service design and delivery (Messinger, 2013). Literature on business-to-business marketing argues that suppliers should orient their operations toward their customers’ value-creating activities (Grönroos, 2011), more recently referred to as cocreation (Maull et al., 2012). New technologies such as virtual reality and social media enable close contact with customers, and

⁶We remain focused on mutual involvement of vertically linked organizations; this excludes shared service centers that are completely outsourced (Janssen & Joha, 2008). It could involve partial ownership, also referred to as partial vertical integration (Pishchulov et al., 2012).

increasingly customized and bundled offerings (Edvardsson et al., 2005). From a logistics perspective, suppliers gain intimate knowledge of customer operations and they use knowledge of local markets. This allows suppliers (e.g., service providers) to tailor and contextualize their services. Activities can be dynamically divided between suppliers and customers to make the best use of capabilities and resources (Gebauer et al., 2011; Rollins et al., 2011). They may take over some of their customers' business processes (Vendor Managed Inventory (VMI); Collaborative Planning, Forecasting, and Replenishment (CPFR); Vendor Stocking; Bloch, 2013), or some echelons (levels) of maintenance (Sherbrooke, 2004; Tsang, 2002). Suppliers and customer can *ex ante* synchronize their ordering–delivery cycles to optimize supplier operations (van der Vlist, 2004; van Fenema & Koeiman, 2003). Suppliers may transform their product offering into services (Performance-Based Contracting), thus concentrating on the (potential) functionality a product provides instead of on the product itself. Supplier services thus become part of customer operations. Conversely, customer resources and services could empower a supplier's operations. For instance, when maintaining major assets, a supplier depends on access to and use of customer facilities and services. ISS may involve dyadic relationships, or cover an entire value chain (Jayaram et al., 2010). Examples of the latter include standardization, supply chain redesign, and sustainability initiatives (Porter & Kramer, 2011). Public–Private Partnerships (PPP) could be considered a heterogeneous example of vertical ISS. Private companies may design, build, finance, maintain, and/or operate infrastructures and facilities for public customers (Brinkerhoff & Brinkerhoff, 2011). “The idea is that the private sector can provide the services in a more cost-efficient way, including financing” (Joha & Janssen, 2010).

Why would vertical ISS add value? Value chains become more predictable, reliable, and proactive (Van Horenbeek et al., 2013); this may enhance value chain adaptability, and capacity use while reducing costs and risks (Shirodkar & Kempf, 2006). Advantages work both sides. For instance, in the dredging business, “(i)n case this data (from the customer — authors) is shared with IHC (supplier — authors), it is able to give advice on pending failures and the need for parts. It also helps IHC to keep track of the regions the ships move to in order to adapt their part stocking decisions in the depots in these regions” (Dekker et al., 2013). In addition to such exploitation enhancement strategies (Raisch et al., 2009), from an exploration point of view, vertical ISS could foster product and service innovations and accelerate time to market (Busquets, 2010; Oke, 2012). From a customer perspective, suppliers can take care of operations that typically are non-core to the customer's operations. This concentrates managerial attention toward activities supporting the customer organization's business model (Penrose, 1959). Customers, retaining an orchestrating role for ISS activities, receive functions (“solutions”) rather than products. They can focus on what suppliers' products could do for them in terms of their own value-creating processes (Grönroos, 2011). To this end, suppliers are granted room for innovations as long as functions are guaranteed. Suppliers extend their offering and develop closer relationships. For VMI this win–win has been described as follows: “The customer benefits from higher

product availability and lower inventory costs. The supplier benefits from lower overall costs (especially through reduction of the ‘bullwhip’ effect), marketplace differentiation, and increased customer retention and sales due to the value-added services it provides” (Tatikonda et al., 2005). A supplier can execute activities at lower costs, especially when these represent its core business (e.g., Rolls-Royce engines). Vertical ISS thus could foster innovation and increase the “size of the pie” of (segments of) the value chain (Priem & Swink, 2007). Yet for vertical ISS to work, drivers of innovation, distribution of value, and costs for customers and suppliers are a concern. These call for *ex ante* concepts and boundary conditions that sufficiently align interests (Ng et al., 2012; Tatham, 2013; Yadav et al., 2003). Suppliers may experience cost increase when customers deviate from these *ex ante* agreements, or their operations call for substantial investments in new expertise. Customers, on the other hand, may incur costs for enabling suppliers to do their job and controlling them. They may get nervous from depending on supplier commitment and delivery quality. Suppliers may be tempted to put their least valuable resources on the contract to optimize their margin. Moreover, customers may experience inflexibility and lock-in when suppliers take over operations, accumulate expertise, and become more difficult to replace.

Horizontal ISS

With horizontal ISS organizations that are part of distinct value chains cooperate. This distinction could refer to merely different organizations being part of similar value chains (coopetition; Richardson, 1998; Rod & Spinler, 2011), to geographical areas (e.g., public organizations from different jurisdictions, water companies from different countries, or public transportation companies operating similar assets in adjacent regions; Karsten & Basten, 2014), or to value chain work content (local firefighting organizations and police sharing facilities). Conversely, reasons for horizontal cooperation could stem from similarity of value chain content across geographical areas or proximity advantages (Richardson, 1998). We distinguish horizontal ISS without up- or downstream impact, versus ISS where this impact is at the core of what organizations seek to achieve collectively.

- *Horizontal ISS without vertical focus* concerns mutual involvement in primary or support activities. It encompasses common ownership, utilization, and maintenance of resources. For instance US Army Materiel Command and US Marine Corps Logistics Command seek cooperation in terms of stocking, depot maintenance, and in-theater services: “Our collective goal in supporting the joint warfighter calls for us to establish more interoperable capabilities” (US Army, 2013). International military and other organizations have collectively operated Kandahar airport in Afghanistan (Soeters & Tresch, 2010). European countries share a pool of military strategic transportation assets. Organizations exchange (expensive) spares and share information to enjoy better economies of capacity use (e.g., shared warehousing, shared databases). Some may merge and collocate

parts of their back offices or primary business processes to economize on costs. For instance, national government's Ministries increasingly share services; locally, emergency management or healthcare organizations operating in adjacent regions do the same (Arya, 2011; Niehaves & Krause, 2010; Palm & Ramsell, 2007). Another example would be international cooperation of the military for training purposes or in crisis areas, or cooperation between the military and NGOs (Rietjens et al., 2013). And finally, organizations can initiate interorganizational programs for mutual learning (e.g., users of the same assets) and link their complementary R&D units (Feller et al., 2013). An example would be NATO Centers of Excellence serving NATO members. Over time, with sustained cooperation programs, organizations may setup shared facilities (Niehaves & Krause, 2010) or specialize, thereby increasing mutual dependence (Faleg & Giovannini, 2012).

- *Horizontal ISS with upstream focus* aims at combining demand of organizations for similar products and services. Such shared (also referred to as joint) procurement projects strengthen their position vis-à-vis suppliers. This may lead to lower prices, lower transaction costs, more innovative products, and better services quality. In short, this form of ISS translates into better service to internal customers. Suppliers could be pushed to improve their performance. Examples include national or local government, NGOs (Balcik et al., 2010), and businesses combining their procurement. Internationally, smart defense programs at NATO and EU⁷ combine or even mutually adjust their demand for military assets: “Mart Laar, defense minister of Estonia, ... contends that the future for European defense lies with shared procurement and pooling resources. Recently, Estonia and Finland ... bought 12 Thales-Raytheon radar systems, which meant that Estonia effectively got two radars for the price of one” (Fidler & MacDonald, 2011). The value of horizontal ISS with upstream focus depends on similarity of required products, services, and functions across organizations (Uiterwijk et al., 2013); their willingness to invest in horizontal coordination; opportunities to lower internal costs; limited internal capacity to handle procurement processes (Janssen et al., 2009; Murray & Rentell, 2008); and limited conflicting interests within horizontal relationship (e.g., not serving the same customers downstream). Public organizations, including hospitals and emergency services, often participate in networks and tend to meet these criteria. Contrary to retailers experiencing commercial tension for instance (Comez et al., 2012), they do not compete for instance in their respective “markets.” Costs for cooperation tend to increase the more assets and services appear complex and require customization (Uiterwijk et al., 2013). And second, vertically, organizations depend on opportunities to obtain better deals (for instance “more bang for the buck” (Fidler & MacDonald, 2011), more advanced products (Uiterwijk et al., 2013), or shorter lead times (Ghaderi & Dullaert, 2012) when negotiating with suppliers.

⁷See for instance <http://www.eda.europa.eu/>

- *Horizontal ISS with downstream focus* concerns cooperation between public and/or private organizations to better serve their customers and lower costs. For instance, NGOs and multinationals cooperate in developing markets: “Doctors Without Borders” extensive on-the-ground networks in developing countries make it a reliable, efficient and trustworthy partner for pharmaceutical companies for distributing medications in such environments. New products targeted for developing markets are often distributed as a bundle with an array of complementary services — such as technical assistance, service, and financing — that are critical to the success of the venture. Providing this product/service bundle on the ground can be a shared responsibility between the firms and NGOs (Dahan et al., 2010). In emergency and crisis response, organizations combine their services to effectively address threats (van Opdorp, 2005).⁸ In the public domain, local government improves their service offering (Janssen et al., 2009). In the private domain, companies share stocks physically or virtually, exchange expertise, and they coordinate their services for mutual customers. Examples of these services include maintenance, warehousing, and logistics. Horizontally, organizations can draw on competencies that complement or reinforce each other. Moreover, they can improve capacity use and reduce costs, for instance when sharing transportation from plants to warehouses or retailers. Since this type of ISS concerns customers, commercial tensions may rise in case of private sector ISS delivering similar products or services. Organization A, partnering for horizontal ISS, may provide services to organization B’s customers (for instance delivering spare parts from organization A’s site). Organization A’s initial customers may benchmark performances from organization B and reconsider choices thereby hurting organization A’s market. The value of horizontal ISS with downstream impact comes from increasing customer value experience (e.g., offering complete solutions,⁹ product/service extension, customization, ensuring flexible delivery from a horizontal network of suppliers, offering multisite access to services; Estep, 2012), improving market access, while better allocating and economizing business processes horizontally.

Horizontal ISS may lead to more value when it reduces strategic tensions, while evoking limited levels of new tensions. “Smart Defence can ... help nations meet two challenges they face today: how to get more security for the limited resources they devote to defence, and how to invest enough to prepare for the future” (Rasmussen, 2011). More generally speaking, horizontal ISS can provide new benefits (interorganizational learning, new services, and power) and reduce costs (transactions, prices).

⁸NATO uses the concept “connected forces” (Schaub & Breitenbauch, 2012), and earlier Network Centric Operations or Warfare (Wilson, 2007).

⁹See for instance <http://www.cambridgeservicealliance.org/news/106/61/Successfully-Making-the-Shift-to-Services—Service-Week-2013-Write-Up.html> FirefoxHTML%5CShell%5COpen%5CCommand

Hybrid ISS (Mixture of Horizontal and Vertical ISS)

Finally, we refer to hybrid ISS when categorization as either vertical or horizontal cannot be made. Often, this involves a heterogeneous network of organizations, such as universities, public organizations, and businesses (Zhang et al., 2011). Organizations cooperate in a relational setting where they take on different roles, as in “team” interdependence (Grandori, 1997; Van de Ven et al., 1976). Having identified overlapping interests, they engage in a complex network of stakeholders. Different types of hybrid ISS seem to emerge.

First, organizations could have interests associated with a particular *geographical domain or transportation infrastructure*, such as a site (retail center or industrial zone), a city (neighborhood), a region, or a transportation infrastructure (rail, water, and road). Increasingly, the role of clusters is recognized, i.e., “... geographic concentrations of firms, related businesses, suppliers, service providers, and logistical infrastructure in a particular field — such as IT in Silicon Valley, cut flowers in Kenya, and diamond cutting in Surat, India” (Porter & Kramer, 2011). Stakeholders coinvest in improving value for themselves and collectively, enhancing socioeconomic activities within and beyond the geographical domain. Infrastructures such as roads and bridges (Zhang et al., 2011), sea, and airports continue to be developed. Through sometimes PPP (Joha & Janssen, 2010), organizations invest in their technical-economic potential and environmental performance to better serve public, private, and societal stakeholders (De Martino et al., 2013; Hall et al., 2013; Pestana et al., 2012). The Silicon valley technical-economic success has led to new concepts such as “maintenance valley,” cluster policy, and campuses that are experimented across the globe (Hospers et al., 2009). Other examples include redevelopment of office spaces, e-commerce hubs, development of regional economic clusters (Lincoln Business School, 2012), or multistakeholder involvement for innovative tourism: “a supportive environment is conducive to growth and expansion of niche tourism” (Carlisle et al., 2013). Local government (and NGOs in developing countries) tend to play a facilitating role as they encourage socioeconomic development and sustainability within the geographical domain and promote external networking.

Second, some *vital global-local value chains* (food, forest, water, energy, and transportation) and *critical societal processes* (healthcare, education) warrant hybrid ISS. Scarcity and tensions tend to increase due to economic growth and scarce resources. Globalization of food chains requires hybrid ISS due to demand–supply mismatches (e.g., excess fishing; Berghöfer et al., 2008). New agricultural development and new initiatives for sustainability engage multiple stakeholders (Devaux et al., 2011). Public institutions (at both a national and international level) and multinationals usually take the lead to improve network value creation (Gopalakrishnan et al., 2012). Similarly, combating piracy and securing or innovating energy supply chains encourage stakeholder cooperation, often with different perspectives and interests (Gold, 2011). In the area of health care and education, stakeholders develop new network-level concepts and technologies to improve standardization and quality (Matlay, 2011); sharing technologies and implementing innovations

such as telecare may offer service delivery advantages while reducing costs (Barlow et al., 2006; Estep, 2012).

Third, hybrid ISS are formed to serve collective interests in *security*, *humanitarian crisis response*, and *emergency management*. Over the past decades, international civilian–military operations have rallied military from multiple countries, international agencies, NGOs, and businesses (de Coning and Friis, 2011). They have addressed short-term needs due to natural disasters, and worked with local stakeholders to improve socioeconomic development in fragile states (Voorhoeve, 2010). To counter new risks in the cyber domain national governments have initiated task forces and centers that merge public, military, and private expertise (van Fenema & Soeters, 2012). Moreover, organizations share information to counter fraud, e.g., banks, insurance companies, and police. They cooperate to secure borders, such as the European Frontex organization.¹⁰ A final example is community policing; police organizations cooperate with stakeholders such as businesses and social organizations to improve security and socioeconomic stability (Morabito, 2010).

Fourth, hybrid ISS concerns *service logistics*, *supply chains*, and *asset-centric networks* due to pressure to improve economic and environmental performance (Gopalakrishnan et al., 2012). Companies are developing and implementing collaborative concepts that horizontally and vertically span value chains (Mason et al., 2007), such as 4C (Cross Chain Control Centers, or Cross Chain Coordination Centers). These concepts seek to coordinate stocks, optimize business processes and services, and they bundle logistics across multiple organizations (Graham et al., 2013) across even competing organizations (Franklin & Spinler, 2011). Suppliers with the same downstream customer may ship to a shared Consumer Goods Consolidation Center (CGCC) and contract the same logistics service provider. High value assets in aviation, space, offshore, and the military bring together universities, businesses, and governments. They collectively develop (Berends et al., 2011), use (Faleg & Giovannini, 2012), and maintain assets based on innovative expertise and IT (e.g., prognostics) (Candell et al., 2009). Horizontal relationships (between asset users) interrelate with vertical upstream relationships (Bloch, 2013). Moreover, third parties may get involved with complementary services: “As there is a trend (e.g., in the aviation industry) toward outsourcing the MRO (Maintenance, Repair, and Overhaul) operations, pooling will move more into a vendor or third-party model where a neutral independent company or pooling provider (at the first echelon) will offer component pooling options to companies (at the second echelon)” (Wong et al., 2007). Another ISS example would be the new production and service logistics network for the Joint Strike Fighter which involves governmental organizations at national and regional levels, in addition to educational institutes and international or national companies. Asset-related roles may switch or be extended. For instance organizations using and maintaining assets may share their expertise with other users. Multiple asset users may share their information

¹⁰See <http://frontex.europa.eu/>

horizontally and vertically (upstream). Stakeholders thus better utilize expertise and capacity; they increase flexibility at the network level, while potentially lowering costs and risks.

To conclude, these forms of hybrid ISS may overlap and coincide, for instance a regional UK government organization writes on supporting agricultural supply chains: "... there are not only potential cost savings, but also environmental benefits from using shared facilities for produce going to the same retailers, or using shared transport to deliver linked products such as food and flowers" (LBS, 2012). Hence, they combine the first, second, and fourth type. Hybrid ISS refers to innovation networks and collaborative commerce and communities (Bøllingtoft et al., 2012); these broaden the scope of organizations involved, and they provide room for new value adding roles (Boudreau & Lakhani, 2009; Busquets, 2010). Stakeholders increasingly recognize the importance of their ecosystems from both a sustainability and technology innovation point of view (Porter & Kramer, 2011; Van de Ven, 2005; Weiller & Neely, 2013). For instance, "innovation by semiconductor makers must overcome technological and commercial hurdles to provide lower cost chips with more features ... Chipmakers are 'critically dependent' on the industry's ecosystem to create value in their offerings" (Wharton, 2013). Across value chains, they strive for standardization and value enhancement, e.g., sustainability certification and branding (McDermot, 2011). Value creation in hybrid ISS appears less straightforward compared to vertical or horizontal ISS. Networks tend to be very heterogeneous and objectives vague and at times grand. Stakeholders may agree on common objectives. Yet operationalizing these often takes considerable time and effort, and meets with resistance. Innovation tends to be incremental and long term. Overcoming these constraints depends on the felt urgency to act as a network, or the feasibility of creating new benefits.

Foundations for Creating Value across Organizational Boundaries

In conjunction with ISS focus and value chain positioning, organizations shape the foundations of their cooperation. They interrelate various aspects of their own processes, suggesting a multilevel (Markand & Truffer, 2008) or nested perspective (Perlow et al., 2004). We elaborate such a perspective on foundations in three ways: nested structures, process management, and success factors and barriers.

Nested Structures: Strategy, Governance, and Operations

Structures refer to patterns of organizational practices (Perlow et al., 2004), they reflect the interplay of human understanding and action. Structures are represented or shaped using overarching concepts (e.g., the very idea of "shared services"; Herbert & Seal, 2012), and description or prescription of structural elements (Pentland & Feldman, 2008). These structural elements result from choices on applicable dimensions, e.g., a centralized or decentralized style of decision making

(DeSanctis & Poole, 1994). A concept can be understood by its philosophy (also referred to as “spirit”; DeSanctis & Poole, 1994) and structural elements. An example of the latter: “The three components of smart defence are prioritization (aligning national capability priorities more closely with NATO’s capability goals), cooperation (pooling of military capability among Allies to generate economies of scale and improve interoperability), and specialization” (Giegerich, 2012). Concepts emerge from and influence practice. Their role can be evaluated, i.e., the extent to which they play a role in enhancing value creation (Figure 1).

As a source of structure, concepts play a key role in ISS. Organizations involved in ISS draw on generic concepts that get interpreted, adjusted, and applied in a particular context (Woywood, 2002). Examples of a few concepts applicable to ISS include Vendor Managed Inventory (Tatikonda et al., 2005), supply chain synchronization (van der Vlist, 2004), new logistics service providers concepts (Mason et al., 2007), or the Comprehensive Approach (Moelker, 2014). Such concepts concern multiple stakeholders; they move beyond organizational-level innovation. By considering ISS, organizations choose from and combine concepts available in international discourses (Wong et al., 2007). These concepts concern strategy, governance, and operations.

First, in a *strategic* sense, organizations reconsider their business model when getting involved with ISS. A business model, commonly defined at the organizational level, articulates by which value propositions an organization will serve which stakeholders, and which operations are associated with value propositions and stakeholders (Weiller & Neely, 2013). Business models change (Cinquini et al., 2013), e.g., an organization shifting from a luxury airline model toward a low cost model, or from good dominant logic toward service dominant logic (Ng et al., 2012); this obviously requires internal adjustment (Bacharach et al., 1996). ISS asks organizations to think about the extent to which their current business models match or maybe compete (Weiller & Neely, 2013). As earlier elaborated upon, ISS offers organizations new strategic motives and objectives to deal with tensions and opportunities (see also Figure 1). Depending on the positioning of ISS in value chains (Figure 2), organizations may need to adjust their business models, and negotiate which organization is making which adjustments (Dahan et al., 2010). In fact, ISS demand business models at the value chain level, i.e., how the value chain and its constituents will relate and create value (Weiller & Neely, 2013). Organizations have developed strategic logistics concepts (“solutions”) containing features that reinforce business models of multiple organizations (Gebauer et al., 2011). As they collectively develop business scenarios, they need to balance collective “win–wins” and their own interests and prospects. That is, on the one hand business models ought to be “flexible enough to accommodate shared service arrangements,” while on the other hand “every established individual business is unique and operates based on its autonomously defined aim and objectives” (Kamal, 2012). Business models from one particular organization, even those aimed at ISS, cannot prevail in interorganizational relationships. More applied, strategic structures refer to high-level choices with respect to specialization and service design across organizations (Brusoni, 2013). This involves topics such as which organization becomes responsible for

which service modules (Janssen & Joha, 2008) or level of maintenance (Wong et al., 2007; Van Horenbeek et al., 2013).

Second, *governance* structures embed ISS in organizational and institutional structures. They express strategic focus and structures in contracts, and enable cooperation and control. Xu and Beamon (2006), using the term coordination mechanism, distinguish resource sharing structure, level of control, risk and reward sharing, and decision style (Xu & Beamon, 2006). This chapter's focus on ISS excludes neoclassical outsourcing. Forms of ISS mentioned in the earlier introduced taxonomy are of relational type. They often rely on contracts or high-level agreements such as a Memorandum of Understanding (Uiterwijk et al., 2013). These define how ISS fits in legal regulations (in particular when public organizations are involved; Brinkerhoff & Brinkerhoff, 2011). Moreover, contracts explicate commitments in the sense of funding (Giegerich, 2012), mutual obligations and rights (e.g., intellectual property, disclosure policies) (Turle, 2010), and performance measurement (Keebler & Plank, 2009). This is especially the case when ISS concerns operational, "exploitative" processes such as participating in the European Air Transport Command. Another example would be maintenance and inventory policies when sharing spare parts stocks (Larsen et al., 2012). "The financial details for being able to use and replace co-owned spares should be well defined in advance as part of the shared ownership pool. Vendor stocking arrangements place the vendor under contractual obligation to have certain machines or parts available on very short notice. In return, the potential user of these parts or machines accepts the contractual obligation to purchase vendor-stocked assets at a predefined premium cost" (Bloch, 2013). Contracts may contain service level agreements and Key Performance Indicators (Howcroft & Richardson, 2012), risk sharing agreements (Inderfurth & Clemens, 2012), and stipulations for calculating and sharing revenues and costs (Karsten & Basten, 2014). Valuing mutual performances tend to prove a daunting challenge; for instance what is the value of VMI for a supplier and how does this value benefit the customer? Moreover, cost sharing is challenging, requiring insight in organizational-level costs and investments in the ISS (Wong et al., 2007). Frequently, especially with large numbers of ISS participants or an innovative ("explorative") orientation, contracts remain fairly incomplete (Hart, 1991). They resemble agreements befitting a relational form of governance (Jones et al., 1997). Governance structures also regulate who participates, how organizations make decisions (Berghöfer et al., 2008), what policies they apply, and how mutual relationships and power are kept in balance. Taken from research on service dominant logic (SDL), researchers state: "However in SDL, no one economic actor owns the value network. Therefore, this issue includes considerations of: what power sources will be the most effective in value networks; what is the responsibility of the customer; and what or who dictates who enters and leaves the value network?" (Maull et al., 2012). Moreover, strategic control of ISS operations introduces a governance challenge. For instance, hybrid ISS in crisis response has led to network-level concepts for command and control (Bigley & Roberts, 2001; Boersma et al., 2012). ISS governance may be a shared responsibility, or assigned to a lead organization (e.g., territorial responsibility in humanitarian operations) or a

dedicated organization such as the US Federal Emergency Management Agency (Provan & Kenis, 2008). Research on regional healthcare ISS suggests: “The move from decentralization to centralization (or vice versa) is often an attempt for the system to become more effective and efficient. There is a tendency to centralize if and when it is recognized that there are not enough economies of scale or the size of the Health District presents critical mass issues to enable efficiencies to be achieved. Similarly decentralization occurs when the span of responsibility appears to be too large to manage the business of delivering healthcare” (Arya, 2011).

Third, to generate value, ISS connects existing *operations* of participating organizations and may introduce new ones. Operational structures thus encompass organizational design initiatives to define roles, procedures, and infrastructures (Janssen et al., 2009). These structures operationalize strategic and governance concepts; structural elements of strategic concepts can be compared with patterns of “on the ground” activities (Moelker, 2014). Structures at the operational level involve planning methods and workflow (re)design to optimize business processes and associated roles. Moreover, IT is a ubiquitous conceptual (e.g., business process modeling) and technical infrastructure (Graham et al., 2013). While organizations have invested in enterprise architectures to enhance consistency of IT investments (Ross et al., 2006), recent work extends this thinking to interorganizational cooperation (Janssen et al., 2010). Organizations may have to standardize their operations, product data, and technical infrastructures in order to share information (Candell et al., 2009; Lia et al., 2006).¹¹ They connect their ERP systems or introduce new technologies such as RFID (LBS, 2012). Other examples of technologies include Service Oriented Architectures (SOA) to support “business process synchronization” of virtual organizations (Danesh et al., 2013). In crisis response, “new information technology (IT) infrastructures or systems have been introduced ... in order to facilitate shared situational awareness” (Boersma et al., 2012); these infrastructures enact so-called Netcentric Working concepts of interorganizational cooperation. In some cases, ISS organizations introduce new physical facilities to support their connected operations, e.g., collocated control rooms with crisis response. They may have to take local transportation, warehousing, and legal infrastructures into account (Gebauer et al., 2011), especially in case ISS is located in developing countries (Dahan et al., 2010) or concerns offshore/off-road or mobile servicescapes.

Process Management: Business, Relationship, and Organizational Development

This chapter deals with ISS that involve mutual involvement and relational governance. This form of shared services differs from intraorganizational shared services and also from neoclassical outsourcing contracts where suppliers take over IT or

¹¹For instance, NATO and its partner nations have invested in standardization of technologies and operational processes.

business processes from the customer. The interorganizational and relational character of ISS influences, as can be expected, process management. In our understanding of process management it involves management of stakeholders involved in ISS, and program-based management of the sequential phases of an ISS lifespan. Process management in ISS concerns three dimensions: business, relationship, and organizational development (Table 1).

Business development. Organizations participating in ISS work according to a particular business model. They have positioned themselves in their industry’s value chains. ISS challenges organizations to reflect on how they deliver, create, and explore value (IMP, 2013). Specifically, such business development calls for awareness of current business models and operational concepts participants use, as well as generic conceptual trends (e.g., VMI, control towers, supply chain ERP, or smart defense). Operational concepts may apply to their primary or supportive value-creating activities such as their business, IT, and logistics (Porter, 1998). Organizations can choose from various concepts for these value-creating activities. Once chosen, these concepts are to be aligned across primary and supportive activities (Tallon, 2012).

With ISS, participants develop business cases for new operational concepts (Janssen et al., 2009). They translate generic concepts (for instance the very idea of shared services) into ones that are useful to them. “The translation process

Table 1: A process management approach to ISS.

	Stakeholder management		
	Managing phases		
	Initiation ►	Setup and operations ►	Adjustment, closure
<i>Business development</i>	<ul style="list-style-type: none"> ISS business case development 	<ul style="list-style-type: none"> Organizational business model Interorganizational business model 	<ul style="list-style-type: none"> Business model adjustment, or return to autonomous business model
<i>Relationship development</i>	<ul style="list-style-type: none"> Emerging core network: contacts at higher management levels 	<ul style="list-style-type: none"> Broadening intraorganizational involvement Inter-team contacts 	<ul style="list-style-type: none"> Continuity or closure
<i>Organizational development</i>	<ul style="list-style-type: none"> Exploring interorganizational opportunities 	<ul style="list-style-type: none"> Intraorganizational adjustments Interorganizational projects, mutual learning 	<ul style="list-style-type: none"> Reconsidering organizational adjustments, possibly closing interorganizational ISS cooperation

considered people and policy aspects and transformed the general management idea of shared services into a specific configuration reflecting the organization's individual conditions" (Ulbrich, 2010). Such a concept-centric process affects their business model and relationships with ISS partners. In an example of vertical ISS, a European manufacturing company redefined its logistics concept parameters (e.g., roles and responsibilities) in cooperation with Asian partner organizations (Gebauer et al., 2011). In a hybrid example, organizations selected promising academic and technological innovations to pursue (Bakker et al., 2011). Organizations, taking generic concepts into account, thus develop new concepts for their own business and relationships with value chain partners. Together, they dynamically craft their business models (Demil & Lecocq, 2010). These models have been defined as "a conceptual framework that expresses the underlying economic logic and system that proves how a business can deliver value to customers at an appropriate cost and make money" (Van Horenbeek et al., 2012). While ISS offers new opportunities, autonomous functioning of organizations and value delivery remains paramount (Dahan et al., 2010). Hence, organizations are expected to develop interorganizational concepts as negotiated structures that relate to their own business models in a coherent and synergetic manner. With ISS relating to participating organizations' business models, and business models are likely to differ between organizations,¹² organizations face a strategic alignment challenge.

Building new concepts serves strategic value improvements, and yields concept-elements that change operations (Gebauer et al., 2011). In fact, organizational operations become strategically embedded in a dual manner: participating organizations' own business model and their ISS cooperation. While promising new strategic opportunities, this duality — which echoes the individual–collective dimension in our guiding research questions — adds to the complexity of operations management.

Relationship development. To individuals at participating organizations, ISS represents a challenge to simultaneously innovate and develop new interpersonal relationships. Focusing on relationship development, individuals may have already worked together before. Yet the ISS network is likely to introduce new themes and to engage people who have not worked together before (Uiterwijk et al., 2013). New personal network structures emerge in conjunction with the business-content of work. Researchers increasingly point at the role of trust in interorganizational relationships. Trust implies that individuals allow for mutual vulnerability, risk, and positive expectations (Edelenbos & Klijn, 2007). Studies also show that vulnerability of relationships makes interorganizational innovation challenging (Berends et al., 2011). Relationships interplay with interorganizational power. They may not last due to factors such as a lack of personal chemistry or limited perceived mutual interests. Moreover, within partner organizations people may move on to new roles or leave their organization. Relationship development evolves as a dynamic process.

¹²Depending on their position in the value chain and the ISS configuration adopted.

It also benefits from deliberate interventions such as group meetings, especially when individuals work at different sites (Kumar et al., 2009). Over time, individuals can develop a shared language, set of concepts, and style of communication.

Organizational development. ISS innovations depend on professionals with different backgrounds, e.g., legal, business, IT, finance, and procurement. Within participating organizations, multidisciplinary teams are to be formed to handle external contacts and interface with those responsible for internal business processes. Internal understanding of ISS and commitment are to be encouraged. Changes to business processes are likely across internal value chains, for instance the way organizations order products and services, how they produce, and how they deliver products and services (see organizational-level value chains in Figure 2). ISS impacts internal business processes that may have operated in a fragmented manner. Between organizations, ISS requires development and use of coordination mechanisms such as liaisons, teams, meetings, and procedures (Gittel & Weiss, 2004). These mechanisms keep partners informed and support dynamic management of stakeholders (Uiterwijk et al., 2013). For both intra- and interorganizational cooperation, awareness of external dimensions is likely to increase. Such an extended awareness is pivotal for managing stakeholders expectations (Ancona & Bresman, 2007), and for developing and translating concepts between communities (Carlile, 2004; Levina & Vaast, 2005).

To sum up, process management integrates these three dimensions, encompassing (1) the management of stakeholders involved in ISS and (2) phases of the ISS life-span. (1) The number of stakeholders, their involvement, and influence may vary over time (de Vries, 2012). Stakeholder interests have to be dynamically monitored and managed to deliver them value (El-Gohary et al., 2006; Johansson, 2008). Moreover, as a cooperative effort, their roles, direct partners, in and contributions to ISS need attention (Janssen et al., 2007). This value stems from generating innovations that match their demands (Hall et al., 2013). In addition, for broader ISS legitimacy, it may be useful to keep external stakeholders updated (Messinger, 2013). (2) Managing phases is a process that interacts with stakeholder management and organizational contexts (Barlow et al., 2006). Several parameters of phase-based management are to be defined, such as how fast the project progresses, who gets involved in the project, how the project is structured, and how radical the innovations are that stakeholders strive for. It is a formal and informal process. On the formal side, ISS requires project plans with implementation plans, milestones, contracts, and financial agreements (Faleg & Giovannini, 2012; Zhang et al., 2011). Moreover, formal methods can be used for simulating, developing, and experimenting with ISS scenarios (Janssen et al., 2009; Voinov & Bousquet, 2010). Informally, representatives of participating organizations cooperate on a personal basis, in conjunction with their intraorganizational responsibilities and networks. Between organizations, representatives are to develop mutual understanding as well as shared insights in the potential and application of ISS concepts (Barlow et al., 2006).

Success Factors and Barriers: Autonomy versus Mutual Dependence

Finally, researchers have reported numerous success factors and barriers when studying various forms of ISS. These echo challenges of balancing processes within organizations participating in ISS (autonomy) and between them (mutual dependence). Organizations are drawn to ISS to achieve strategic objectives and reduce strategic tensions (Oliver, 1990; Smith & Lewis, 2011). An example is smart defense. While this concept addresses austerity and capability challenges at the level of NATO, this innovation itself introduces new challenges and possibly tensions (Faleg & Giovannini, 2012). First, organizational logics (their way of thinking and working) and interests may diverge (Dahan et al., 2010). Even without mutual adaptation ISS could be possible. Yet the dynamics of cooperation may move ISS in a direction that offers limited value to one of the participants. For instance, multinationals' "partnerships with NGOs may sometimes open a path to escalating (and potentially unrealistic) demands for firms to upgrade their commitment to social development" (Dahan et al., 2010).

Second, ISS partners face dynamics of who to include, and how to deal with organizations that join or those leaving (Busquets, 2010). Moreover, within ISS, questions can be raised — in particular in ISS with large numbers of participants — such as how to engage participants (Zhang et al., 2011) and how to manage inter-organizational dynamics (Berghöfer et al., 2008). While increasingly "innovation is a collective process which increasingly depends on the formation of collaborations and alliances" (De Martino et al., 2013), selecting and building actual ISS relationships are delicate processes. Some ISS remain limited to bilateral horizontal or vertical cooperation. Others involve industry-wide participants, such as multistakeholder coalitions (MSC) in agri-food, defined as "a long-term partnership involving multiple participants from two or more categories of stakeholders (government, business, societal organizations, and knowledge institutions) with the objective of jointly defining and reaching sustainability objectives" (Peterson, 2013). Moreover, ISS may be subject to external influence and have societal impact (Gold, 2011). Organizations may join such hybrid ISS purely based on their activities. In other cases, ISS organizations could be selective in allowing others to join or stay. In order for ISS to increase value for participants, expectations and joint interests are to be strategically managed over time: which innovation projects get initiated, invested in, and terminated? (Bakker et al., 2011; Berends et al., 2011). This could turn out to be a complex, sensitive, and at times political process (Hall et al., 2013; Lorell, 1980; Uiterwijk et al., 2013).

Third, organizations open up their "black box" to ISS cooperation processes ("white boxing"¹³). Providing access to information and knowledge underpins generative processes of innovation (Rollins et al., 2011; Tsoukas, 2009). Information visibility and transparency increase (Wang & Wei, 2007), supply chains are optimized (Björk et al., 2012), and new knowledge networks and solutions are

¹³A term coined by Tim Grant, Netherlands Defence Academy.

developed (Gebauer et al., 2011; Majchrzak et al., 2007). Yet this open and relational approach could be naïvely oriented toward collective ISS advantages. Opening up organizations also raises new questions such as: how much is enough, which boundaries should be defined, who invests in information and knowledge infrastructures? And: how valuable are our resources to another organization and vice versa? These questions correlate with the extent to which organizations have worked together before and how tacit (specifiable) certain knowledge is. The more knowledge is tacit and evolving, the harder interorganizational control becomes (Loebbecke et al., 2000). Organizations may feel this tension in particular when their businesses overlap, for instance in horizontal ISS (Doz, 1996; Hamel et al., 1989). ISS participants may hold divergent value perceptions and set different priorities (Arya, 2011). They may experience intraorganizational constraints when ISS impacts how professionals work. For instance, a partner organization may take over service delivery and use facilities in exchange for other types of resources.

Fourth, from a strategic perspective, interdependence between ISS organizations increases (Pfeffer & Salancik, 1978); this may exacerbate negative emotions and change the role of trust. With respect to smart defense for instance, “if nations specialize in some areas but withdraw from others, the accompanying increase in mutual dependency will give rise to fears of abandonment and entrapment” (Giegerich, 2012). ISS organizations may encounter new challenges when dealing with their own stakeholders. For instance, nations participating in smart defense have to interface with their national political arena. ISS thus involves a network of participants’ stakeholders, demanding attention for ISS-external control and communication. Conversely, depending on the ISS environment and level of uncertainty, ISS organizations need to consider how decision making and governance at the ISS level is organized in relation to external stakeholders (van Bortel, 2009). To what extent do they formalize contractual obligations and governance procedures (Arya, 2011), and/or do they rely on trust (De Martino et al., 2013; Edelenbos & Klijn, 2007)? Compared with neoclassical outsourcing relationships based on exchange and market mechanisms, ISS’ dependence on shared ownership and relational governance may prove more difficult to control (Maull et al., 2012). Actors face competing challenges in negotiating between institutional demands of their parent organization and the joint project (Agterberg et al., 2010). There is no clear division of labor or shared means of addressing these boundaries, requiring actors to negotiate what it is that they are doing within and across practices (EGOS, 2013).

Finally, ISS alters revenues, benefits, costs allocation, and financial performance (Bhaskaran & Krishnan, 2009; Janssen et al., 2009; Wong et al., 2007). For instance, bundling transportation or sharing spares on one hand reduces direct costs, yet it may also incur new costs for coordination and extending capacity. ISS partners may have limited insight in their performance (Keebler & Plank, 2009). Moreover, they may set boundaries to the extent to which they share their own performance information, especially when commercial interests are at stake (Forslund, 2012) and incentives work in different directions (Yadav et al., 2003). Yet especially with horizontal and vertical ISS, organizations develop contracts and tools for calculating changes to revenues and costs (Inderfurth & Clemens, 2012;

Karsten & Basten, 2014). This may lead to changes to ISS business processes (e.g., when to order) and rules for distributing benefits and investments. Original business case calculations and financial policies may need adjustment once the dynamics of ISS come into play. “It is likely that not all strategic intents can be accomplished and that certain strategic intents can only be accomplished at the expense of others. Therefore, it is recommended to compare the strategic intents with the accomplished benefits” (Joha & Janssen, 2010). This is likely to remain an informal process of negotiations.

Discussion and Conclusion

Answering the Research Questions

Two research questions have guided this chapter: a strategic question (why organizations would want to get and remain involved in ISS), and a strategic organization question (what are the implications of ISS for (inter)organizational value creation). We can now address these questions. Referring to the first research question, organizations face new tensions and opportunities in their dynamically evolving ecosystem. ISS offers the potential of achieving a new equilibrium among diverse interdependence stakeholders. These can realize additional joint benefits that are not available when they pursue their own business model. To improve their core performance, ISS offers opportunities to co-improve with other organizations inputs (sourcing) and outputs (co-serving customers). Moreover, they consider related domains, such as product companies getting involved in services and multinationals looking at developing countries as markets.

Exploring the second research question showed the complexity of (1) achieving collective and individual benefits for organizations (interorganizational innovation), and (2) how to reach a fair share (interorganizational value distribution). This chapter partially addressed the second research question which appears to consist of two separate topics. Structural, process, and factors-based perspectives were proposed to explore these topics. ISS calls for structural innovations in a strategic, governance, and operational sense. From a process perspective, organizations are to develop new business concepts, interpersonal relationships, and (inter)organizational mechanisms. A common thread characterizing critical success/fail factors is how organizations deal with autonomy and mutual dependence. A strategic question is when an ISS-driven increase of mutual dependence is warranted, and when interests based on autonomy prevail.

Theory Development and Future ISS Research

From a theory development point of view, our findings can be summarized in an ISS research framework (Figure 3). The framework considers organizational and

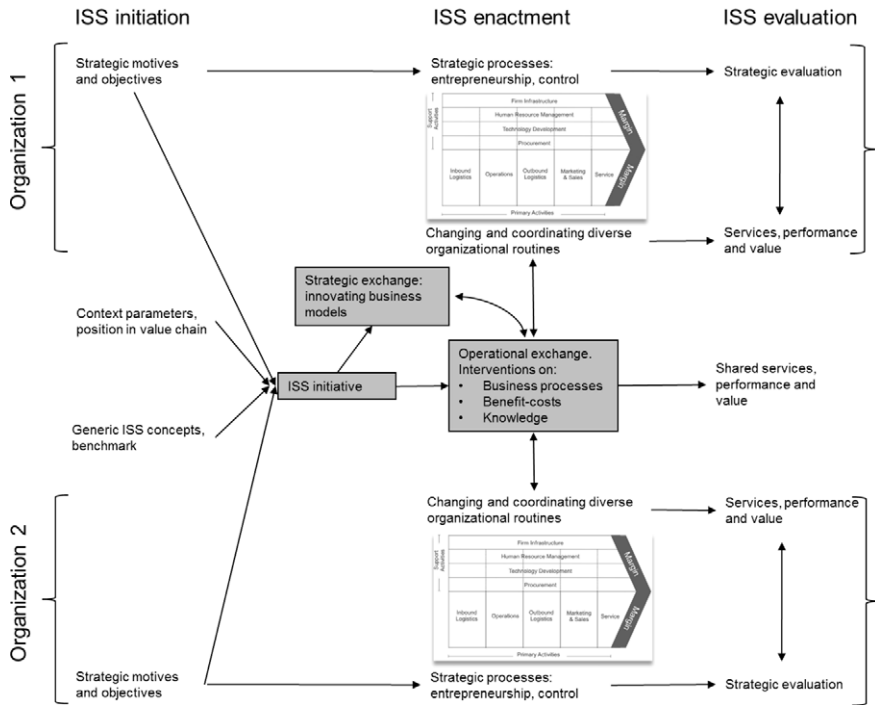


Figure 3: ISS research framework.

interorganizational value creation across three phases of ISS (initiation, enactment, and evaluation).

Research on ISS has only a recent history. It complements scholarly work on intraorganizational shared services and interorganizational outsourcing. Thus far, most attention has been devoted to the ISS initiation phase, i.e., strategic and objectives, context, and generic properties of ISS concepts (Figure 3). Studies on initial experiences have led to insights in interorganizational value creation, governance modes, relationships, and challenges of interpersonal cooperation across organizational boundaries. ISS is increasingly understood as an example of multi-dimensional innovation, combining innovation content (business model and business process concepts), process (actors, relationships), and context (Crossan & Apaydin, 2010). Moreover, it extends organizational-level innovation such as implementing LEAN concepts or technologies such as ERP systems. New research streams on interorganizational/network innovation challenges researchers to build understandings of innovation as a dynamic multistakeholder process. Actors representing different organizations make sense of their interests and opportunities for cooperation (Berends et al., 2011; Carlisle et al., 2013; Hall et al., 2013). We presume future research will move on to ISS enactment and evaluation phases. Moreover, we encourage researchers to draw on and contribute to three streams

of research: interorganizational value creation, strategic innovation, and routines, services, and performance. Each of these streams expands on particular dimensions of the two guiding questions.

First, literature on *interorganizational value creation* is concerned with value dimensions of interorganizational relationships (Grönroos, 2011). While value creation has been understood as a fairly static process of developing an organizational business model, recent work emphasizes the dynamic and innovative nature of business models. Since value takes on an ephemeral quality (Magala, 2009), business models become less useful as reified concepts. They are reframed as evolving, intersubjective constructions for substantiating paths of innovation in search for new value (Chesbrough et al., 2013; Demil & Lecocq, 2010; Merli, 2013). ISS research will elaborate on interorganizational conjunctions of these paths of innovation, building on the context and background (e.g., public vs. private) of stakeholders and their organizations (Dahan et al., 2010; Gold, 2011; Yaziji & Doh, 2009). Tensions and opportunities characterizing ISS in practice call for research that strives for dialectic processes to create new realities within and between organizations (Tsoukas, 2009). Examples of reframing interorganizational exchanges must be expanded, e.g., shift from transactive to relational exchanges (Guttek et al., 1999), from supply chains to demand chains (Jüttner et al., 2006), from product to service logics (Ng et al., 2012), and from purchasing to supply chain management (Priem & Swink, 2007). Such strategic reframing implies new ways of thinking about content and its relationship to strategic processes (De Wit & Meyer, 2010). In addition to value creation, the distribution of value warrants attention (see the two topics emanating from the second research question). Research on value creation (Lepak et al., 2007), interorganizational interests and appropriation (Dekker, 2004), and multiagent and (strategic) game theory could offer starting points for understanding how organizations achieve a fair share (Chatain, 2014; Myerson, 1991).

Second, literature on *strategic innovation* offers a backdrop for rethinking (inter)organizational management of resources and capabilities. The RBV is a strategic management theory that theorizes on the absorption and combination of unique resources. Recently, this thinking on organizational capabilities has been extended to interorganizational relationships (Lai et al., 2012, p. 445). This earlier mentioned Extended Resource-Based View (ERBV) enables new insights on the use of unique organizational resources across organizations, i.e., network-level value creation and innovation (Busquets, 2010). Similarly, Priem and Swink (2007) note that “R-A (resource advantage) theory may also be more useful to SCM if it is applied to value creation by the entire value system rather than to value capture by a specific firm. Considering the complete value system brings to the fore opportunities for value cocreation by suppliers and buyers up and down the value system, which thereby highlights the potential of cooperative efforts like user innovation.” An entrepreneurial approach following this line of thought stretches beyond organizational innovation. It calls as its counterpart for research on interorganizational governance and control (Dekker & Van den Abbeele, 2010; Marcum et al., 2012; Uiterwijk et al., 2013). Which structures have organizations in place to govern ISS? How do they communicate among each other? To what extent do they share

information and knowledge? Questions like these probe for mechanisms that can structure the process of realizing ISS benefits even if organizational interests overlap only to a limited extent (Gnyawali & Park, 2011; Wang & Wei, 2007).

A third and final research stream concerns *routines, services, and performance*. Increasingly, researchers open the “black box” of how organizations structure, bundle, and leverage resources for value creation (Sirmon et al., 2007). This approach represents micro-RBV theorizing which complements extended RBV we just discussed. Other theories also provide insight in the internal operations of organizations, for instance literature on routines (Pentland & Feldman, 2005) and knowledge cycles (Nonaka, 1994). Like RBV, these literatures could be extended to interorganizational cooperation. That is, routines have become increasingly infused with external elements due to sourcing and internationalization of value chains (Turner & Rindova, 2012). And concentration on organizational core competencies results in knowledge cycles crossing organizational boundaries (Gupta & Polonsky, 2013; Rollins et al., 2011). Micro-level theorizing and interorganizational cooperation will provide fruitful opportunities for further ISS research. Given the importance of knowledge for ISS, we briefly elaborate on knowledge cycles as an example (Figure 4).

Knowledge cycles have been understood as processes for exchanging, internalizing, and using expertise (Carlile & Reberntsch, 2003). Nonaka (1994) emphasizes the explicit (articulated) and tacit (implicit) nature of knowledge, abstracting from the particular content and context of knowledge. At individual, group and organizational levels, organizations engage in processes of socialization, externalization, combination, and internalization. Organizations engaging in ISS projects connect their knowledge cycles with those of the ISS partner. For instance, a supplier learns from a customer’s operations to provide better or new services (Gebauer et al., 2011). For ISS researchers specific domains warrant attention. They may explore interorganizational knowledge cycles in the area of strategic framing (business model adjustment), service and performance (re)definition, organization of business processes, benefits, and costs (e.g., fair share), and Information Systems (connecting organizational systems, role of third-party systems). We envision research based on both contingency theorizing (which factors influence the role of the four knowledge cycles processes between organizations), as well as process-based research (how do these processes change over time) (Mohr, 1982). For instance, in some cases organizations may prefer to cooperate in an informal manner when competitive tensions are low and complexity is high. In other cases, elaborate contractual stipulations are required to safeguard organizations’ interests.

Conclusion: Interventions for ISS Success

In this concluding section we reflect on interventions aimed at implementing ISS and making it successful. On one hand, ISS represents a concept for innovating interorganizational cooperation (Kumar & Van Hillegersberg, 2008). On the other hand, seemingly ready-made concepts for innovation need to be unpacked, both

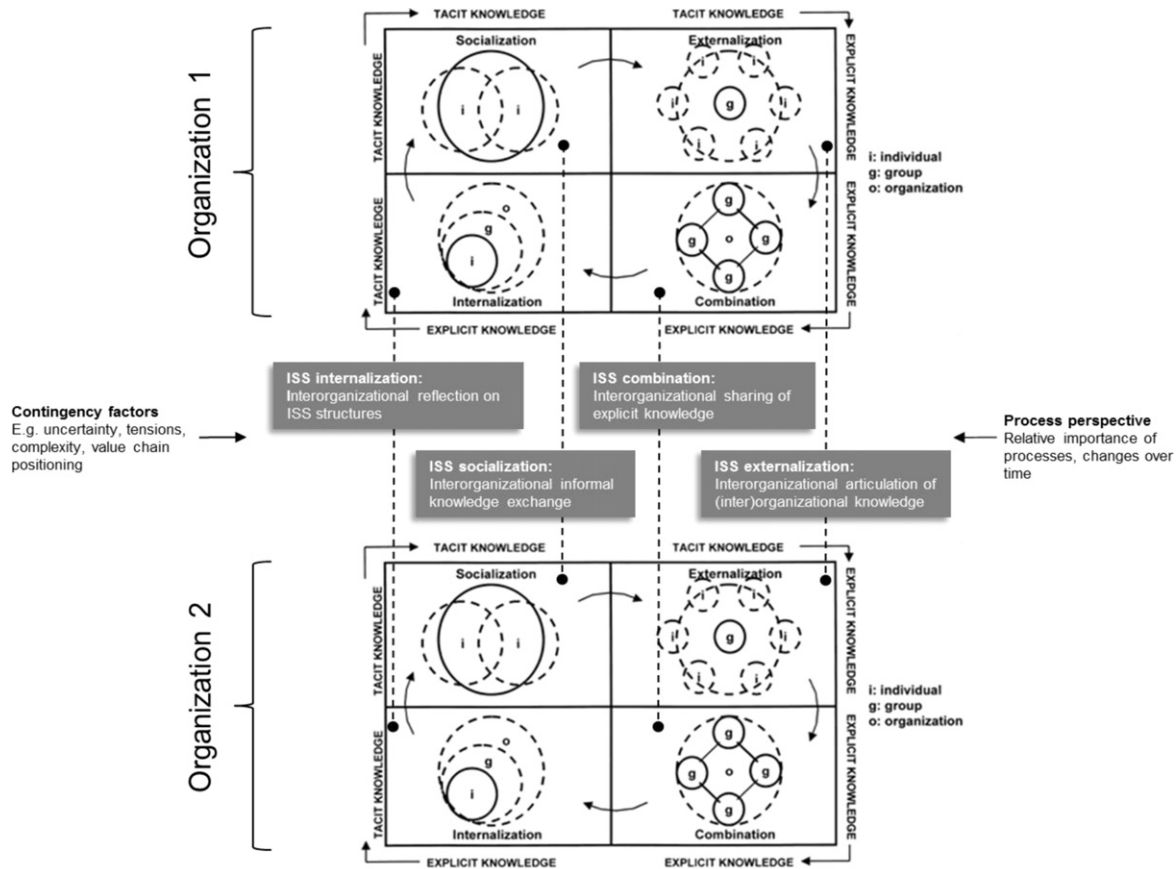


Figure 4: ISS: interorganizational routines and services. *Source:* Adapted from Nonaka (1994) and Armbrecht et al. (2001).

during their development and organizational implementation stages. Their success depends on interventions that engage professionals working in organizations. Organizational change is effectuated when these professionals rethink the way they organize and do business. Interventions concern both organizational and inter-organizational processes. Their specific content and measure of success depends on organizations and their position in value chains: “The specific type of network-level outcome considered is not, however, defined by us but depends on the particular constituency assessing the functioning of the network ... This implies that we do not consider a certain outcome *a priori* as the correct one because each presents a potentially valid point of view” (Provan et al., 2007). At a generic level, interventions can be studied and tried out. As a primary philosophy, we suggest a social, exploratory approach to ISS implementation advocated by (action research) academics and consultants (James et al., 2011; Pentland & Feldman, 2008). Interventions build on subjective and bounded understandings of actors in a social context as well as actors’ interactions. These social processes are focused on ISS and managed to ensure commitment and commonality of understandings, both within and between organizations. In addition, rational intervention methods have a place. Design science research proposes a method for understanding field problems and mechanisms that link interventions with outcomes (Denyer et al., 2008). Interventions are designed by means of a creative process with the potential of achieving desirable outcomes (Jelinek et al., 2008). The impact of intervention can be evaluated, leading to possible adjustment to the ISS implementation process. While interventions tend to be interpreted as operational challenges, we stress a complementary strategic dimension (see also Figure 4). Due to the often delicate nature of ISS, the role of strategic interventions and strategic aspects of operational interventions need managerial attention throughout the ISS process.

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¹⁴For more information see http://www.dinalog.nl/en/projects/r_d_projects/maselma/

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