Developing technology-based self-service (TBSS) abilities in a conservative B2B network: Dealing with institutional logics

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Abstract

Although markets are flooded with digital services to help consumers, B2B marketers have to a lesser degree developed technology-based services that support their customers. B2B firms that engage in new technology-based self-service (TBSS) do not only have to develop and exploit resources within their firm; they must also secure resources through relationships with partner firms such as IT vendors, software developers, and so forth. In doing this, they will confront both their own and other industrial networks' different institutional logics. This study utilizes IMP and service-dominant logic (SDL) thinking as a mean to assess the challenges firms face when they aim to redefine their offering to include TBSS. Through an explorative and grounded case study research design focusing a sustainable TBSS, we develop an emerging conceptual framework that presentations the abilities required for developing and managing TBSSs. Besides developing this framework that comes with managerial implications, the paper access the usefulness of bridging IMP and SDL thinking by acknowledging the institutional logics that are at play in different networks.

Keywords

Technology-based self-service, Business networks, IMP research, Service-dominant logic, Institutional logic

INTRODUCTION

We witness a growth in innovative and interactive technology-based self-services (TBSS) that support people in their everyday lives (Bolton & Saxena-Iyer, 2009). TBSSs have the benefit of dissolving the IHIP (intangibility, heterogeneity, inseparability, and perishability) logic of services given that the customer can select when and how to make use of the TBSS, independent of the service supplier. Thus, firms that design and implement TBSS opens up for customer value-creation based upon the customer's premises. However, technology-enabled services differ from traditional service (Schumann, Wünderlich, & Wangenheim, 2012). It requires a variety of abilities spanning from understanding the potential of information technology (IT) (Melville, 2010) as well as how to manage the switch from focusing products to services (Gebauer, Fleisch, & Friedli, 2005; Neu & Brown, 2005).

The effects of TBSS can be expected to result in several benefits for the firm and its customers. However, services and TBSS in B2B contexts offer a current research gap (Ostrom, Parasuraman, Bowen, Patrício, & Voss, 2015). A firm that develop a TBSS introduces both risks and challenges as; customers who suspect that the relationship performance will get reduced due to decreased personal interaction (Bhappu & Schultze, 2006), mismatches in the firm's service strategy (Gebauer, Edvardsson, Gustafsson, & Witell, 2010), or imbalance in the provider-beneficiary service strategies (Möller, Rajala, & Westerlund, 2008). Overall, it is important for firms that aim to include service offerings to "build up an ability to deliver services, training personnel to become service oriented, and to a certain extent, developing a new organizational culture" (Gebauer et al., 2010, p. 198). Thus, firms that strive to include sustainability in their offerings will need to master different abilities spanning technology, CSR and service design, and delivery.

The aim of this explorative and grounded study is to develop a generic and conceptual framework that presents the abilities business-to-business (B2B) firms needs to deliver a TBSS. We consider abilities as specific organizational and strategic processes by which managers utilize a firm's available resource base, i.e. a definition in line with the dynamic capability definition by Eisenhardt and Martin (2000). The intention has not been to find idiosyncratic abilities that have given a firm a sustained competitive advantage (Barney, 1991) but rather to investigate distinct and emergent ability structures that B2B firms need when moving from a 'product' to a 'service' logic that includes TBSS. To do this, we rely on two current theoretical lexicons that have different origins but with a common interest in value creation in networks, the empirical IMP tradition and the conceptual service-dominant (S-D) logic. These are two emerging theories that both advocate a systemic view on business markets. We build on prior research that has highlighted the similarities and differences between IMP and S-D logic research (Ford, 2011; Ford & Mouzas, 2013a) but add the later development of S-D logic that put forth institutions as guiding, but also limiting, actions in business networks (Vargo & Lusch, 2016).

Guided by some core concepts from IMP and S-D logic research, we carry out an explorative single in-depth case study (a firm in the forefront of the real estate industry) holding multiple within cases (its customers, suppliers, and other partners). The study is guided by two research questions: The first, managerial, research question is *what distinct abilities do a B2B firm need to develop and offer TBSS?* By investigating this we offer an understanding of how firms needs to cope with both its own (intra-organizational) current abilities as well as its adjacent networks (intra-organizational) abilities. The second, theoretical, question is *what institutional challenges to firms face when introducing an innovation (as a TBSS) in its current B2B network.* The later question offers a scrutinizing on the commonalities and difference of IMP and S-D logic literature.

The study results show that firms that strive to include TBSS into their offerings will need to adjust their abilities at different levels – spanning from understanding and utilizing technology to how to craft and deliver value propositions to customers. The firm also needs to decide how to prioritize and structure internal and external abilities when developing and offering the sustainable TBSS. Getting there might seem like a straight-forward task but it will require firms to adjust their resource base and update their abilities. As described by Bitner (2001, p. 379); "those who successfully compete through technology-delivered service in the long term will provide the level of excellence service customers demand. It's that simple – and difficult!"

The resulting conceptual TBSS framework, incorporating IMP and S-D logic thinking, on the abilities firms will also hold theoretical implications. While IMP early acknowledged that institutions are at play (Håkansson, 1982) it has mainly focused on the path dependency (e.g., Håkansson & Waluszewski, 2002) which can be explained by the heterogeneity of resources and how they are adapted in the interaction with counterparts in the firm's business network (Ford & Mouzas, 2013a). We propose based on the results, that the evolutionary path of a firm must also incorporate the institutional logic that are at play in the firm's current network as well as in adjacent networks. The paper commences with describing this study's theoretical lexicon, the study's methodology, its results and discussion, and subsequent conclusions.

LITERATURE REVIEW

The empirical focus of this study is *technology-based self-service* (TBSS). The emergence of TBSSs was originally mainly as digital kiosks and ATMs that removed time and space barriers for consumer services (Dabholkar, 1996). TBSS has since then been introduced in many other settings including dealing with activates between firms and in the supply chain. However, a similarity between early and later TBSS studies is a focus on the customer's willingness to use TBSS as well as is impact on service and relationship quality. Few have addresses what abilities firms need to realign their business to include TBSS – especially when it comes to firms that operates in B2B markets. Another limitation is the dominant focus on consumers in extant literatures' (Reinders, Dabholkar, & Frambasch, 2008), a limitation this study responds to.

The study is based on two theories that both have similarities and differences when it comes to explain resource utilization and firm abilities in networks. We apply a theoretical lexicon inspired by IMP research and S-D logic. Firms will to a more extent rely on external partners to get access to technical knowhow, i.e. abilities needs to be consider both within the firm and external to the firm (Håkansson, Ford, Gadde, Snehota, & Waluszewski, 2009). Furthermore, firms are dependent on, and defined by, their business relationships. We describe this research stream as IMP research (Ford & Mouzas, 2013a), i.e., studies of industrial networks or markets-as-networks. IMP research does emphasize that firm's abilities are a result of its internal as well as external resources. To improve its performance, firms are engaging in *business networking*. Ford and Mouzas (2013b, page 436) define "the conscious problem-driven attempts of one or more business actors to change or develop some aspect(s) of the substance of interaction in relationships in which they and others are involved." Thus, IMP research comes with a systemic view that emphasizes the interactive aspects of business, i.e., no single actor control the business process – they can only try to influence it (Ford & Mouzas, 2013a).

A more late stream of studies have followed how business firms that have acted according to a "goods dominant logic" (cf. Vargo & Lusch, 2004) as a mean to include services in their offerings and become a total solutions provider (Gebauer et al., 2010). Some of these studies

have followed the traditional stream of services marketing research focusing customer expectations and service quality whilst others have focused the process of service development and delivery in terms of value co-creation through S-D logic. This later theoretical development manifested through the S-D logic propositions and axioms advocates altering the current theoretical paradigm from being focused on physical entities and artifacts to the service and their value-creating potential. Ford (2011) respectively Ford and Mouzas (2013a) discussed these commonalities and differences, see Table 1 below.

Table 1. A comparison between IMP and S-D logic lexicons.

Area	IMP	S-D logic
Origin	Empirical	Conceptual
Market:		
- approach	Descriptive	Normative
- view	Systemic	Systemic
- focus	(Industrial) networks	Service ecosystems
- type	B2B	All exchanges (incl. B2B/B2C/C2C/C2B)
- evolution	Path dependence	Institutions
Exchange:		
- Initiation	Offering or solution	Value proposition
- Process	Activity links, actor bonds and resource ties	Value co-production and co-creation
- Outcome	Efficiency and/or innovation	Value-in-use and/or value-in-context
Value focus	The relationship (per se)	As (phenomenological) perceived by the beneficiary.

Whilst the IMP and S-D logic might seem having few commonalities when it comes their lexicon, their advocacy for a systemic view on markets, their acknowledgement of the (central) role of networks (even if S-D logic describe them as service ecosystems which is close to IMP's jungle metaphor, see Håkansson et al., 2009) and their relational orientation becomes a contrast to traditional microeconomic and marketing strategy thinking (Ford, 2011; Håkansson, Harrison & Waluszewski, 2004).

IMP's strength is that it has integrated the involved actors' *relationships* into its theoretical representations (i.e., its evolution, substance, and function) whilst S-D logic only gives homage to that it is inherently relational (through its eight fundamental premise, 'A service-oriented view is inherently beneficiary oriented and relational.') without theorizing the relationship further. Ford and Mouzas (2013) addressed this gap and argued for that the value that are generated in a network will vary over time, as will the involved actors perception of what they give or gain from the network be. Thus, S-D logic needs to include the relationship orientation further, something that was seen in a later study that also explored the relational aspects of service and value in networks (Ekman, Raggio and Thompson, 2016).

While Ford (2011) respectively Ford and Mouzas (2013a) based their rendering of S-D logic on the (second) updated version of S-D logic as presented by Vargo and Lusch (2008), there has been a late (third) revision of the S-D logics fundamental premises and axioms (Vargo & Lusch, 2016). Two major shifts can be seen in this third versions; the first is that S-D logic removes the labeling of the involved firms or consumers (described as 'enterprise' and customer') and discusses beneficiaries (and implicitly also acknowledge providers), the second is that they puts forth the role of institutions (Vargo & Lusch, 2016). We will in this study draw on both IMP and S-D logic lexicons as a foundation for the grounded study through their complementarity and include S-D logics latest addition of institutions. Our ambition with this combinatory use of theory is to generate a new both empirically grounded

and theoretically connected framework of TBSS abilities as well as relate the results to current IMP and S-D logic theory in attempt to allow further theoretical developments.

Abilities from an IMP perspective

We acknowledge the relativity of resources where some are tangible and physical (as technology and materials) whilst others are intangible, abstract and harder to capture or measure (as know-how and best practices). The well known actors, resources, activities (ARA) model stress that the "provision and use, and thus the value, of resources hinge on the knowledge of recourse use and how it is spread and coordinated among the providers and users in the existing business network (Håkansson & Snehota, 1995, p. 133). IMP research does not focus the resources per se but rather how they are spread in a network of firms as well as how the resources are acted upon. A later conceptualization of resources that are based on B2B markets is the 4R model that specifies resources as products, facilities and equipment, organizational units, and organizational relationships (Håkansson et al., 2009; Waluszewski & Håkansson, 2007; Håkansson & Waluszewski, 2002). Thus, the 4R model does explicitly also address resources that the firm can utilize through the interaction with others. Following this line of reasoning a firm's abilities – that is dependent on the possibility to put resources into action – does not only reside within the organization but also beyond the organizational boundary, i.e. within the business network that the firm is embedded in.

A firm needs to posses network abilities to tap into the resources in the wider network, i.e. to manage, integrate and learn from its business relationships (Kohtamäki, Partanen, Parida, & Wincent, 2013). Ford, Gadde, Håkansson and Snehota (2011, page 195) discussed this as networking which is "manager's attempts to change and develop their interactions and relationships with others". This is done to get access to critical resources outside the firm. Thus, abilities does not only reside within a firm which is advocated by for example the resource-based view (RBV) – it is also available though the firm's business relationships and through alliances. Day (2011) describe that whilst RBV (Barney, 1991) has an inside-out perspective (i.e., focusing the resources that the firm posses and their value due to market imperfections), marketing needs "an outside-in approach to strategy begins with the market. […] This perspective expands the strategy dialogue and opens up a richer set of opportunities for competitive advantage and growth" (Day, 2011, p. 187). This understanding is not new. IMP research has since its early contributions argued for that firms business networking abilities are critical (Ford and Mouzas, 2013b) where a firm must arrange its (intra-organizational) processes so that it efficient can act in its (inter-organizational) environment of suppliers, customers and other stakeholders Sheth, Sharma & Iyer, 2008). Thus, firms need to be able assess their own (internal) abilities as well as abilities that reside in their business network.

Being successful in business networking has been depicted as dependent the firm's relational skill, market knowledge, and internal communication (Walter, Auer, & Ritter, 2006). In this study, this does especially relate to the technology, service-orientation and relational abilities. Some firms will have much of the needed knowhow within the firm whilst others need to restructure their resource-base and their existing abilities. However, this might not only be a case of increasing the use of external partners or recruiting new personnel. It might also require the firm to search for new networks given that 'inward focused networks' may have a problem extending market offerings into new domains (Dyer & Nobeoka, 2000), e.g., as when product oriented companies realign themselves to become service or solution oriented.

Ford and Mouzas (2013a; 2013b) put forth activity interdependency, resource heterogeneity and actor jointness as the static (i.e., in space and time) entities of business interaction. This is a reflection of IMP's ARA conceptualization of relationship and network structures.

However, Ford and Mouzas (2013a) also add that activity specialization, resource paths and actor co-evolution is the business interactions dynamic entities (i.e., over time). A reasoning that resonances well with the three network paradoxes that IMP has defined (Håkansson & Ford, 2002). The first paradox states that a firm's "network is both the source of freedom for a company and the cage that imprisons it" (Ford et al., 2011, page 185). This means that a firm will be enabled to do all the things they do due to its available (adjacent) business networks, what Ford and Mouzas (2013b) label 'the small world', but that they also a restricted by these business relationships in what they can accomplish. Having other offerings (e.g., a TBSS) might demand the firm to limit its obligations in the current network – i.e., reduce the interdependencies – and seek new relationships in other networks (Ford & Mouzas, 2013b, 'the wider world'). The second paradox is that a firm's "relationships are the outcomes of its own decisions and actions. But the company is itself the outcome of those relationships and of what happened in them" (Ford et al., 2011, page 188). Thus, firms that aims at developing an innovation (as a TBSS) or embrace the managerial trend of 'servitization' will also need to nurture business relationships that allows them to restructure and take the form of a organization that offers services. The third paradox is about the firm's networking attempts stating that "the more a company achieves this ambition of control, the less effective and innovative will be the network" (Ford et al., 2011, page 191). The third paradox is a result of the study of (dominant) firms that have stiffened their suppliers and customers through a too tight control and by limiting the information exchange. Thus, IMP literature prescribes more of a loosely coupled relationships.

Whilst IMP research allows us to understand the dynamics and complexity of business networks, and the involved actors behaviors, it has too a lesser degree investigated the institutions that affect the firm's behaviors. Early IMP literature mentioned that the business relationships lead to that "expectations become *institutionalized* to such an extent that they may not be questioned by either party and may have more in common with the traditions of an industry or a market than rational decision making by either of the parties" (Håkansson, 1982, page 17). However, few have to our knowledge studied what kind of institutional structures that affect the firms in a network with exception of the study of different international networks (e.g., Jansson, Johanson & Ramström, 2007). This study is a response to this research gap.

A S-D logic perspective on abilities

The mainly conceptual S-D logic has inherited many of the theoretical principles that IMP researchers have developed from empirical observations, especially when studying its development from eight original premises (Vargo & Lusch, 2004) – via ten premises and the shift from services (plural; a firm and outcome oriented theory) to service (singular; process-oriented theory where a provider does something for a beneficiary) (Vargo & Lusch, 2008) – to the current eleven premises and five axioms (Vargo & Lusch, 2016). The version of S-D logic has been explicit about the central role of networks, often referred to as 'service ecosystems', for value co-creation and actor-to-actor exchanges. The eleventh proposition and fifth axiom are also capturing the macro-environment of service networks. The fundamental premise (FP11) is stated: "value cocreation is coordinated through actor-generated institutions and institutional arrangements" (Vargo & Lusch, 2016, p. 8). S-D logic does furthermore put forth IT as the main enabler of value co-creation – due to its possibility to represent knowledge-based processes and its role in 'liquefying' information (Lusch & Nambiasan, 2015; Lusch, Vargo, & Tanniru, 2010; Vargo & Lusch, 2016).

A commonality between IMP research and S-D logic is that both has a strong emphasis on resources utilization as well as resources are 'in the making'; i.e. it is what you make out of a resource that counts ('resources are not given, they become'). Firms that knows how to utilize

resource combinations the best will increase the 'density' (Lusch et al., 2010; Normann, 2001), i.e. getting closer to what is the optimal resource combination for maximum value creation, and thereby survive in the business networks. S-D logic makes a distinction between operand resources (i.e., tangible resources) and operant resources (i.e., resources that act on other – operand or operant – resources to create an effect) (Lusch & Vargo, 2014). Thus, resources span from being tangible (operand) to intangible (operant), where it is the later that results in a competitive advantage. While operand resources are typically physical, operant resources span from being human (e.g., competence), organizational (e.g., best practices), informational (e.g., knowledge) to relational (e.g., business relationships with other firms) (Madhavaram & Hunt, 2008). It is the operant resources that can be connected to a firm's abilities (cf. Ford and Mouzas, 2013a).

Following S-D logic the goal of resource utilization is to achieve value-in-use (Vargo & Lusch, 2004; 2008) and lately value-in-context (Vargo & Lusch, 2016). There has been a debate whether the value originates when the customer uses a service (Grönroos & Voima, 2013) or if value is co-created, i.e., a dyadic entity that originates in the provider-beneficiary interaction. However, the discussion has later highlighted that different values originate at different levels where there can be value-in-use at the firm level, dyadic level as well as in the wider network (Ekman, Raggio & Thompson, 2016; Vargo & Lusch, 2016). Thus, value-in-use is when different forms of heterogeneous resources are utilized in service, and the better these combinations are, the higher the 'density' (Normann, 2001) – i.e., value-in-use potential – is realized.

The latest revision of S-D logic (Vargo & Lusch, 2016) puts forth that institutions, as early IMP research, will affect what the partners expect and how they engage in exchanges and value co-creation. Firms view on markets, and other firms' offerings (value propositions) will be dependent on the current institutions. When firms like to introduce an innovation – as a TBSS – they will need to confront current institutional logics. As described by Vargo and Lusch (2016, page 11) declare: "In S-D logic, these *institutions*—humanly devised rules, norms, and beliefs that enable and constrain action and make social life predictable and meaningful […]—and higher-order, *institutional arrangements*—sets of interrelated institutions (sometimes referred to as "institutional logics")—and the process and role of institutionalization are the keys to understanding the structure and functioning of service ecosystems." Thus, firms are both enabled and controlled by current institutions, and interacting firms will need to have the proper 'institutional arrangements' in place to engage successfully in business interaction.

The institutional framework offered by Scott (2014) outline three main pillars of institutional work (see Table 2) spanning from more controlling to more enabling views on institutions. We can expect that different institutions that surround B2B firms' interaction can be related to all three pillars, i.e., some institutions will be more explicit and regulatory while other will be embedded and normative/cultural limiting the involved actors uncertainties and cognitive limitations given that they can take the counterpart's actions for granted.

Table 2. Three pillars of institutions (based on Scott, 2014, pages 59-70)

Area	The regulative pillar	The normative pillar	The culture-cognitive pillar
Basic description	Institutions constrain and regularize behavior.	Rules that introduce a prescriptive, evaluative, and obligatory dimension into social life.	Shared conceptions that constitute the nature of social reality and create the frames through which meaning is made.
Origin	(Institutional) economists, rational choice political scientists.	Early sociologists.	Sociology and organization studies.
Focus	Explicit regulatory process; rule-setting, monitoring and sanctioning activities.	Values (preferred or desirable outcomes), norms (how things should be done), and roles (who does what due to social position).	The cultural and cognitive dimensions of human existence; shared beliefs/definitions, common frames, organizing logics and assumptions.

The IMP literature has to a less extent integrated institutions into its lexicon even if the theoretical development of 'network pictures' rely on the cognitive dimension of business actors and how this affect what actions the pursuit, and their sensemaking, within the network (cf. Colville & Pye, 2010; Mouzas, Henneberg & Naudé, 2008). However, the idea behind Vargo and Lusch's (2016) 'institutional arrangements' was early incorporated in the interaction model. Håkansson (1982) stressed that the buyer and seller over time – as part of their relationship development – developed ways of interacting efficient and effectively through mutual adaptations (which at the other hand also strengthened their interdependency). However, the business relationship has also been described as a 'golden cage' limiting firms' actions (cf. Ford et al., 2011) restricting their possibility to be innovative (as, e.g., introduce a sustainable TBSS). This process has been addressed as 'making, maintaining, and breaking' institutional rules (Koskela-Huotari et al., 2016). Thus, a firm that wants to change the offering – or the procedures – within its network will need to engage in institutional work. As Reay and Hinings (2009) study of the Alberta (Canada) health sector where their starting point was an interest in that "a new [institutional logic] may be introduced to a field and become dominant – providing new guidance for field members" (Ibid., page 629). However, they conclude that this was not doable due to rivalry institutional logics between the health providers and administrators why the network actors had to come up with a strategy to adhere to their respectively logics. We will in this study try to incorporate the focus on institutions (supported by Scott, 2014) in parallel with crafting the abilities that B2B firms will need to develop TBSS.

Study focus

Following the IMP and S-D logic focus on acquiring, combining, and utilizing resources for creating an offering – and that the resources are heterogeneous in nature – we focused how the involve partners in a service network collaborated to engage in value co-creation. We also acknowledged the win-win perspective that follows a focus on market exchanges carried out by two actors (cf. Håkansson & Snehota, 1995). IMP did early make a difference between the empirical 'supplier-customer' structure, and S-D logic was adding that the generic actors have roles as providers and beneficiaries in actor-to-actor (A2A) exchanges (Vargo & Lusch, 2011). Later studies have further elaborated A2A exchanges by pinpointing that there might not be a clear cut between being a provider and beneficiary even if one actor often assumes the role as initiator of a value proposition (Ekman et al., 2016; Vargo & Lusch, 2016).

Normann and Ramírez (1993) described the resource utilization process in networks as 'value constellations' and late IMP renderings of such constellations have addressed the involved firms 'networking' activities (Corsaro, Ramos, Henneberg, & Naudé, 2012). Thus, actors (in the role of firms and individuals) interact to make resource integration and utilization possible. However, even if many theoretical renderings of business networks describe a balanced network with multiple collaborating actor (Lusch et al., 2010). Empirical studies do more often indicate asymmetry in information, power and resources between network actors (Corsaro et al., 2012; Nätti, Pekkarinen, Hartikka, & Holappa, 2014). Thus, some actors will perform better than others given their network abilities (Kohtamäki et al., 2013).

This study is thereby focusing how the focal firm, i.e., provider: (a) explores and exploits heterogeneous operand and operant resources (Lusch & Vargo, 2014) by (b) developing best practices within the firm, and (c) establishing and nurturing relationships with its business network (i.e., 'networking') (Ford, Gadde, Håkansson, & Snehota, 2011). (d) We furthermore address how IT and marketing knowledge (as well as other knowledge areas as technology and sustainability) is combined as a mean to achieve a maximum resource combination for an attractive 'offering' (Kohtamäki et al., 2013; Skarp & Gadde, 2008) or 'solution' (Baraldi & Waluszewski, 2005; Biggemann, Kowalkowski, Maley, & Brege, 2013; Hakanen & Jaakola, 2012) and subsequent value co-creation (Grönroos & Voima, 2013; Lusch et al., 2010; Skålén, Gummerus, von Koskull, & Magnusson, 2015). This is considered (e) within a setting of different, potentially competing, institutional logics (Vargo & Lusch, 2016; Scott, 2014). These five premises bridges IMP research and S-D logic and offers a theoretical foundation for understanding how TBSS are developed and diffused by a firm within a B2B network. The paper commences with a description of the empirical setting and data collection followed by a presentation of the resulting framework.

METHODOLOGICAL APPROACH

We chose to make an in-depth explorative case study within the real estate sector given that they face a current challenge due to the striving towards 'smartness'. The 'smart city' concept and related technologies suggest businesses will be more interconnected by information flows that will improve productivity and well-being (e.g., sustainability and increased quality of life). This striving is interlinked with smart use of IT, and a challenge is to "making use of [IT] to shift from material goods to services" (Kramers, Höjer, Lövenhagen, & Wangel, 2014), i.e. real estate firms face a both technological and business logic shift which challenges current abilities. The smart city concept is also aligned with S-D logic, which depicts all actors in society as value co-producers and where services are traded for services and where technology becomes a practical application of knowledge that can be used for value co-creation (Lusch & Nambiasan, 2015). However, many firms seeking to integrate smart technologies into their everyday business activities are finding that achieving widespread adoption is challenging. These challenges exist within and outside the firm.

Data were collected over three years (mid 2013-mid 2016) through more than 30 in-depth interviews, observations, workshops, and participation in ongoing business activities of a focal firm and business partners (customers, suppliers, and other actors) in a real estate business network. The empirical focus was a TBSS named Green Fingerprint, an 'app' that the focal firm Humlegården offered their tenants. Humlegården, a real estate firm in Stockholm, did initially offer these on an iPad mounted on a pedestal. The app was later further developed to include even other services as well as being able to be projected at other means as well through the HTML standard.

We adopted a systems science and multidisciplinary approach where the research group incorporates marketing, management and information systems (i.e., IT) perspectives to study the service network that was exposed to the technology-based self-service activities of a Swedish real estate firm. The selected focal firm is an acknowledged pioneer on the design and deployment of TBSS. We conducted interviews with the real estate firm, IT vendors, and customers (tenants) throughout the project and we were also invited to several of their activities with partner firms. One of the researchers did also spent on average a day per week the first year and then made revisits 1-2 times a month to collect more data and, in the end, carry out member checking. The other two researchers had distance to the empirical material to be able to conduct the analysis without being collared by the respondents and empirical environment. All researchers were towards the end of the project in contact with several of the respondents for member checking and complementary data collection.

The focal firm Humlegården was selected as a theoretical and purposeful sample given that they were presented as in the forefront of sustainable TBSS in Sweden by Computer Sweden in 2012. The two theoretical foundations, IMP, and SDL, was used for theoretical triangulation as a mean to develop a robust conceptual framework. The results show that the development of sustainability-focused technology for self-service purposes must be addressed at three levels. The presented IMP and S-D logic descriptions of heterogeneous resources and the dialogic, iterative and reciprocal process of 'networking' of the studied firms guided the study. The research design allowed us to iteratively, through systemic combining (Dubois & Gadde, 2002) and pattern matching (Yin, 2014), develop a TBSS ability framework that has both practical and theoretical implications. Our TBSS framework identifies the abilities a firm must have to develop sustainable self-services that are utilized over the long-term.

RESULTS AND DISCUSSION

The study showed that the TBSS abilities had a hierarchy, which we arranged into a emerging conceptual framework that we label 'the 4I framework'. We identified four levels that are labeled infrastructure, integration, interface, and institutions and they span from more instrumental and technical abilities to organizational abilities resulting in value proposition and value co-production abilities where their potential is affected by the institutional arrangements. The abilities are developed in an environment where the customer (i.e., S-D logic's 'beneficiary') and dominant institutional logics affect the process and outcome.

The results show that the firm has to utilize both internal resources as well as external resources, i.e., a simultaneous 'inside-out/outside-in' strategy (cf. Day, 2011) to get the necessary sustainable TBSS abilities. The 4I framework also shows that some components are embedded in the organization whilst others need to be acquired through strategic relationships. The resulting framework and its related abilities, as well as environment, are described below.
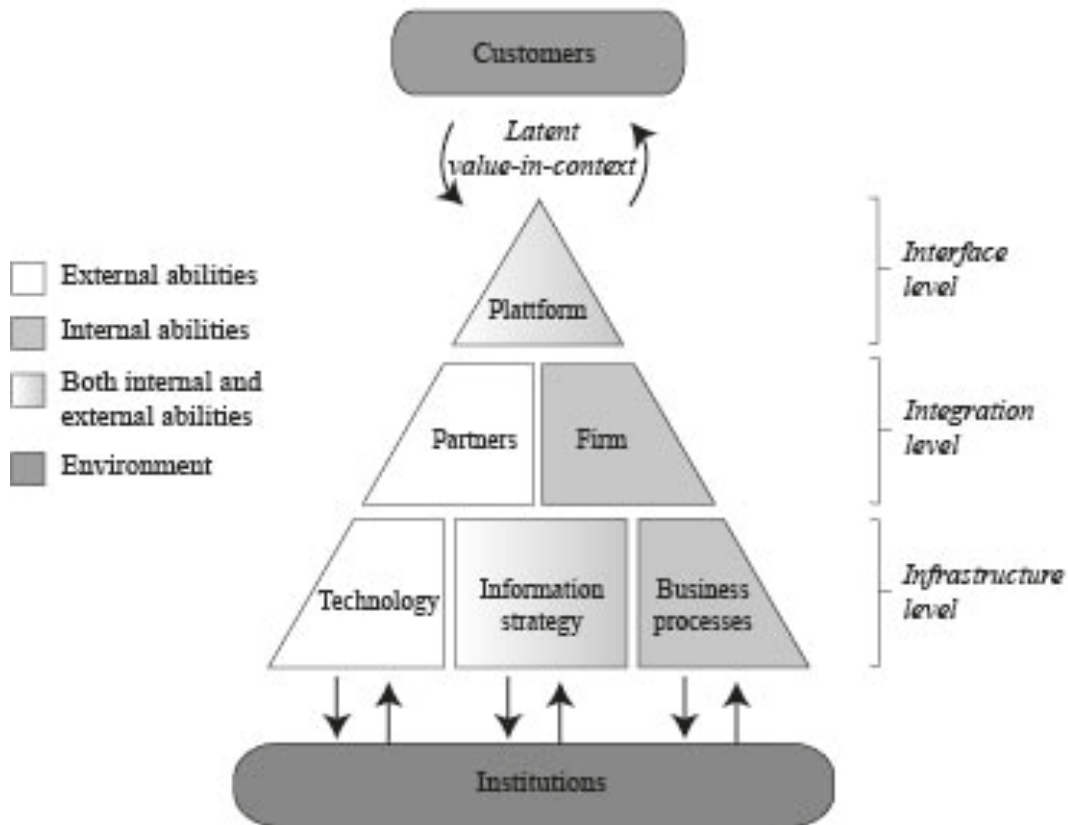
Fig. 1. The 4I framework

Infrastructure level

The Infrastructure level has three inter-related components that need to be in place prior to self-service development and diffusion: (a) the technology that allows the right information to flow to the right person at the right time, (c) an information strategy that specifies how delivered information impacts decision-making and activities, and (b) the business processes that specify how the value propositions are formed and offered to the customers.

Technology. The technologies needed for collecting, storing and presenting the necessary data for sustainable services make out the TBSS backbone. Most of the studied technology were not 'state-of-the-art'; they were instead mainly 'commodities' as ordinary meters, valves, controlling units with specific functions as measuring flows, temperatures and so forth. Thus, the base for the sustainable TBSS ability seemed to be tangible equipment (cf. 4R, Waluszewski & Håkansson, 2007) and hence operand resources (Lusch & Vargo, 2014; madhavaram & Hunt, 2008). These were all connected and integrated by a real estate intranet made up of standard software and hardware. However, there are some main drivers behind getting a technological infrastructure that supports value-creating TBSS. To accomplish the necessary resource-base Humlegården focused four different aspects of all technology following the questions:

1) How can the generated data (from the technologies use) be transformed to make the technology easier to use or more available to the user?
2) What is needed to interconnect different technologies for refined functionality and enhanced value-in-use potential?
3) Do the everyday use generate data that can be valuable to the customer or that can lead to new innovative services?
4) If the technology that is used does not generate value for the firm or the customer; how could it be transformed to offer a higher value-creation potential?

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The questions above are all related to different forms of value creation, either for the provider, for the beneficiary or (optimally) for both. The result of such process also lead to that the IT utilization becomes more valuable operant resources (i.e., knowledge, insights, understanding). This does have effects on how to interact with within the organization as well as with suppliers given that the needed resource combinations might be hard to achieve on their own.

But even if Humlegården stood out as a technology savvy firm there was no need for state-of-the-art solutions; the technology should be easy to set up, use, and understand. Thus, it was built on standard technology supplied by regular hard and software firms. As elaborated by the Technical Coordinator:

> If you build a system that allows you to easily access information […] There are explanations, its pictures, it is good texts, its live information where you get a number that tells you if everything is okay. In a language that everybody understands: "It [performs] 100% well today." Green figure is good, red is bad. So you use colors, symbols, and texts that guide [the users] understanding!

Following the in-depth interviews the technology is a integrating and enabling entity – that offers 'liquidation' (Lusch et al., 2010) – that act as a gateway for the basic data that is needed to manage operand and operant resources and hence become foundation for value co-creation.

Information strategy. The second fundament behind a TBSS ability is manifested in the information strategy. A central theme behind the selected building technologies as HVAC systems and lightning was to use IT to: (a) optimize these to decrease cost and increase indoor well-being and (b) develop innovative and vale-creating services. The real estate industry is very conservative in regards to how they carry out their construction and most houses are not performing at their optimum. Humlegården's CTO explains:

> Normally when you build the [HVAC] system, you build it too big. Normally you don't use the system's capacity fully. So we select smaller fans and equipment in the [HVAC systems] which saves big money. Save it in investments, by building smart systems!

This means that the use of technology and the information it can register and store for automatization (i.e. operant resources) means that they can reduce the need of expensive operand resources (HVAC technology). Thus, having a information strategy that includes limiting the use of natural resources (electricity, air, and building spaces) allows saving money given that it enables increased monitoring that does not require overuse of natural resources, as described by the Technical Coordinator:

> What happens in [traditional systems designed for 100 office spaces] is that it is no difference if there are 100 persons or only 30 persons in the office. That means that 70% of the energy, air volume and so on that aren't used that day; you loose it! But we save that [energy and air volume]. And why saving it, we create an office that doesn't become too hot or too cold.

Thus, saving energy does both reduce cost but in parallel increase the quality of the indoor climate – i.e., invisible services for heightened well-being (Ostrom et al., 2015). But Humlegården did not stop at using the technology for cost savings and customer quality. They also investigated if the information generated by the technology could be used to offer innovative services. One of Humlegården's later additions in the Stockholm Suburb has allowed the firm to make use of the latest technology as well as develop some new solutions. The CTO explains:

> The system allows us to check how the tenants are moving in the building. If we have a lack of conference room, we can check out the conference room and see how much they use the conference room. If they say it's crowded on a space, we can check it out. See how people are moving, where they sit, and things like that.

Having a clear information strategy that focuses solutions for reduced cost, increased customer quality, and offering the possibility to create new services based on innovative resource combinations and subsequent resource utilization does thereby represent a basic fundament for a firm's sustainability TBSS ability.

Business processes. The third component at the infrastructure level is the firm's business processes. Humlegården applies a cost-focused and customer-oriented approach when developing their business processes. A major cost is having vacant offices why getting and keeping customers are critical given that "noting is more expensive than to loose a customer" (as stated by a Humlegården Real Estate Manager). Humlegården had developed a business model that allowed for continuing refinement of their buildings and their indoor climate.

> Tenants typically pay for heating and cooling per square meter, and pay for waste handling, following a fixed rate with an index during the lease period. So there is a fixed price for heating and cooling during the lease period.

The tenants contracts usually spanned three to ten years which allowed Humlegården to do energy-saving investments and thereby get a return on investment based on the difference between the tenants contracted costs and the achieved energy savings. However, Humlegården did also want to make sure that they always met and the customer's expectations which required that they developed their business processes to make sure that they captured the needs and wishes of the customers. As described by the CEO:

> That's what you have to do – find what's irritating [the customers]!

This mindset means that Humlegården developed processes to address the different needs of their customers and that they aligned their organization to handle these needs. Thus, Humlegården tried to understand what value-in-context (Vargo & Lusch, 2016) their tenants required and form their value propositions based on that. Many of these services were focusing making the (work) life easier (i.e., utilitarian value) rather than being fun or individualistic (i.e., hedonistic value).

A common way of achieving customer value-in-context was different forms of software as a mobile app for fault reporting that tenants could use to write short messages about problems in their facility. The customer could also attach a photo of e.g., damage in their office. The app was directly connected to customer service and to Humlegården's technical staff. Fault and complaint handling had taken much time in the past, given that Humlegården owned towards 50 facilities around Stockholm. Now the technicians know how to optimize their routes which had resulted in a much higher technician productivity than comparing to the Swedish average.

Humlegården's developed technology and information strategy did also mean that customer service could create new tenant passes (i.e., magnetic cards) as well as business signs in stairways and outside entrances remote. Usually a technician visited the tenant when they hired a new employee or when they changed company name. Nowadays, each tenant had some extra passes that could to be activated from Humlegården's headquarter. This was done via the intranet. A equally quick and digitalized process was created for dealing with entrance signs and company signs. Humlegården thereby replaced the old copper signs with digital ditto and all the changes were made via their central real estate server.

The most revolutionary service was probably their TBSS Green Fingerprint that was developed to offer customers a better understanding of their energy consumption. Mestro – a software firm that focused information systems for energy monitoring and analyzes – developed the TBSS in close cooperation with Humlegården. The 'app' was originally developed as an iOS interface made for iPads and it presented data from Humlegården's real

estate enterprise system (also developed and supplier by Mestro). The app did present heat, cooling, and office energy use even if the tenants only paid for, and had a major influence over, the last (office energy). Several of the respondents described that Green Fingerprint was a minor challenge one they had all the energy use recorded and stored in real-time. This development had both given positive signals in Humlegården's yearly customer surveys as well as when it came to requite staff that wanted to work with the latest technology. The firm's focus on monitoring and optimizing the facilities was captured by one of the real Estate Mangers:

> We have always been good at – and we have statistics to back it up – [energy optimization]. We lower the energy consumption with 25% when we buy a facility. And this is done by a [a few skillful engineers] by adjusting some valves!

However, many of the tenants had less interest in energy and sustainability. For these customers, other services were more interesting. Humlegården had a portfolio of activities that they used to uphold the contact with customers as periodically; inviting key customers to movie nights, offering breakfast in the facilities, offering bicycle repair near the facilities, offer an electric bus in a business area with bad communications, amongst others. Humlegården did overall constant review their way of doing things as a mean to make the customers' life easier and thereby also secure that they experienced different forms of value-in-context and thereby became loyal customers.

Middle level: Integration

The next level, the Integration level addresses the abilities needed to successfully design and deploy a technology-based self-service. While the Infrastructure level establishes a foundation upon which robust self-service technologies can be built, the Integration level addresses how the technology-based self-service can potentially positively impact process performance and is comprised of two interdependent parts: (a) the firm (i.e., organization) and its (b) partner firms. The Integration level addresses challenges that arise when technology implementation impacts processes and workflows. Any firm that utilizes TBSS will have to master both technology and new service processes. Failure to do so results in what has been called the 'service paradox' (when increased costs for services are not met by increased revenues).

Firm. The interviews reviled many aspects that had to do with Humlegården as an organization. These had on a theoretical level to do with resources and firm strategy and on an empirical level with skills, knowhow, mindset, and goal orientation. The empirical rendering described a company that had become more technology and marketing oriented and that these processes had taken place in tandem. Initially it was about getting the technical competence needed. Thus, core staff was hired from different firms that were leading in real estate automation. This included hiring from partner firms that rejected Humlegården's suggestion about a technical innovation:

> We tried to change [our supplier's] system, and they said "we can't do it". So we employed one of their programmers. It took him two weeks to change their system. It was [that] easy!

A 'there is no limitations' mindset colored several of Humlegården's employees descriptions. The CEO elaborated the current state within the real estate industry in comparison to how Humlegården approached things:

> If you don't have the knowledge inside your company it's a big problem. […] You have to understand [that the real estate] companies are conservative. They think "We have done like this for last 20 years, why should we change?" We try to look at in another way: "Can we change this?"

The respondents at Humlegården as well as at the tenant firms described a staff that had great mandates and that could act independently. The CEO described that he believed in empowerment – "even if things go wrong, it mostly get right!" – and that he had built an organization with strong competences. He started this undertaking when he was appointed CEO and it took some years to get it all in place. However, he described that things took of when key players was in place:

> We got this environment with an empowered CEO, an interested CTO, and a [staff that has reached] critical mass – and we can do whatever we want – there are no limitations! This is when [the Technical Coordinator] says: "Lets connect all the facilitates, getting a [real estate] intranet. And let the supplier do this cheap because the will be allowed to sell this [technology] to other landlords. We should be able to do it cost efficient! (The CEO at Humlegården)

The technically skillful organization did in parallel need to develop strong marketing and sustainability capacities. Developing new market-oriented positions within the firm allowed for an increased customer focus:

> During the initial growth from 5 to 20 MSEK in real estate value we did not do any change in the organization. But the Real Estate Managers experienced bottlenecks given that they had to deal with everything from contract negotiations with millions in parallel with bike racks. So we restructured. A few had to go, but we also hired so that they became two Real Estate Managers and five Marketing Area Managers that allowed us being more customer-oriented. We did also hire three leasing agents [that interacted with prospective customers]. And this has given great results!

The shift in organizational structure was also mirrored in how the technical solutions were developed. Humlegården did amongst other hire a sustainability manager that made the firm more aware of their environmental impact beyond energy consumption. She did not only engage in reducing energy consumption – she did amongst other also engage in how to develop their facilities with regards to waste management and following environmental standards. Humlegården did furthermore engage in careful restoration of their older buildings which including hiring an architect. Thus, they widened the scope of what was considered sustainable beyond energy consumption.

This change in organizational structure, where the technical, sustainable, and marketing agenda developed in parallel, could also be seen when it came to the "owner" of central business processes. Green Fingerprint had for example initially the technology department assigned as owner, strongly supported by the sustainability manager, but that responsibility was transferred to the marketing function once they developed Green Fingerprint 2.0. Thus, technical and commercial staff worked closely and they did, through reoccurring joint meetings, co-developed many of the services that ended up as value propositions to the customers. Thus, the firm needs to develop one of the 4Rs, i.e., its organizational units (Waluszewski & Håkansson, 2007) and increase its level of operant resources (Madhavaram & Hunt, 2008) when striving to develop sustainable TBSS abilities. The result of this process is manifested in the 4I framework's Firm component.

Partners. A core ability needed for developing sustainable TBSS is the network ability (Kohtamäki et al., 2013; Madhavaram & Hunt, 2008; Walter et al., 2006). Thus, many of the resources needed to create value resides outside the company. Humlegården was networking actively and they utilized their network, and developed new relationships, to secure the technology and knowhow needed to reduce energy consumption as well as develop innovative solutions that could be used in their everyday business. The interviews reviled more that ten partner firms that Humlegården had a close collaboration with or worked for establishing collaboration with. In these relationships, more than half offered illustrations of how Humlegården wanted something beyond what the partner firm currently offered alternatively that

they wanted to be the first firm to use a certain innovation. This spanned from contacting a firm where the consultants earlier worked for NASA (and where they now developed a solution based on space technology), Doberman (a design firm that had been active within e.g., the television, automotive, and insurance industry) to regular HVAC companies that did not offer the latest indoor automation Humlegården wanted.

Humlegården did actively make sure that they become a prioritized customer in the strategic partnership they formed. A way to make this happen was to become guinea pig facility and a reference project. This was amongst other confirmed by a Marketing Manager at the partner firm Mestro that had developed the database behind Green Fingerprint:

> We notice that Humlegården steps in and take a really strong part when it comes to affecting [our prospective customers]. They become a core reference. It becomes something like a value network throughout!

Humlegården's CTO was frequently invited to the partner firms' venues to describe their innovative services. He did also, together with the CEO and Technical Coordinator, frequently house both Swedish and international guests to show how Humlegården used innovations developed by partner firms.

> We take the position of being a good speaking partner to the supplier. And we challenge the suppliers; have them do the work. What we provide is a test site.

This strategy had gone well given that Humlegården lately had become one of five key partners to a large energy company. This priority amongst critical partner firms was a clear networking strategy (Ford and Mouzas, 2013b), where Humlegården actively required technical adaptations in several supplier relationships. Such partnerships could possibly make some of the solutions Humlegården had made to a de facto standard in the real estate industry. However, the respondents at Humlegården did not fear to loose a competitive advantage. Most real estate firms had a long way before reaching the technical standard they had (which was confirmed in a meeting with Stockholm's largest real estate firms where a competitor explained "we won't have such real-time systems within ten years"). Humlegården would then have developed even more refined technologies and services.

Top level: Interface

The third level is the Interface level where the TBSS is offered (as a value proposition) and where latent value-in-context can be harvested. The Interface level addresses the human-computer interaction and usability challenges associated with deploying a platform that essentially is a bundle of services (both digital and personal). The 4I framework is thereby focused on firm and customer interactions and embraces the S-D logic's idea of value co-creation (Vargo & Lusch, 2016).

The focus in this level is to offer customers value co-creating possibilities and Humlegården accomplished this by reflecting on how Humlegården's (both internal and external) resource base could be utilized to meet customer requirements. As elaborated by a Marketing Area Manger:

> You want the customer to feel that Humlegården listens to them, what their needs and wishes are. This is because […] the rent is most firm's largest expense after the salaries. That's why you want to [listen to them] given that you are their largest supplier.

Many of the services that were based on technology were merely or not seen by the customer, as surveillance services that supported Humlegården in keeping the garbage rooms clean or to manage the mentioned signs and passes. Others were manifested through apps, as Green Fingerprint and the fault reporting app. Humlegården did overall focus usability, simplicity but also the stimulating part of technology:

> It must be a bit fun – and nerds think this is fun! (Humlegården CEO)

> When you look at it you directly know how to use it. You press the right buttons and get the information you need]. This is the secret – it must be interesting to look at the things you design. (Humlegården Technical Coordinator)

However, self-services require the customer to take action and that may not always be the case. Humlegården did frequently combine the TBSS with personal visits – as when they set up a new TBSS or when it required updates or maintenance. Thus, the potential customer value-in-context was closely related to interaction ability (Kohtamäki et al., 2013) and a well-developed customer dialogue (Day, 2011). The TBSS also became something for the staff to talk with customers about, i.e., a resource that gave Humlegården's staff another reason to interact with customers.

Developing an interface that offers the customers something they haven't asked for, but that they may require forthcoming, did also become a proactive action that limited future costs. Customers that received the Green Fingerprint did for example also receive quarterly energy reports:

> We send out quarterly reports and there is much of the statistics that the tenants can have in their environmental reports. We do this to say "here it comes" which I think many [customers] appreciates, but it does also make it easier for us. The alternative is that the customer's are using consultants that declare that "you must have this and this" which would result in that we have to manually collect information based upon their definitions. This would be a lot of work. That's why its better to standardize and say: "you get this"!

Thus, the interface level can as a base that supports customers with what they need but the interface will at its best pre-empt adaptation needs by offering a version that the customer may require forthcoming.

Environment

The 4I framework outlines three levels of abilities needed for firms to handle sustainable TBSS but the results also showed other components that has an impact of the process of gaining that capacity. Two components that stand out, and that are related to existing service research, are *customers* (as beneficiaries of the TBSS) and *institutions*. These two components are elaborated below.

Customers. Humlegården did come out as a well-recognized business partner in the interviews with 16 customers and this has also been seen in their Customer Satisfaction Index (CSI) the last year. Humlegården started to participate in the yearly Swedish CSI survey in 2011 and their aim was to be top-3 in the Stockholm area. They reached the target within three years. Thus, they can be considered a customer-oriented firm that actively develops their business relationships.

The interviewed customers spanned from appreciating Humlegården's effort to come up with new TBSS to consider the self-services a marketing gimmick. However, the majority described that Humlegården's ambitions was good and several customer did, inspired what they had experience so far, came up with future services that Humlegården could offer (e.g., networking events with other tenants in the building, waste management and so forth). Thus, Humlegården's proactivity and their inclination to develop innovative value propositions render positive and constructive responses from the customers. Humlegården carried out "customer lunches" to capture such ideas in parallel with nurturing the customer relations. Through this interaction Humlegården could tap into how the customer (beneficiary) experienced "value-in-context" as well as get an understanding for what the customer context was. This became the base for future resource utilization and hence ability development.

Institutions. The study's results also indicate that the potential and momentum of any firm's self-service platform ability can be found in the fourth I: *institutions*. While services that are well grounded in current societal discourses and priorities can get a push forward, services that are innovative will face resistance throughout the 4I levels as well as when offered as value propositions to the customer. This was clearly observed in this study. It was not only Humlegården that described the real estate industry as conservative – so did partner firms and competitors. One real estate firm representative described many landlords' view on customer interaction:

> You don't want to rock the boat – that's why many landlords don't interact frequently with tenants. If they do, they are afraid that some problems may be raised.

The heaviness of the current institutions was also manifested in the interaction with several core suppliers. The large energy companies did for example not offer real time energy consumption given that their focus was on getting the billing right rather than real-time information services. Thus, Humlegården had so mount slave meters on all their equipment to get the functionality they wanted. It is thereby clear that the dominating institutions state what (operand and operant) resources (Vargo & Lusch, 2016) a firm can get and how they can get it. Developing innovative and sustainable TBSS in such environment will thereby cause friction and demand a well-developed and proactive networking capacity.

Humlegården did actively seek new resource combinations in other networks – what Ford and Mouzas (2013a; 2013b) describes as 'the wider world' – to realize their ideas about modern real estate management and customer relationship management. By doing this they engaged in *institutional work* (cf. Koskela-Huotari et al., 2016; Reay & Hinings, 2009) where they tried to alter the institutional arrangements (Vargo & Lusch, 2016). Thus, they did (seeking innovative resource constellations) *pull* institutional logics from other networks ('the wider world') into their own network ('the smaller world'). Once they had the new resources and related institutional logics in place they needed to persuade the customers as well as suppliers about the value in the innovations. Thus, they had to *push* a new institutional logic into their adjacent network ('the smaller world'). This process is illustrated in Figure 2 below.

The study did furthermore show that the institutional 'push and pull' had more elements that we related to Scott's (2014) normative pillar and culture-cognitive pillar whilst there were fewer elements from the regulatory pillar. This institutional work had to be done both internally within the firm as towards the partner firms. Humlegården did actively engage in sustainability issues communicating their (normative) norms and values when interacting with customers. They did furthermore worked actively with trying to get their partner firms to share their beliefs as well as how to organize their work (i.e., the cultural-cognitive pillar). This process became central in Humlegården's striving for a TBSS that allowed them to act more sustainable.
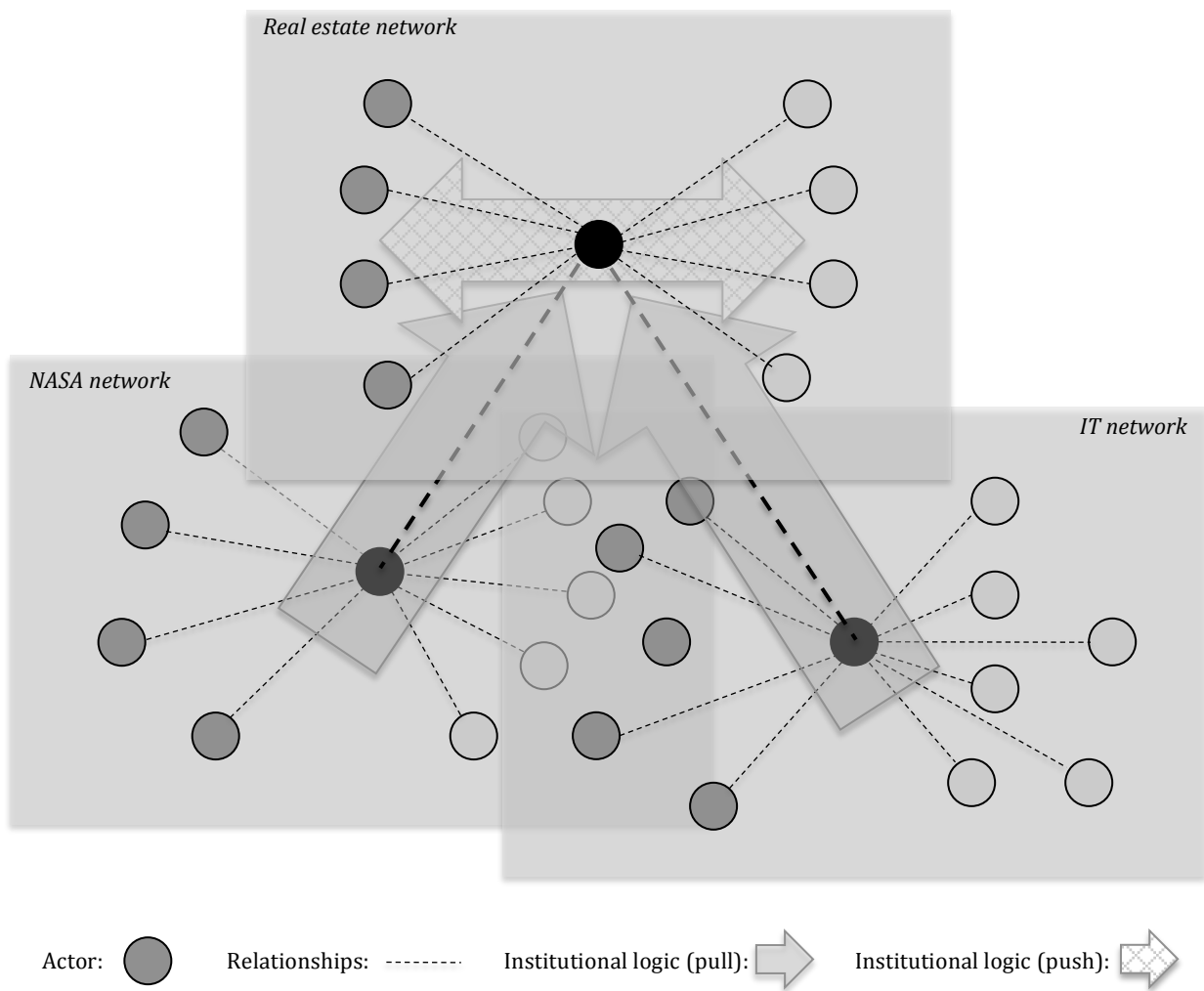
Figure 2. Industry networks ('small worlds') and the push and pull of institutional logics

CONCLUSIONS AND IMPLICATIONS

We did in this study set out to understand what abilities B2B firms needed to develop technology-based self-services (TBSSs). A major challenge with these customer offerings and value propositions is that they require several competences and resources to harmonize. The resulting *4I framework* incorporates IMP and S-D logic thinking as a mean to transcend the internal versus external perspectives on abilities. Basically, firms that introduce a innovation will not only need to break from path dependencies originating in prior resource adaptations – they will also need to engage in changing mindsets imprinted by former institutional logics.

The study's result – the 4I framework – span from the *infrastructure* (holding operand and operant resources) via *integration* (where the resources are combined and utilized both within and external to the firm) to the *interface* where the customer is exposed for the TBSS (and where the potential value-in-context takes place). We further propose that the 4I needs to be considered in its environment which are made up of the customers (that sets the bar for when value-in-context is achieved) and current *institutions* (where some institution may drive the

development of sustainable TBSS and others inhibits them). The framework raises both theoretical and practical implications.

The study highlights the need for developing multiple competences and acquiring different forms of resources when building a new firm ability as described in earlier research of services in networks (see e.g., the classification of Madhavaram & Hunt, 2008). However, most abilities are interlinked and developed in tandem why they must be considered fluid rather than as distinct categories. This offers a research opportunity: given that services aimed at sustainability will be built on competences beyond marketing, what role can marketing take and how will this role develop over time? How are a firm's networking ability connected to the different functions within the firm? The study reviled that the focal firm had developed a marketing function to deal with the customers on an everyday basis but that the firm's customer-focused transcended the marketing department (e.g., into the technical department). Thus, further longitudinal studies are needed to understand how the marketing function evolves when developing TBSSs in technology savvy firms.

The 4I framework also offers managerial guidance for firms that have limited experience with developing and managing TBSS embedded in their business processes. The framework describes how resources and competences are developed and hierarchal structured but it also puts the needed abilities in a context. It will be the customers, that in the end, decides if value-in-context has been reached or not. Thus, establishing a dialogue with customers as a mean to estimate the value potential of a sustainable TBSS is vital.

The results also indicate that sustainable TBSSs require the firm to evaluate how operand resources (e.g., facilities) can offer operant resources (e.g., information about customer behavior). Doing this will not only require the firm to develop its operand and operant resources, it will also require active networking where the partner firms not always understands what to accomplish. Thus, the competence building that takes place in the firm must either be matched by abilities within the current partner firms ('in the smaller world') or by forming new business relationships in other networks (i.e., 'in the wider world'). Some partners will respond well to these challenges, and in the long run, end up with a reference customer that can be displayed to other potential customers, but others will not be able to deliver and hence miss the opportunity to participate in the developing network.

Finally, this study indicates that firms engage in institutional work when trying to introduce an innovation in its network. Following Scott (2014) we can expect that this both follow a controlling (regulatory) trajectory or a more cognitive and cultural (e.g., values and perceptions) trajectory. We believe that a network's dominant institutional logic can explain successful innovations as well as disruptive technologies. This study does further indicate that whilst IMP research has a firmer foundation that S-D logic, the IMP literature can benefit from including the effects of institutions on B2B networks.

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