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Structuring the structure in outsourcing research

A social network perspective on outsourcing relationship management

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ABSTRACT

To what extent are structural assumptions veiled in extant outsourcing research? In this paper we suggest a unified view on social ties between individuals in outsourcing relationships. In a comprehensive literature analysis of outsourcing research since 2001, we identified structural assumptions and categorize them based on social network measures. Our analysis uncovers two salient patterns: 1) The *gatekeeper vs. high density* trade-off in interaction between client and vendor employees, and 2) the question whether the *strength of ties* between individuals can be too high for a professional outsourcing relationship. We present these patterns and other social network structures to formalize assumptions mostly not explicated yet considered important in existing outsourcing research. Based on our results, further research should analyze the impact of these patterns of social structure on outsourcing success.

Keywords

Outsourcing, relationship management, social network structures, client-vendor relationship

INTRODUCTION

Research on outsourcing has highlighted the importance of outsourcing relationship management (Goles and Chin, 2005; Goo, Kishore, Rao and Nam, 2009; Lee and Kim, 1999) for outsourcing success and encompasses factors like harmonious conflict resolution, trustful communication, and relational norms (Goo et al., 2009; Lacity, Khan and Willcocks, 2009). Dibbern, Goles, Hirschheim and Jayatilaka (2004) have shown that the individual or group level of client vendor relationships has not been in focus of research. Thus, an interesting research challenge remains in disclosing the underlying mechanisms of how client and vendor interaction patterns affect success and how relational governance mechanisms should be designed.

A quite common underlying theme in research on outsourcing in general and outsourcing relationship management in particular is an implicit or explicit focus on communication and interaction structures and the associated knowledge flows (e.g. Levina and Vaast, 2008; Oshri, van Fenema and Kotlarsky, 2008; Ramasubbu, Mithas, Krishnan and Kemerer, 2008; Vlaar, van Fenema and Tiwari, 2008). In this paper, we adopt and extend this view to unify important insights on outsourcing relationships offered by the existing literature. We suggest that the research of client-vendor relationship patterns and the underlying social interaction structures offer promising potentials to broaden our understanding of successful outsourcing relationship management. Precisely, we believe that there are certain social network structure characteristics in outsourcing relationships that are related with relationship management success. We expect that the existing literature already offers instructive yet unsystematical insights into the gestalt of successful outsourcing relationships. Our guiding hypothesis hence is that *patterns of social network structures are an important but not yet formalized determinant of outsourcing success*. To explore this hypothesis and learn which social network structures are veiled in outsourcing research and warrant further

examination, we reviewed all papers in the six AIS senior scholars' basket journals[1] since 2001 with regard to a) an outsourcing topic and b) implicit or explicit structural assumptions. Drawing on the review results, we can identify common patterns that offer a great opportunity for fresh perspectives on outsourcing relationship management.

We first introduce the literature review approach and the analyzed social structures in outsourcing relationships. Then, we present the results of the review, identify emerging structures and suggest promising avenues for future research on relationship management.

LITERATURE REVIEW APPROACH

To reveal implicit socio-structural assumptions in extant outsourcing research, the review comprises all articles published between January 2001 and December 2009 in the 6 AIS senior scholars' basket journals (MISQ, JAIS, ISR, ISJ, EJIS and JMIS). We searched the journals with a truncated search for "outsourc*" and "offhor*" in title and abstract, yielding 65 articles. We excluded 16 matches which were either non-peer reviewed editorials or did not focus on a classic outsourcing/offshoring situation with a relationship between a client and a service provider (external vendor or captive)[2].

More than half of the remaining 49 papers (55%) used a quantitative empirical approach to yield new findings or to confirm theories, another 31% present qualitative empirical findings, mainly based on case studies. Also, a mathematical approach was used in 8% of the papers, mostly on cost analysis[3]. The remaining 6% of the papers followed a conceptual approach.

Regarding the aspect of outsourcing focused in the papers, we saw a clear importance of the management and influence of vendor-client relationships: 39% of the papers were concerned with this aspect of outsourcing, either as subject of analysis or part of the argument, e.g. in vendor selection. On the other hand, 61% of the papers dealt with other aspects such as decision making (e.g. Berg and Stylianou, 2009; Schwarz, Jayatilaka, Hirschheim and Goles, 2009), cost development (e.g., Cha, Pingry and Thatcher, 2008; Dibbern, Winkler and Heinzl, 2008) or risk management (e.g. Hahn, Doh and Bunyaratavej, 2009).

The outsourcing settings examined in the papers in many cases (33%) concern offshoring scenarios[4], 16% look at domestic outsourcing and 24% combine both perspectives. The remaining 27% of the papers contain no explicit information on the geography of client-vendor relationship.

In their extensive review of outsourcing research Dibbern et al. (2004) point out that the vendor perspective was poorly studied until 2000. As we could see now, it is still far less studied than the client view: 63% of the papers examine outsourcing from the client perspective, while 22% look at both perspectives simultaneously (e.g. Leonardi and Bailey, 2008; Rai, Maruping and Venkatesh, 2009). The vendor perspective by itself is focused in only 3 of the papers; the remaining ones took an abstract view, not focusing on either party.

We analyzed the 49 papers regarding the occurrence of implicit or explicit structural assumptions concerning outsourcing/off-shoring relationships. Structural assumptions manifest in descriptions of structures of communication, knowledge exchange, and trust. They can concern either the macro level (i.e. between organizations) or micro level (i.e. between individuals or teams) of analysis (Dibbern et al., 2004). In our analysis, we focus on the level of interaction among individuals and groups between vendor and client since this is the level relevant for shaping relationship management and where interaction structures are filled with life.

ANALYZING SOCIAL NETWORK STRUCTURES

We found structural assumptions on individual level in 13 of the analyzed papers, which are often explicitly described. However, they are never formalized using social network measures. We strive to unify the view on social structures in outsourcing relationships by interpreting structural assumptions along corresponding network measures. Three types of network measures can be distinguished: *tie measures* describe the nature of links, i.e. the connection between two actors

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[1] The analysis of an extended journal selection will be presented at the conference.

[2] E.g. Arakji and Lang (2007) look at outsourcing video game product development to consumers and Park, Im and Keil (2008) give the outsourcing vendor as blame shifting opportunity in their model on bad news reporting.

[3] E.g., Cha, Pingry and Thatcher (2008) present a mathematical model of the outsourcing decision dependent on production and coordination cost.

[4] We include inhouse offshoring scenarios because they are usually treated similarly in existing literature.

(Tichy, Tushman and Fombrun, 1979), *structural measures* describe characteristics of the network as a whole, and *relational measures* describe roles of actors originating in their network position and their ties (Jansen, 2006).

Tie measures concern the linkage between a pair of actors (Jansen, 2006; Tichy et al., 1979). The meaning of a tie can differ greatly: exchange of affect (e.g. friendship), exchange of influence or power, exchange of information, or exchange of goods and services, which can be further differentiated. We frequently identified a combination of tie measures in the papers that discussed individual communication and collaboration. We found the following measures to be relevant:

- *Clarity of expectations* refers to "the degree to which every pair of individuals has clearly defined expectations about each other's behaviour" (Tichy et al., 1979, p. 508). This is of importance especially when analyzing collaboration between service provider and client (e.g. Dibbern et al., 2008; Rai et al., 2009).

- Many papers mention different levels of communication, knowledge exchange, and trust to appear between actors (e.g. Ho, Ang and Straub, 2003; Kern and Willcocks, 2002). We can describe this as *multiplexity* of ties, which is given when two actors are connected by multiple ties with different meanings (e.g. knowledge exchange and friendship).

- The *frequency* of interaction is also a relevant tie property, as it supports knowledge exchange between client and vendor actors (observed in Vlaar et al., 2008).

- *Intensity* or value measures the strength of a tie (Granovetter, 1973; Wasserman and Faust, 1997) and can be fostered among others by multiplexity and frequency. Intensity appears to incorporate a trade-off, which will be discussed later (e.g. Kern and Willcocks, 2002).

- Another relevant tie measure is *reciprocity*, i.e. the mutuality of a tie as perceived by the two actors (Wasserman and Faust, 1997). For instance, a mutual tie is important for a pair of project managers on client and vendor side (e.g. observed in Koh, Ang and Straub, 2004).

- For effective knowledge exchange, especially in larger networks, the *transitivitiy* of ties is of vital importance (observed in Oshri et al., 2008). If you consider the three actors A, B and C, with ties A-B and B-C, transitivity implies there is also a tie A-C as illustrated in figure 1 (Granovetter, 1973).
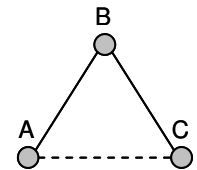

Figure 1. Transitivity

The *structural measure* that we found most often in the reviewed papers (e.g. Cha et al., 2008; Choudhury and Sabherwal, 2003) is *density*, "the proportion of possible lines [i.e. ties] that are actually present" in the network (Wasserman and Faust, 1997, p. 101). Another structural property that was relevant, in particular for exchange of personalized knowledge (Oshri et al., 2008), is the *path length* between two actors. A path between two actors is the shortest connection through other actors and their ties (Wasserman and Faust, 1997).

Relational measures depend on an actor's position within a network. The *gatekeeper* role appeared in patterns described in several papers (Koh et al., 2004; Leonardi and Bailey, 2008; Levina and Vaast, 2008; Olsson, Conchúir, Ågerfalk and Fitzgerald, 2008). A gatekeeper is well connected in its own team (vendor or client) and is the exclusive link to the other team (Tichy et al., 1979), e.g., actor A in figure 2 is a gatekeeper on client side. If this link is not exclusive, we call the actor an *interface actor, e.g.* actors B and C in figure 2 are interface actors on the vendor side. For program managers, another relevant characteristic proved to be prestige (observed in Levina and Vaast, 2008). *Prestige* measures access to and control over critical resources (Jansen, 2006).
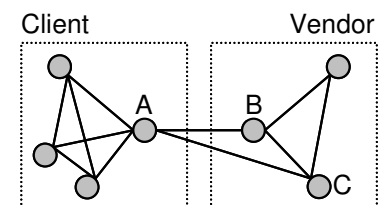

Figure 2. Gatekeeper and Interface Actor

SOCIAL NETWORK STRUCTURE IN OUTSOURCING RESEARCH

Out of the 13 papers which contain structural assumptions on an individual level, most examine certain aspects of outsourcing governance design, e.g. collaboration (Leonardi and Bailey, 2008; Olsson et al., 2008), vendor control (Choudhury and Sabherwal, 2003), or psychological contracts (Koh et al., 2004). Dibbern et al. (2008) is the only exception as they focus on the outcome of outsourcing with their analysis on client extra cost. This section presents the results of our analysis for each of the 13 papers regarding their most important structural assumptions. Table 1 on page 4 gives an overview of the analysis results: we summarize the social network measures observed along with our interpretation from the paper context. To put the measures in context, we list the IT function outsourced and differentiate onshore and offshore settings.

| Paper | Outsourcing setting | | Social network measures observed in the papers | | | Interpretation from paper context |
	IT functions outsourced*	Onshore vs. Offshore**	Tie measures	Structural measures (network)	Relational measures (actor)	
Cha et al., 2008	n/a	Off	Intensity	Density	-	Structural measures avoid knowledge chain disruption. This includes intense knowledge exchange and high density.
Choudhury and Sabherwal, 2003	SW	div	Multiplexity, Frequency	Density	-	Shared goals and beliefs can be established in multiplex relationships, given high density and frequency.
Dibbern et al., 2008	SW	Off	Clarity of Expectations, Intensity	Density	-	Open culture manifests in intensity, clarity of expectations and density.
Ho et al., 2003	div	On	Multiplexity, Intensity	-	-	Too much trust and friendship (multiplexity, intensity) can negatively influence professional relationship through persistence of expectations.
Kern and Willcocks, 2002	div	n/a	Multiplexity, Intensity	-	-	Multiplexity as measure for different levels of communication. Tie must not be too strong (intensity), to keep possibility to cancel the contract.
Koh et al., 2004	div	n/a	Clarity of Expectations, Multiplexity, Reciprocity	Density	Gate-keeper	Project managers are gatekeepers and need reciprocal ties. Stakeholder network analysis is possible with multiplexity (inter-personal and formal tie), clarity of expectations (obligation awareness), and density (knowledge exchange).
Leonardi and Bailey, 2008	NI	Off	-	Density	Gate-keeper	Distributed communication model needs high density. Alternative is the gatekeeper model.
Levina and Vaast, 2008	SW	Off	-	Density	Interface, Gate-keeper, Prestige	Program manager has gatekeeper or interface role with high prestige (access to critical resources), at the same time direct access to business users affords a dense network.
Olsson et al., 2008	SW	Off	-	Density	Gate-keeper	Communication in two-stage offshoring can follow either a gatekeeper model or a high density model.
Oshri et al., 2008	SW	Off	Multiplexity, Transitivity, Frequency	Density, Path Length	-	Short path length, transitivity, and high density needed for knowledge exchange through personalized memories. High multiplexity and frequency improve the exchange.
Rai et al., 2009	SW	Off	Clarity of Expectations, Multiplexity	Density	Interface	Client representative on vendor teams translates to an interface role. Open communication on different levels afford density, multiplexity and clarity of expectations
Sarker and Sarker, 2009	SW	Off	Multiplexity, Frequency	-	Interface	The person responsible for the relationship has an interface role. High frequency of interaction and social exchange (multiplexity) should foster a trusting relationship.
Vlaar et al., 2008	SW	Off	Clarity of Expectations, Transitivity, Frequency	Density	-	On group level, each group's openness reflects better understanding in between (clarity of expectations). High frequency and transitivity of the client onshore-IT/offshore-IT ties are prerequisites.

Table 1. Overview of social network measures identified

*div – diverse; SW – Software development; NI – No IT   **div – diverse; Off – offshoring; On – onshore outsourcing

Oshri et al. (2008) examine knowledge transfer between onshore and offshore sites through codified and personalized directories. Personalized directories include knowledge of "who knows what" and how to leverage this knowledge. Thus, knowledge exchange through personalized memory depends on short path length, transitivity and high density of the network. High frequency of interaction is also relevant. These measures could be used to analyze the influence of personalized memory on project success. Transitivity of ties is also relevant for the setting analyzed by Vlaar et al. (2008), where onsite teams act as mediator between client and offshore teams, to foster the cocreation of novel understandings. In their study, Vlaar et al. (2008) examine communication in offshore settings. They find knowledge and experience asymmetries as well as task and requirement characteristics important for interaction cycles. These assumptions could be further analyzed to find advantageous structures for common understanding. Prerequisites besides transitivity are frequent interactions and a dense network.

When looking at knowledge exchange, the relevance of high intensity can be derived from several papers. On the one hand, Cha et al. (2008) see coordination cost rising due to knowledge value chain disruptions. They explicitly mention structural measures to tackle this disruption, such as a "dual project management hierarchy", or a "mentoring program". A dense network and high intensity of ties support the needed knowledge exchange. Also, Dibbern et al. (2008) investigate reasons for client extra cost and find cultural distance to be one reason. Some concepts for cultural distance, such as collectivism, in turn can be linked to social structure. A similar cultural background and common knowledge space drive clarity of expectations and foster knowledge exchange. In this case, high density of interaction will help to decrease cultural distance and create a common knowledge space.

On the other hand, Ho et al. (2003) see the strength of a tie (i.e. its intensity) as rather problematic as it makes the client-side managers' tasks difficult in the described setting. They propose and empirically validate a model of antecedents and consequences of persistent managerial expectations when subordinates become contractors. Strength of ties and trust are hypothesized to be antecedents of persistence of expectations. Trust is not found to influence persistence of expectations, while strong ties to former subordinates increase persistent expectations. Also, Kern and Willcocks (2002), who apply an interaction approach to outsourcing relationships in a multiple case study setting, see this trade-off in strength of ties. Informal communication in addition to the formal roles is indeed desired (i.e. multiplexity) to improve the relationship between vendor and client representatives. However, the tie should not be so strong that it makes contract termination difficult. These concerns raise the interesting question if a tie can be too strong for a professional outsourcing relationship and what the right level of tie intensity is. We will discuss this in the following section.

Leonardi and Bailey (2008) examine the collaboration and knowledge exchange on individual level in offshored engineering tasks. They explicitly compare two different network structures: a distributed and a gatekeeper communication model. Their findings show that clients find the gatekeeper model more effective, while vendors see more advantages in the distributed model. A similar view can also be found in Levina and Vaast (2008) who analyze boundaries through availability of types of capital (economic, intellectual, social and symbolic) in an interpretive offshoring case study. They stress the importance of the program manager using his network to unlock resources to improve collaboration. Here, the gatekeeper function resides at the client rather than at the vendor site. At the same time, Levina and Vaast (2008) find direct access to business users crucial for knowledge exchange with offshore personnel. This supports the need for a high density network between provider and client and is contradictory to the gatekeeper model. Another case of gatekeeper model vs. high density can be found in Olsson et al. (2008) who present a theoretical framework for the implementation of two-stage offshoring models based on relational exchange theory. In their study of an Irish service provider being a bridge between the US client and another Indian service provider, they compare two settings that can be translated to a highly integrated (i.e. high density) interaction model and a loosely coupled model with a gatekeeper function.

Three more papers contain hints to gatekeeper or interface actors and network density relevance, but without explicating a trade-off between the two. Koh et al. (2004) analyze outsourcing relationships from a psychological contract perspective. They focus on the project managers, who are the interfaces on vendor and client side. They find that fulfillment of psychological contract obligations significantly explains outsourcing success. Tie measures such as clarity of expectations, multiplexity, and reciprocity can help formalize the relationships they describe. For further research, they propose to analyze the stakeholder network beyond the project manager dyad. In this network, the gatekeeper or interface roles of the project managers become apparent. Also, obligations of knowledge transfer, monitoring, and interorganizational teams might be better fulfilled with a high density network. Rai et al. (2009) analyze the relational factors influencing offshore IS project success. They show that information exchange, joint problem solving, and trust reduce project cost overruns and improve client satisfaction. Several of their proposed factors can be linked to structural assumptions: a client representative on vendor project teams is an interface actor as he belongs to both client and vendor groups. Open communication and high interaction afford a dense network. Ties can be further analyzed regarding multiplexity and clarity of expectations. Furthermore, Sarker and Sarker (2009) present a framework for agility in offshore software development that includes the dimension "linkage

agility". Linkage agility lies in the nature of interactional relationships within the distributed team. Sarker's model explicates the role of interface actors, who are the responsibles for the client-vendor relationship on both sites. Moreover, multiplexity of ties is relevant, as they suggest to build trust through social events in addition to the day-to-day knowledge exchange. Overall, a high frequency of interaction is crucial to build the relationship.

Choudhury and Sabherwal (2003) investigate common portfolios of control in outsourcing based on five case studies. The portfolios studied are dominated by outcome controls, while behavioral controls are often added later. Clan controls are seldom used although they can be powerful. They require shared goals and beliefs, which can be established by frequent interaction. We follow that multiplex relationships, high density, and frequency support clan controls.

Finally, while the focus of this paper is on the role of social network structures between vendor and client on the individual or group level, we do not want to conceal that we also found several outsourcing research papers that have investigated network structures on the organizational level, as well. For example, Gefen and Carmel (2008) and Gefen, Wyss and Lichtenstein (2008) analyze the impact of business familiarity in terms of previous contracts (and thus structural ties between client and vendor firms) on outsourcing price, penalties and contractual governance. They show that the existence of a previous relationship, representing a certain level of knowledge exchange and trust, influences contractual governance. Hence, the existence of a knowledge exchange and trust tie in a firm's interorganizational network is a relevant factor for vendor selection and governance design. In a related work on software development outsourcing, Ågerfalk and Fitzgerald (2008) investigate the obligations in opensourcing arrangements. Their results show that "fulfillment of certain customer and community obligations is significantly associated with opensourcing success". Although they do not explicate their structural assumptions, the overall opensource network is built on reciprocal relationships with knowledge exchange as main contribution by the network members. Lee, Miranda and Kim (2004) evaluate different perspectives on relationships between outsourcing strategy and success. They identify different gestalts of dominant outsourcing strategies and mention that the firm network plays an important role in Korea since it drives the success of longer relationships. Social network measures could help to further investigate the influence on outsourcing success of the firm being part of a network vs. being an isolated actor.

DISCUSSION OF IDENTIFIED PATTERNS

Looking at the results presented above, several recurring patterns can be found across papers of different topics. The gatekeeper model vs. high density of network trade-off occurs frequently. Further, two papers suggest that the positive effect of strong ties seems to have a limit. These two patterns are discussed in more detail in the following.
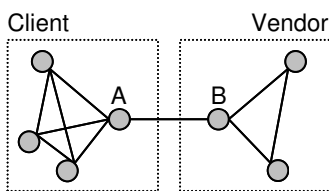
Gatekeeper vs. high density

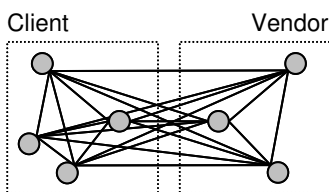**Figure 3. Gatekeeper: single point of contact on both sides**

The gatekeeper vs. high density trade-off summarizes the comparison of two different communication models. In any form of collaboration between two groups, the communication model lies on a continuum between a centralized model with a single point of contact (illustrated in figure 3) and a fully interconnected communication of everybody talking to everybody (illustrated in figure 4). From a social network perspective, a single point of contact equals a gatekeeper: a person in a group who is well connected within his own group and at the same time links the group to externals (Tichy et al., 1979). In the outsourcing case, this link to externals is the link to the other party, i.e. individuals in the vendor or client firm. The fully interconnected communication model on the other hand equals a network with a high density, i.e. there are many ties between employees from the client and from the vendor.

Figure 4. High density: Fully interconnected

Both Leonardi and Bailey (2008) and Olsson et al. (2008) empirically compare these two interaction models, the first in an offshore engineering field study and the latter in a two-stage offshoring case study. They show that differing interests from client and vendor employees inhibit an easy agreement for one of the models. Levina and Vaast (2008) do not explicitly compare the two models, but both the gatekeeper and high density aspect can be found in their case study, as well. It remains unclear which of the two models is superior in the respective situations. This is an important aspect of relationship management in practice, as for each outsourcing arrangement the flow of information and communication needs to be defined in a way that is efficient and effective for both the client and the vendor.

For further studies, the overall structure of outsourcing arrangements could be compared in case studies by applying social network measures such as the gatekeeper role and density of the network to formalize the communication model and examine its influence on outsourcing success. This will help to answer the research question: *Under which circumstances should outsourcing governance prefer to implement or to circumvent which of the presented patterns?*

Strength of ties

The strength of ties intuitively has a positive notion, as it implies an intense and probably trusting relationship. In our analysis, this is supported by Cha et al. (2008) and Dibbern et al. (2008). However, we found concerns regarding the strength of ties in two independent papers and situations (Ho et al., 2003; Kern and Willcocks, 2002). On the one hand, Kern and Willcocks (2002) found in their case analysis the wish for more informal interaction and social relationships. At the same time, interviewees stated that the relationship must not get too friendly, so that it shall not hinder the termination of a contract when necessary. On the other hand, Ho et al. (2003) found similar concerns in their study of persisting expectations by managers in the case of transition to a contractor. Here, the ties have a history in different formal roles and might be a lot closer than they would be with an unknown contractor. Interviewed managers raised this point as difficulty for working with their former subordinates. Hence, there is an apparent contradiction between the need for strong ties for successful collaboration and the danger of too strong ties.

The strength of ties is not a focus of investigation in the analyzed papers but rather one of many factors. Thus, the strength of ties calls for more in-depth investigation to uncover if there is a "right" level of tie strength in outsourcing relationship management and how this can be achieved. This provides another research question for further research: *How can you define and establish the "just right" strength of ties in outsourcing relationships?*

CONCLUSION AND FURTHER RESEARCH

Our analysis shows that social network structure is a highly relevant aspect in outsourcing relationships that warrants further research. We could identify that more than one in four outsourcing papers contains – but often does not focus on – structural assumptions concerning the interaction between vendor and client. We have unified these structural assumptions on an individual relationship level using social network measures and identified two emerging patterns that offer promising areas for future research on success drivers for outsourcing relationship management: Gatekeeper vs. high density and Strength of ties.

Apart from these salient patterns, we have also seen that social structure is regarded from more angles, such as transitivity for knowledge exchange or clarity of expectations under high cultural distance. Empirical studies should narrow down the social network measures identified in our literature analysis (see table 1 on page 4) to the most critical ones and analyze their impact on outsourcing success. The guiding research question could be: *How do social structures of outsourcing relationships influence outsourcing success?*

This research question is highly relevant for practitioners. The finding presented here show that there are varying interests in communication by the involved actors (e.g. Leonardi and Bailey, 2008). This establishes difficulties to agree on the right interaction patterns. The suggested future research can provide insights that help practitioners to make informed decisions on the setup of interaction structures within outsourcing arrangements and help pinpoint reasons for prevalent communication failures. Further research should also distinguish onshore and offshore settings and examine if the patterns and success factors of social structure differ. This will yield even more actionalbe findings for practitioners.

*"I am satisfied with … a glimpse of the marvelous **structure** of the existing world"* (Albert Einstein)

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