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The Role Of Social Capital In Managing Relationships With eCommerce Suppliers

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Abstract

Contemporary E-Commerce solutions are often developed and delivered in inter-firm setups that involve various business partners. Being characterised by innovative, ill-structured tasks and using new technologies to develop new business models and services, E-Commerce projects and the subsequently resulting relationships with business partners are demanding and challenging to manage. Surprisingly, project and partner management issues in E-Commerce remain largely unaddressed. This paper takes an inter-firm perspective and addresses the social dimension of E-Commerce relationships. Social capital theory, referring to the value of social relationships and networks, is used to guide this research. Based on findings from case study research, different types and episodes of E-Commerce supplier relationships are distinguished, each calling for a different role of social capital as the basis for effective inter-firm collaboration. By applying social capital theory the study enhances the understanding of E-Commerce as a network-based business as well as the general understanding of the social aspects in relationship management, which to date is largely dominated by concepts like trust and culture. The paper presents a comprehensive framework of social capital in E-Commerce relationships and points out some management implications.

1 Introduction

Information becomes increasingly important in today's economies and likewise information-based services play a vital role in the portfolios of companies. Web-based services become more and more important and the sophistication and complexity of E-Commerce offerings is altered with the maturing of the sector. In this paper it is argued that the success of Business-to-Consumer E-Commerce ventures is not only dependent on a marketable value proposition or a viable business model, but that managing the networks of E-Commerce partners is equally important. Contemporary E-Commerce solutions are often developed and delivered in multi party setups that create network business models with new roles for the participating companies resulting in both novel electronic and but also organisational networks [22]. With a general trend towards inter-firm partnering [4], a growing need and willingness to outsource and jointly develop IT

services [14], as well as the informational nature of E-Commerce services that allow for syndicated and electronic distribution [24], E-Commerce requires a twofold networking perspective: not only are electronic networks used for the delivery of services, services are increasingly developed and delivered based on organisational networks.

1.1 A Relationship Management Perspective

As for other areas, management in this context needs to adopt a relationship management perspective. Drawing from recent work on IT outsourcing, Kern and Willcocks state that the “concern for management has been how to (...) manage the relationship to achieve the outsourcing objectives.” [12]. Relationships with IT suppliers to jointly develop E-Commerce applications need dedicated management attention and require the adoption of a partnership perspective (cp. [14]).

Since inter-organisational relationships are complex multi-level setups [11], scholars have distinguished different dimensions for analysis and research. Lee et al. separate economic, strategic and social dimensions of IT outsourcing relationships and argue for a holistic view to fully understand their functioning [14]. Whereas the economic dimension is concerned with economic benefits like cost efficiencies and transaction costs, the strategic dimension comprises goals, resources, technologies and ultimately all factors that contribute to achieving collaborative advantage. While scholars have drawn attention to these two perspectives in E-Commerce by discussing transaction cost implications, strategies, business models, and technologies, the social dimension remains largely unaddressed. The social dimension takes into account the importance of people working in an inter-firm relationship; it comprises trust, social ties and team building issues.

1.2 Social Dimension Of Inter-Firm Relationships

This paper focuses on the social dimension of relationships with IT suppliers in the E-Commerce domain. Inter-firm relationships, especially joint development projects, can become complex social arrangements. Projects between E-Commerce companies and their suppliers, aiming to develop services, technologies, and software, require knowledge and expertise that is typically dispersed among several people from different functional areas in the collaborating firms. Hence, managers have to deal with a network of people from different backgrounds and their integration into teams. The study deliberately takes the position that social relationships are important in relationships with E-Commerce suppliers. This does not only apply to joint development projects, but also to the resulting supplier relationships for the subsequent service delivery.

Collaborative development tasks in E-Commerce are often complex and ill-structured. Project work thus cannot be (fully) specified *ex ante* but has to rely on alignments between individuals throughout the joint project. For complex tasks, it is important that group members are able to agree on what those tasks are and who will perform them [15]. For doing so, they need to develop a shared understanding about the tasks at hand. The social dimension of inter-firm relationships thus is especially important in the presence of ill-structured tasks. And while achieving effective group work is a difficult task within companies, it becomes even more challenging in an inter-firm setup where people come from different organisational backgrounds [23].

Furthermore, inter-organisational relationships cannot be fully governed by contracts due to a high proportion of non-contractible issues [5]. Since it is often too costly to cover all

possible situations in contracts, the relationship itself has to provide the security for the collaborating partners [10]. Especially in E-Commerce with its ever-changing technologies and the dynamics of business models, supplier relationships require ongoing adaptations that cannot be laid down in contracts. Inter-personal relationships play a significant role in stabilizing these rather fragile arrangements on the basis of trust and bonding.

However, research on the social dimension of inter-firm relationships to date is largely limited to trust issues. But this perspective is restrictive in that it does not take into account cognitive issues like a shared understanding among individuals. This study uses social capital as a more holistic concept. The capital metaphor suggests that organisations can invest in relationships with the prospect of deriving collaborative benefits. It also takes into account that features such as trust, commitment and a shared understanding need time to develop, hence the notion of investing into social relationships that provide benefits in the long run.

2 Social Capital

Social capital theory is an emerging body of concepts that acknowledges the inherent value of social structures such as relationships, networks and groups. Social capital refers to the value of membership in a social group and the benefits individual actors derive from their social relationships (e.g. [1]). From an organisational point of view, social relationships function as valuable resources that enable individuals to act as groups and to undertake complex actions like joint knowledge work [20]. Consequently, social capital can be seen as a necessary complement to human capital in enabling joint tasks and achieving organisational goals [8]. Whereas human capital refers to the knowledge and capabilities of individuals, social capital takes into account the social fabric to empower individuals to collaborate effectively.

2.1 Perspectives And Unit Of Analysis

Social capital can be defined and applied on different levels of analysis, such as organisations, groups and individuals [6]. Individual-level social capital refers to the benefits that a single actor derives from social relationships or a particular position in a social network. Group-level social capital refers to the benefits of social relationships among individuals in a social collective in facilitating social action [1]. In this study, the unit of analysis is the inter-firm relationship, in particular the individuals and teams engaged in joint action at the borders of two organisations. Looking into different kinds of inter-firm relationships, one facet of this study was to find out about the nature of social capital that is required in different types of relationships. Whereas some relationships only require relationships between certain boundary spanning individuals, others need group-level social capital to enable collaboration in teams.

2.2 Dimensions Of Social Capital

Social capital derives from different features of social structures. Three general dimensions of social capital can be distinguished [20].

Firstly, the *structural dimension* of social capital comprises the connections of a social actor or a social group that provide the basic opportunity for collaboration [1]. Another proposition is that through social relationships people get access to resources like information that are held by others. Social relationships in and between groups thus constitute information channels allowing people to exchange information, which is a basic prerequisite for knowledge creation and thus any complex innovative work [20].

Secondly, the *relational dimension* of social capital refers to the willingness of people to act collaboratively. On a group level this means subordinating individual desires to group objectives [13]. The dimension comprises trust and obligations. Individuals need to trust to be willing to collaborate with others. Trust is defined as the willingness to take a risk or to accept the vulnerability towards others in an interaction (e.g. [16]). Obligations are created by acting collaboratively towards others. Obligations can function as social credits and ensure motivation to behave collaboratively in the future. This is referred to as the generalized reciprocity based on mutual obligations, which positively reinforces cooperative behaviour [21].

Finally, the *cognitive dimension* refers to the ability of people to act together; it comprises issues like shared understanding [20] and collective goal orientation [13]. People have to align their mental models and to establish a shared language to be able to collaborate (be it in a group or a single relationship). This dimension of social capital acknowledges that human mental functioning is socially situated in its environment and that for effective social action in (work) groups the individuals' mental models have to be aligned, e.g. that people have to find a common ground for interpreting the environment through communication [7]. Social capital in this sense derives from the level of socially shared cognition in a work group that is an important determinant of its effectiveness [15].

This study explores whether different inter-firm relationships show differences in the nature of the required social capital, e.g. what type of social capital is needed in different relationships.

2.3 Social Capital Outcomes

The benefits of social capital are basically twofold: Individual-level social capital enables the social actor to access resources like information possessed by other actors. This is referred to as the allocative efficiency of social capital [20]. On the other hand, group-level social capital facilitates social action among group members in that it motivates and enables collaborative behaviour (adaptive efficiency). Hence, social capital has informational and collaborative benefits. Informational benefits are related to information flow and exchange. Individuals are able to access information and groups are able to process information effectively when they possess sufficient social capital, especially in terms of a shared understanding. On the other hand, the collaborative benefits of social capital comprise the willingness and ability of group members to act together. The collaborative ability results from trust, motivation and, again, a shared group understanding.

3 Research Approach And Cases

The underlying assumption of this study is that social relationships matter and that it is sensible for collaborating organisations and their managers to 'invest' in relationships. It

aims to explore the nature of social capital and its role dependent on the type and characteristics of different inter-organisational relationships. Although some scholars mention the relevance of social relationships (e.g. [19, 25]), only few empirical studies have been conducted so far [12, 11]. This study is different in that it focuses more narrowly on the role of social relationships, while at the same time exploring the differing role of social capital across a variety of inter-firm relationships. The research question is: *What is the role of social capital in different E-Commerce supplier relationships and what are the contingencies?*

3.1 Qualitative Case Study Research

Since there is only little prior understanding regarding the social aspects of inter-firm relationships, a qualitative, exploratory case study was conducted. The empirical enquiry started with rich semi-structured interviews [9] with two managers responsible for large E-Commerce solutions and thus in charge of the corresponding relationships with IT suppliers. These interviews led to a further sampling to conduct the same type of interview with managers on the supplier side. Although explorative in nature, the interviews were based on a pre-designed interview roadmap specifying relevant areas to guide the interviews. It incorporated context of the relationships including history, goals, and other descriptions, as well as questions regarding social relationships and group issues. Although organised around the structure and dimensions of social capital theory, questions aimed at exploring rather than explicitly addressing issues to avoid leading the interviewees. Interviews were tape-recorded, transcribed and coded, starting from the concepts in the interview roadmap. In doing so, the inter-firm relationships were characterised in several dimensions such as type of E-Commerce services, project characteristics, criticality of services, symmetry of partners, strategic relevance etc. In a similar way, evidence for social capital in the relationships was extracted using categories that were derived from the conceptualisation of the theory. The analysis was undertaken using cross-case analysis techniques for exploring relations between relationship characteristics (and other possible contingencies) and social capital attributes (using tables and displays, based on [17]).

3.2 Case Companies

The study was conducted with two European companies focusing on their E-Commerce supplier relationships: Firstly, FINANCE¹ provides an online banking, brokerage and finance portal for end customers. As such, FINANCE concentrates on managing the customer contact and sources most of its financial and web services from suppliers. Not only are the operations largely outsourced, the initial development was also carried out in cooperation with a range of partners. Secondly, TELCO, a large telecommunications and Internet service provider, is the second largest in its market challenging the incumbent provider. TELCO as a full service Internet provider offers end customers dial-in services like ADSL and ISDN, as well as a content-based web-portal with online shop. In doing so, it manages a network of suppliers that contribute telecommunications infrastructure, various web services as well as consultancy and development.

¹ Names of companies have been changed to ensure anonymity.

4 Case Analysis

After the first interviews with FINANCE and TELCO a preliminary analysis was carried out. Drawing from segmentations that the managers used to differentiate their E-Commerce suppliers, the role of social capital was found to be somehow dependent on the type of E-Commerce service and the corresponding supplier relationships. Consequently, these segmentations were used to select suppliers for the second round of interviews. The main analysis however, carried out afterwards revealed that the role of social capital was determined by a more complex interplay of variables, rather than simply based on the type of service or supplier. The segmentation of services and the sampling are presented first.

4.1 Relationship Segmentation And Sampling

FINANCE segmented its suppliers regarding strategic relevance: 20% were highly strategic with suppliers deeply integrated; 30% represented a middle range characterised by alternating periods of collaboration and low activity; and finally 50% were non-strategic relationships. A typical strategic supplier is BANK, responsible for the core banking services. The Internet consultancy WEBCONSULT is a typical middle range supplier providing various consultancy services, but also responsible for the development of the user front end of the web solution. A typical non-strategic partner is CONTENT, a web content provider supplying customized online newsletters for FINANCE customers. This relationship is characterised by low relation specific investments and low barriers to switching.

TELCO differentiates its E-Commerce suppliers in a similar way: High priority partners provide core services with 24 hour availability and 15 minutes recovery time. Typical partners are WEBCONSULT, responsible for web server hosting and INFRA-NET, delivering network and dial-up infrastructure services. The second group of partners delivers important, but non-core services that do not require the same 24 hour availability and thus are different in terms of inter-firm process setups. A typical partner is DEVELOPER that developed and maintains the online self administration portal for TELCO customers. The third group of services is those with low criticality: the content provider E-NEWS provides online news content and maintains the online discussion forum on the TELCO web site.

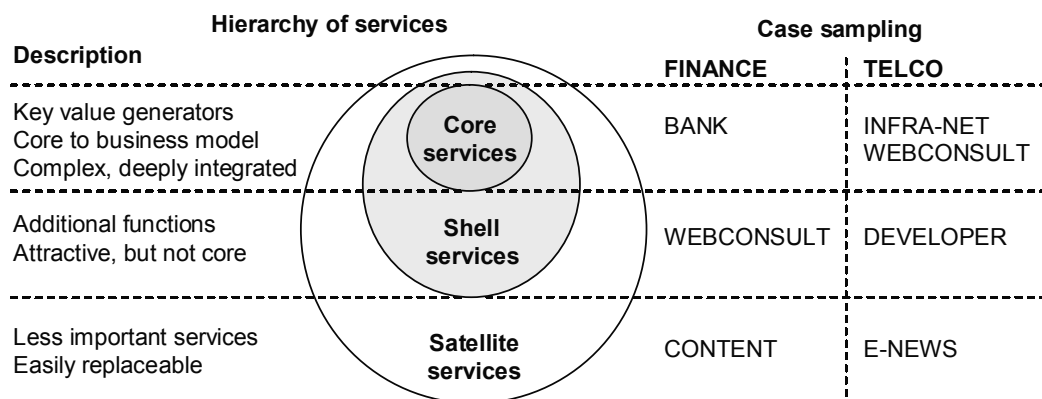


Figure 1: Hierarchy of E-Commerce Services and Case Sampling

Drawing from these segmentations, a three layer hierarchy of E-Commerce services was derived with a segmentation of suppliers providing these services (see figure 1): core services are key to the company business model and comprise primary services, e.g. banking, network and infrastructure services; shell services provide additional, value adding services and a ring of satellite services supplement services (like secondary content services) that can be replaced more easily. Relationships in the three segments were found to be distinctly different in terms of strategic relevance, frequency of interaction, and joint tasks. Hence, one company in each group was selected for closer examination.

4.2 Contingency Model Of Social Capital Relevance

Starting from the initial proposition that the type of service and the resulting relationship affect the role of social capital, the cross-case analysis revealed that social capital was dependent on an interplay of three variables: Firstly, the relationship episode was identified as the main dividing variable, with project phase and routine/operations as the two episodes. Secondly, within the project phase the complexity of the joint tasks determined the role of social capital. Thirdly, social capital varies with the strategic dependency between customer and supplier in the operations phase.

The project phase is the initial stage of a supplier relationship where new business models or E-Commerce services are developed. The transition from project to routine phase marks a change in that detailed service level agreements are formulated to govern the subsequent service delivery. Within the project phase, the role of social capital depends on the task complexity. Generally, tasks can be distinguished according to their degree of standardization, with well-structured tasks on the one hand (e.g. well specified customization projects) and truly innovative, ill-structured tasks on the other hand [18]. For well-structured tasks, the resulting project can be ex ante subdivided into work packages and work can be done largely independently and coordinated based on the performance of well-defined outcomes. However, services that are specifically and jointly designed by customer and supplier are usually innovative, which leads to high task interdependence between the two organisations. Consequently, tasks require intensive interactions and collaboration among the employees from the partnering companies. This context was found to require rich group-level social capital to provide motivation and a shared understanding as a prerequisite for collaboration.

After the completion of joint projects, the supplier role was found to change from being a development partner to being an outsourcing provider with the establishment of more formalized inter-organisational processes. Here, relationships with strategic partners were found to require greater social stabilization and richer social capital than relationships with low operational integration. Figure 2 presents the contingency model; the next chapters report on the case findings.

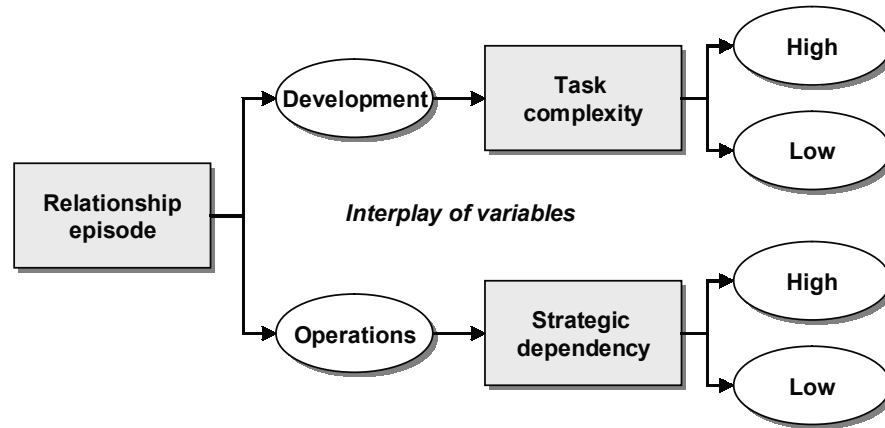


Figure 2: Two Level Contingency And Interplay Of Variables

5 Role Of Social Capital In Joint Development Projects

An example of a project with ill-structured tasks is the FINANCE start-up project that involved, among others, the design and implementation of the banking services (sourced from BANK) and the web platform (developed with various partners including WEBCONSULT). In the TELCO case, the projects with WEBCONSULT and INFRA-NET, as well as the partnership with DEVELOPER were characterised by high complexity of joint tasks. The projects to setup the content delivery solutions with CONTENT and E-NEWS were both characterised by rather well-structured tasks.

5.1 Ill-Structured Tasks Require Rich Group-Level Social Capital

Ill-structured tasks in the development phase were found to require rich social relationships and team structures as a basis for collaboration. The setup of the FINANCE business involved designing and implementing the business model, as well as its operations, IT architectures, and software systems. It was a new type of project for many of the participating people, especially because of the novelty of E-Commerce at the time (in early 2000). This led to a high level of ambiguity and uncertainty in the project. Tasks were ill-structured with the project venturing into an innovative area requiring ongoing inter-personal discussions and alignments to define and agree upon project tasks with continuous adaptations throughout the project. To be able to engage in these discussions, it was paramount for people to establish a shared understanding and to learn to understand each other. Personal relationships among employees were found to be crucial and had to be established and encouraged by the management early in the project. In doing so, it was important to give employees time and opportunities to meet and build social relationships to develop the required joint understanding as a group. A similar picture was drawn by the managers in the TELCO case. Learning to collaborate in the beginning of a new project was seen as a necessary prerequisite for effective collaboration. People had to get to know each other, establish relationships and learn how to deal with each other. According to the TELCO and DEVELOPER managers, the quality of social relationships in complex inter-firm projects crucially contributed to the overall performance and success of the development projects.

As Clark and Brennan argue, two people or a group cannot begin to coordinate a complex task “without assuming a vast amount of shared information or common ground – that is mutual knowledge, mutual beliefs, and mutual assumptions.” [7]. In the same way Levine and Moreland state: “(work) groups function best when their members view the world from a common perspective.” [15]. This is especially important when tasks allow for execution in many ways, or when the right way is yet to be found. In this case, it is important for group members to agree on what those tasks are and who will perform them [15] And to be able to do so, team members need to share a common understanding about the tasks and the group. Even more so, when the task involves extensive creation of new knowledge as is often the case in E-Commerce software and service development. Consequently, people in inter-firm setups who come from different backgrounds and have different views of the world, have to find a shared cognitive basis for their collaborative work.

Another facet was that complex and innovative tasks required people to bring in a diverse set of knowledge and capabilities. Diversity however was found to challenge the motivation for collaborative behaviour. In the TELCO case, it was reported that IT people were often engaging in competitive behaviour when insisting on a particular way of solving software development issues. Establishing social relationships early in the project as a basis for the joint work reportedly reduced this egoistic and opportunistic behaviour with people more likely to understand each other and engage in collaborative behaviour. As Anand et al. report, members of teams with diverse professional backgrounds and knowledge generally face the challenge of integrating their knowledge and are likely to have higher levels of social uncertainty than homogeneous teams [2].

It can be concluded that ill-structured tasks, as prevalent in the cases, require investments in group-level social capital to enable effective collaboration, especially in terms of the cognitive dimension of social capital. Social capital was found to play a vital enabler role providing the necessary connectedness, shared understanding as well as the motivation that is necessary to contribute to joint work. It also reduces opportunistic and competitive behaviour.

5.2 Social Capital Supports Well-Structured Projects

The setup of content delivery services in the CONTENT and E-NEWS relationships was found to be rather standardized and thus the work was well specifiable. Both suppliers customize and syndicate standard content and services to various clients. They are thus typical E-Commerce players in the marketplace [24]. The interdependence of tasks between the companies was very low and hence, social capital played a less important role in the project.

The role of CONTENT was to produce a customer specific online newsletter to be delivered to FINANCE’s end customers. The initial project involved the planning and design of the news content, the production of a pilot version as well as the technical implementation, where CONTENT customized its online delivery system to create an interface with the FINANCE systems. Both tasks did not require joint team work apart from initial meetings to discuss and agree upon details. Consequently, roles were perceived as being clearly separated between customer and supplier, with CONTENT employees working independently to meet FINANCE’s requirements. A similar picture was drawn in the other case where E-NEWS syndicates its real time news content and its discussion forums to the TELCO web platform. The initial project was mainly concerned with selecting news services from the E-NEWS portfolio and customizing the technical systems to allow for real-time integration between the E-NEWS content management

system and the TELCO web system. Again, work could be well specified in initial meetings and development did not require joint team work.

Consequently, well-structured tasks were found to require a much more limited role of social capital. With no need for intensive investments in group structures, social capital was only found to contribute on an individual level. Bilateral social relationships between responsible technicians, software developers, and project managers were found to improve communication and information flows. A good personal relationship was quoted to have a positive impact on the motivation to work together and to spend time on the project. It provided the people with a better understanding for each other and was important for the supplier to know the customer's needs and to adapt to requirements. It can be argued that social capital plays a supporter role in well-structured projects, but is not paramount for success.

Table 1: Role Of Social Capital In The Project Phase, Dependent On Task Complexity

	Ill-structured tasks	Well-structured tasks
Type of social capital		
Individual level	Individuals need social capital to be part of informal information flows.	Bilateral relationships between people support effective project work.
Group level	Groups need to derive shared understanding to be able to collaborate on ill-structured tasks.	Not necessary.
Relevance of social capital dimensions		
Structural	Densely woven social networks enable effective information flows.	Merely bilateral social relationships.
Relational	Social relations strengthen motivation to contribute to collaborative work and reduce egoistic/opportunistic behaviour.	Having a good personal relationship is motivating for working together and spending time on the project.
Cognitive	Ill-structured tasks require alignment of mental models and shared understanding to evolve; enables effective collaboration.	Good relationships allow people to better judge each others' behaviour (predictability).
Outcome		
Informational	Social networks play important role in effectively distributing information.	Accessing information from people in the partner organisation easier with good relationship.
Collaborative	Social relationships provide collaborative ability on individual and group-level.	Better bilateral understanding and predictability.

6 Role Of Social Capital In The Operations Phase

When suppliers were deeply integrated into the customers operations, the customer was found to be strategically dependent on the performance and service quality of these suppliers. Examples are the FINANCE partnership with BANK, and the TELCO relationships with WEBCONSULT and INFRA-NET. All other services were less strategic with the supplier typically providing a service (e.g. content delivery) or maintaining a software solution. FINANCE for example was not strategically dependent on WEBCONSULT after finishing the web site development project. Consequently, abandoning such a relationship was seen as being possible at any time.

6.1 Strategic Relationships Call For Social Stabilization

Although service delivery in E-Commerce is mainly based on electronic network linkages and usually highly automated, personal relationships were found to match those electronic linkages for the purpose of social stabilization. Strategic relationships were reportedly stabilized by nurturing social relationships with key employees in the supplier organisations. Especially in the transition from project to operations phase, new personal relationships had to be established. Although project managers could capitalise on existing relationships with each other, technical and operations people, responsible for the day-to-day business but not (directly) involved in the initial project, had to become connected, too. In the TELCO case, emergency and service recovery processes were especially important. TELCO operates an 'on-call-process', where supplier people have to be available 24 hours a day to be contacted via email, SMS or mobile phone. Since supplier people were found to be a crucial component in this process, good personal relationships between customer and supplier employees were crucial to ensure quick and pragmatic service recovery. TELCO recognised that nurturing those relationships contributed to smooth operations.

Social relationships yielded benefits such as better motivation of supplier people resulting in better overall service quality. Not only did personal relationships provide the supplier people with a better knowledge of the customer's problems, they were also more likely to spend time on the customer contract or to make an extra effort to help and solve problems when they were engaged in positive personal relationships with someone in the customer organisation. But these relationships also benefit the supplier organisation: the customer is satisfied and the contract is stabilized and safeguarded. Social relationships are thus a valuable resource for both parties. Whereas inter-firm operations might work without good relationships, social capital was found to be positively related to relationship outcome and playing a supporter role. Social capital was individual level and mainly relational with trusting relationships contributing to motivation and commitment. It also contributed to better information flows between the organisations.

6.2 Social Capital As Potential For Future Activities In Non-Strategic Relationships

In the operations with non-strategic partners, such as WEBCONSULT and CONTENT in the FINANCE, and DEVELOPER and E-NEWS in the TELCO case, social capital was found to play a minor role with personal contacts restricted to a few people. DEVELOPER for example established a formal maintenance relationship with TELCO based on a service level agreement that today only requires minimal direct interaction in the day-to-day business. Nevertheless, the DEVELOPER manager was still interested in maintaining personal contact with his TELCO counterpart, motivated by the prospect of further activities together. A similar picture was drawn by the other managers. Such relationships can be interpreted as a form of key account management based on the intention to increase the contract and to participate in future activities. The social relationship thus is mainly to stay in contact and to be informed about new developments. Nevertheless, maintaining these relationships can also be beneficial from the customer standpoint, with reduced search and project setup costs in case of new activities. This was explicitly mentioned by FINANCE, who acknowledged the value of a loose web of social connections. To conclude, social capital mainly plays a 'lubricant' role, allowing for access to new business or likewise to experienced suppliers. While not significantly

contributing to current operations, it functions as a potential with future benefits and is based on weak social ties with mainly informational benefits.

Table 2: Role Of Social Capital In The Operations Phase Dependent On Strategic Relevance Of Relationships.

	Strategic relationships	Non-strategic relationships
Type of social capital		
Individual level	Social relationships between people in the inter-firm relationship support operational processes.	Weak social ties to stay in contact. Social capital as future potential; may be part of key account management approach.
Group level	Not necessary.	
Relevance of social capital dimensions		
Structural	Merely bilateral social relationships.	Bilateral social relationships between individuals of the two companies as future potential.
Relational	Having a good personal relationship is motivating supplier personnel to pragmatically and quickly solve problems and spend time on the project.	Not necessary.
Cognitive	Supplier personnel know customer problems and needs (predictability).	Not necessary.
Outcome		
Informational	Accessing information from people in the partner organisation easier with good relationship.	Supplier accesses information about future activities at the customer end. Customer able to reduce supplier search cost.
Collaborative	Better motivation and thus better collaborative behaviour and commitment.	Not necessary.

7 Framework And Management Implications

Drawing from the case findings, social capital was found to play three different roles in E-Commerce supplier relationships. Firstly, group-level social capital played an enabler role in complex projects enabling collaboration on ill-structured tasks. Without sufficient group structures to ensure trust, motivation, and a shared understanding, effective collaboration in joint teams is unlikely to happen. Secondly, in non-complex projects with well-structured tasks as well as in the operations phase of strategic relationships, social capital played a supporter role. Here, the inter-firm relationship might function without this social capital, but it was found to positively affect project outcomes and service quality. Finally, in non-strategic supplier operations, social capital was rather unimportant. It was nevertheless found to play a lubricant role providing certain potential value for future activities between the two organisations. Supporter and lubricant type social capital is largely individual-level, based on bilateral relationships between individuals across the organisational boundaries. Table 3 integrates the findings in one comprehensive framework and connects them with the initial segmentation of E-Commerce services.

Table 3: Final Framework

E-Commerce services delivered by supplier	Project & development phase		Routine & operations phase	
	Description	Role of social capital (SC)	Description	Role of social capital (SC)
Core: Core solution and critical applications	Joint design and implementation of often novel and innovative E-Commerce solutions.	ENABLER: Group-level social capital enables collaboration through trust, motivation, and shared understanding as well as effective information flows.	Supplier integrated in day-by-day service delivery/operations. Exception handling processes crucial.	SUPPORTER: Individual-level SC ensures information flows and motivation, stabilizes relationship.
Shell: Additional services with 2nd rate criticality			Standardised service delivery, usually entirely automated using electronic linkages (e.g. web content delivery).	LUBRICANT: Individual-level social capital as potential for future activities and for reducing search and project setup cost.
Satellite: Non strategic services, e.g. content syndication	Well-structured product/service customization according to customer specifications.	SUPPORTER: Individual-level SC allows for effective communication, motivation and predictability.	Maintenance of solution, small changes and improvements.	

This study revealed that inter-personal relationships play a significant role in inter-firm collaboration in IT-related supplier relationships. Drawing from the relationship segmentation (see table 3), the findings suggest that managers should take care of social capital according to the requirements of a particular relationship, especially in case of ill-structured tasks. This comprises both managers’ individual social capital, as well as social capital among the employees of joint work groups. The underlying rationale is to facilitate social relationships as the basis for effective day-by-day interactions. In other words, social capital investments are directed to create and maintain a social network that spans firm boundaries to facilitate information flows and collaborative action.

However, managers face the dilemma that social capital is most urgently needed when it is least likely to be present, that is at the beginning of a joint project where people from both organisations first meet, but are expected to immediately collaborate in complex design tasks. Consequently, managers have to pay attention to social capital investments at the very beginning of an inter-firm venture. In doing so, they face a second dilemma in that it is hardly possible to invest in social capital directly. Social capital is a by-product of social interactions [20]. It is created through collaborative and authentic behaviour and has to evolve over time and cannot be forced. Especially a shared understanding cannot be prescribed or designed. Nevertheless, managers can indirectly invest in social capital by creating the right environment and influencing the opportunities for social interactions to take place.

It is thus important to bring the relevant people together early enough. Start-up workshops and other joint events help in facilitating social contacts. Here, collocation is especially important to provide a rich environment for face-to-face interactions that are necessary to build group-level social capital in the beginning of new projects. This cannot be done by electronic communication alone, because of a lack in media richness to deliver all the needed non-verbal and visual cues that are easily observable in face-to-face

settings and that are necessary in establishing common ground and a shared understanding [3]. On the other hand, in reducing misinterpretations, the presence of social relationships turned out to be important for effective electronic communication to actually work. Early collocation was thus directly related to project success when dealing with ill-structured tasks. Since remote collaboration is prevalent in almost every inter-firm relationship with the collaborating companies seldomly located in the same place, managers need to pay attention to collocation and opportunities for relationship building. Especially since tight project schedules and day-by-day business are often the biggest barriers to social capital investments.

8 Conclusion

Since little prior research was available, this study took an explorative and theory building approach. Based on two cases and a set of different E-Commerce supplier relationships, the analysis revealed a two level interplay of variables to explain the role of social capital in the inter-firm relationships. The main contribution of this study is a framework to distinguish different roles of social capital.

However, the study has certain limitations. First of all, the generalisability of findings is limited by the fact that only two, albeit quite typical cases were researched. The general segmentation and the framework may be transferable to other case settings, but a replication of the research to other case settings should add further insights, especially since a subsequent study could already use the framework. A second limitation is that the study aimed at gaining a general understanding of social capital in relationships and was limited in the depth of researching certain aspects. Further studies could focus on single dimensions of social capital and thus gain deeper understanding of issues like cognitive processes in complex IT projects.

On the other hand, it can be expected that other IT-based relationships outside the E-Commerce domain show quite similar characteristics and thus would allow for the application of the framework. Inter-firm relationships are generally fragile and challenging arrangements, in particular when it comes to complex tasks. Understanding the social dimension is important and social capital theory turned out to be valuable to inform this research. Furthermore, the interviewees connected well with the capital metaphor and the idea of social relationships as a form of investment when being introduced to the idea at the end of the interviews. An application of social capital theory to other areas of information systems research seems promising.

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