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2003

Citation for published version (APA):
Johansson, B. (2003). *Knowledge Sharing in ICT-Outsourcing Relationships*. Paper presented at BIR 2003 – Perspectives in Business Informatics Research, University of Potsdam and Humboldt-University of Berlin. Berlin, Germany.

Total number of authors:
1

Knowledge Sharing in ICT-Outsourcing Relationships

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Abstract. *This paper discusses knowledge sharing in ICT outsourcing relationships. The ICT outsourcing literature focuses primarily on large organizations' and with an underlying assumption that ICT outsourcing takes place when a large organization outsources an internal IT-department, IT-system or IT-function. In recent years there has been a change in this, and today ICT outsourcing has a broader meaning. A trend is the growth of the use of outsourcing in small and medium-sized enterprises (SMEs). With the use of ICT outsourcing in SMEs' knowledge sharing gets a new dimension. The paper focuses on this "new" ICT outsourcing perspective, where the outsourcers do not have knowledge about the business in the hiring organization at the beginning of the relationship. Within this subject there are at least two areas that are interesting: why share knowledge and how share it? The paper gives a short description of knowledge, knowledge management systems, and ICT outsourcing. In addition, the paper discusses the difficulties in knowledge sharing in ICT outsourcing relationships. Finally, the paper handles three more questions: Why share knowledge? What knowledge should be shared? And, how to share knowledge?*

Key words. Inter-organizational relationship, ICT outsourcing, knowledge sharing

1 Introduction

Knowledge management and knowledge management systems are a subject that is vividly discussed. The same is true of outsourcing. Outsourcing has a broad spectrum in organizations today whether dealing with outsourcing manufacturing or outsourcing of supporting activities such as information and communication technologies (ICTs). The theme of this paper is ICT outsourcing and knowledge sharing. Focus in the paper is on knowledge sharing within an ICT outsourcing relationships. In an outsourcing relationship there are at least two stakeholders, the supplier of ICT and the client. These two stakeholders need to have different knowledge or in other words they should be knowledgeable about different things. They also needs to have a shared understanding or some shared knowledge. To be knowledgeable in these two settings a need for this shared knowledge arises. But this demands a mutual understanding of the word knowledge and knowledge sharing. In the literature, a lot of different perspectives on knowledge and knowledge sharing are considered. One way to understand them is to

view them as organizational knowledge. Organizational knowledge can then be seen as the total collection of the individual's knowledge in the organization. Understanding organizational knowledge in the outsourcing relationship depends on how organizational learning is conducted in the ICT outsourcing situation. In an ICT outsourcing relationship, organizational learning is closely related to knowledge sharing. The question is then what impact knowledge sharing has on an ICT outsourcing arrangement, or what impact an ICT outsourcing arrangement has on knowledge sharing.

The ICT outsourcing literature focuses primarily on large organizations and with an underlying assumption that ICT outsourcing occurs when a large organization outsources an internal ICT-department. The outsourced ICT department becomes a new organization often with only one customer, and this customer is the old organization. The outsourcer is then very dependent on this customer. A consequence of this is that the outsourcer obtains a lot of knowledge about the business in the hiring organization.

In recent years there has been a change in this, and today ICT outsourcing has a broader meaning. A trend is the growth of the use of outsourcing in small and medium-sized enterprises (SMEs). With the use of ICT outsourcing in SMEs, knowledge sharing gets a new dimension. Following this trend new concepts have been created, for instance web services, business service provision, and application service provision. These concepts have generated new organizations or older organizations that have renamed themselves, for instance provider of web services, business service provider and application service providers. However, they can all be categorized as outsourcers. This new trend of outsourcing has also developed a new perspective of knowledge sharing in ICT outsourcing. These "new" ICT outsourcers lack knowledge about the business in the hiring organization at the beginning of the relationship. Two interesting points are worth noting in this respect: the kind of knowledge the stakeholders need and the way they are to share it.

The paper concentrate on this "new" ICT outsourcing perspective. There are not so many studies done about ICT outsourcing and knowledge sharing, especially in the area of SMEs. Knowledge sharing is an aspect that is extremely important for the ICT outsourcing relationship to be successful. Studies about how this sharing should be done and what knowledge that should be shared seems relevant. The aim of this paper is to present some suggestions that can act as a guide to these studies.

The paper describes ICT outsourcing, what it is, motives for ICT outsourcing, and the kind of relationships existing between supplier and receiver. Followed by, knowledge and knowledge management systems, and the difficulties with knowledge sharing in ICT outsourcing relationships. This are explained with the following three questions in mind: Why is it important to share knowledge in an ICT outsourcing relationship? What kind of knowledge is it that should be shared? And, how is the knowledge sharing done?

2 ICT outsourcing

A good deal of attention is given to ICT outsourcing today, but is ICT outsourcing something new? In the mid-1960s there were computer service bureaus that ran a variety of programs (McFarlan & Nolan, 1995). These programs were mainly financial and operational applications. And ever since Kodak 1989 decided to hire its ICT

resources from an external partner, there has been an undeniable trend towards ICT outsourcing (Hirschheim & Lacity 2000). According to Heywood (2001) the term outsourcing is used as an umbrella for a variety of different arrangements. He states that management theorists in the 1990s argued that differentiating between core and non-core functions, and then transferring all non-core to a specialist, is important for being able to maintain competitiveness. Outsourcing to Heywood (2001) is *"the transferring of an internal business function or functions, plus any associated assets, to an external supplier or service provider who offers a defined service for a specified period of time, at an agreed but probably qualified price"* (Heywood, 2001, p. 27)

Looff (1998) points out that there are many different and sometimes confusing definitions of outsourcing. Willcocks & Lacity (1998) identify four different strategies an organization can have to external ICT services partners (figure 1), buy-in, preferred supplier, contract out, and preferred contractor.
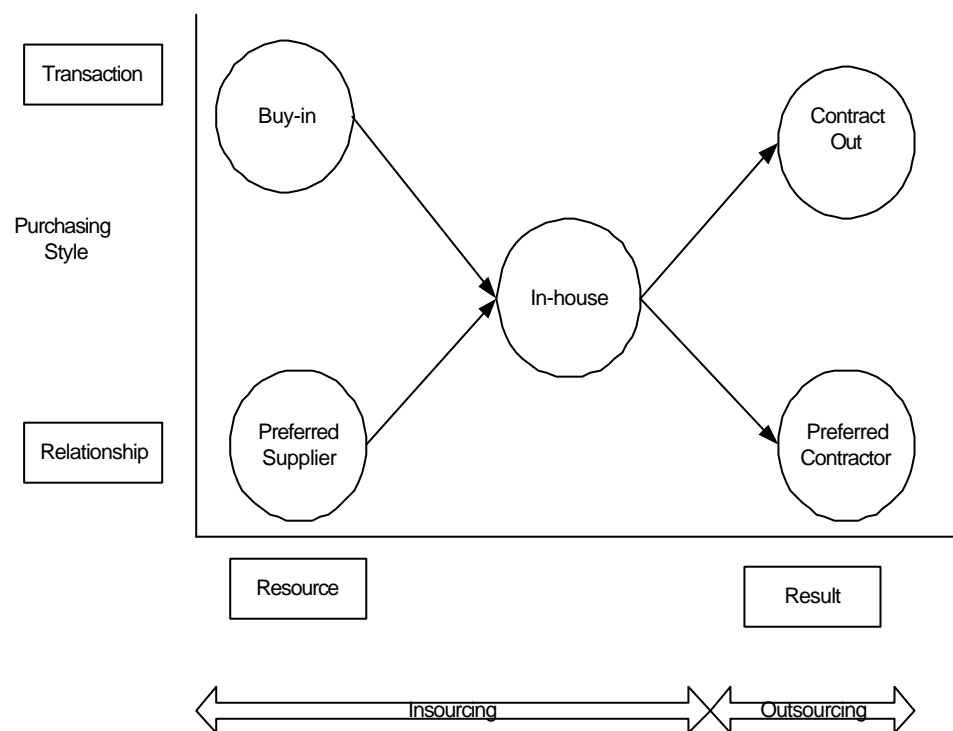

Figur 1. The four different strategies that an organization can have with regard to an external partner and their relation to sourcing options (Willcocks & Lacity, 1998, p. 4).

According to Willcocks & Lacity (1998), it might just be the "contract out" and "preferred contractor" that are outsourcing. The outsourcing could then in itself be classified according to the relative grade of its use in the organization into the following three options: selective outsourcing, transitional outsourcing, and total outsourcing. Total outsourcing means that at least 80 per cent of an organization's ICT budget is spent on external partners (Willcocks, 1994). Willcocks & Lacity (1998) describe transitional outsourcing as the action taken when something new should be implemented in the organization. Transitional outsourcing occurs when the organization chooses to temporarily outsource this function during the time it builds up competence to handle it by itself. The idea is that the function should be handled internally in the organization after some time. Selective outsourcing take place when a part of the entire ICT asset is outsourced. Compared to total outsourcing, selective outsourcing means

that less than 80 per cent are outsourced. Heywood (2001) explains the same set of outsourcing terms. But, he complements them by coining more terms, namely co-sourcing, transformational outsourcing, joint venture outsourcing, and equity stakes. However, all these different terms imply one thing, and that is the handing over a function to another external partner. The differences between these outsourcing agreements rest on the degree of involvement the customer has in the provider company.

ICT outsourcing activities have grown rapidly during the past few years, and ICT outsourcing has had a substantial impact on ICT departments within organizations. The impact has varied from just contracting a few ICT functions to outsourcing the entire ICT operations (McLellan, Marcolin & Beamish, 1998). According to McFarlan & Nolan (1995), ICT outsourcing is a harbinger of transforming the traditional ICT departments and it provides a glimpse of the emerging organizational structures of the information economy.

The assumption is that ICT outsourcing changes and affects the organizational structures. Outsourcing also often seen as a way for an organization to take advantage of the challenges of ICTs. The decision to outsource can then form a considerable part of an organization's business strategy – the way it is to handle the future and what strategic decisions it should take. One such decision could be to outsource its ICT resources. This decision then affects the organization's information infrastructure and the demand for knowledge sharing between the provider organizations and the customer organizations.

ICT outsourcing is often referred to as a way for the hiring organization to have the possibility to make the right strategic decision. This, according to the outsourcer, is the outcome the hiring organization's access to and knowledge about the newest technology. This can be seen as one motive to outsource ICT. But, what other motives for ICT outsourcing are there.

2.1   ICT Outsourcing motives

One commonly quoted reason for ICT outsourcing is to provide increased flexibility to cope with changes in technology and in the business environment. Paradoxically, the traditional ICT outsourcing agreement is based on long-term contracts that tend to inhibit rather than facilitate change (Shepherd, 1999). According to Lee (2001), outsourcing is motivated by the strategic, economic, and technological benefits. Shepherd (1999) summarizes the ICT outsourcing motives of the majority of organizations as a combination of the following factors:

- Financial restructuring
- Reducing or stabilizing costs
- Overcoming cultural and organizational problems
- Concentrating on core competencies
- Accessing world-class expertise.

McLellan et al. (1998) give the following five groups of reasons for the ICT outsourcing:

- Financial motivations. This is expressed very strongly by the hiring organizations. Cost saving is a highly expected outcome of the ICT outsourcing agreement.

- Unresponsive ICT departments. This belief is mentioned in the literature. It argues that organizations outsource their ICT because their ICT department does not respond to organizational needs. The organization wants a more flexible ICT organization, and sees the outsourcing as a way of achieving this.
- Strategic motivations. According to McLellan et al. (1998), there is a belief that ICT outsourcing is only appropriate when ICT is not a core function. This is found not to be appropriated. One motive for outsourcing ICT, in spite of its role as core activity, is the belief that ICT outsourcing offers an opportunity to increase competitive capabilities.
- Improve business performance. The nature of business performance is long term and because of that it would only be detected after a period of time. The strategic initiative to outsource ICT is hoped to improve long-term business performance.
- Facilitating strategic change. Many decisions are centered on facilitating strategic change. These include changing the organizational boundaries, restructuring the organization, accessing new technology, mitigating technological risk and uncertainty, and improving the management of ICT operations.

According to Udo (2000) outsourcing providers suggests the following benefits with outsourcing:
- A predictable ICT budget is gained by tying it to actual requirements. This budget is then not dependent on which hardware and software are present in the organization.
- A lower cost for ICT, which means cost savings compared to both the current as well as the future expenditures on ICT equipment.
- Access to technical resources and technical skilled personnel are increased
- The organization can focus on core products and services, and does not have to handle operational issues.
- The organization's fixed costs for ICT can be exchanged to variable costs, which means that it is possible to invest this capital in core business.
- By outsourcing the risks in development applications are spread with the technology partner.

Udo (2000) also mentions that some observers points out that outsourcing has more disadvantages than advantages. The following potential disadvantages are reported:
- There is a lack of chemistry between the partners
- Dependency on another party for the organization's critical information.
- Leading to a loss of capability, which in the future can be a key success factor.
- Leading to loss of control of ICT assets.
- Threat of opportunism from the supplier.
- Leading to a loss of flexibility.
- Leading to a loss of competitive advantage in information management.
- A loss of ICT expertise and with that a loss of memory in the organization.
- Causing a decline in morale and performance of the remaining employees.
- There is no guarantee for long-term cost savings.

Baldwin et al. (2001) argue that a selective sourcing approach with the opportunity to use several different suppliers is an increasingly popular strategy to minimize risks, maximize benefits, and reduce costs.

Jurison (1995) summarizes the motives for outsourcing or not outsourcing of ICT. He states that the primary reason for ICT outsourcing is indicated by economic reasons, i.e. economic consideration in different forms is the primary driver for an ICT outsourcing decision. He mentions risks as the primary reason for not choosing an ICT outsourcing option, with the irreversibility of the decision is seen as the dominant risk.

According to McFarlan & Nolan (1995), there are two factors that have affected the growth of ICT outsourcing: the recognition of strategic alliances and the changes in the technological environment. The most important aspect of ICT outsourcing success is the management of the alliances. McFarlan & Nolan (1995) point out four critical areas, which require attention: the Chief Information Officer (CIO) function, performance measurements, mix and coordination of tasks, and costumer-outsourcer interface.

Whether an organization should outsource the ICT or not is, according to Weill & Broadbent (1998), principally a question of what strategy the organization has. For organizations that demand a higher and faster flexibility to the market and are in an area of higher growth, ICT fares better internally than externally.

Weill & Broadbent (2000) suggest four different approaches to investments in information technology infrastructures: none, utility, dependent, and enabling. The last one is the most interesting from an ICT outsourcing and knowledge perspective. The enabling approach means that the infrastructure is a part of the organization's core competence and provides capability to increase strategic options. According to Weill & Broadbent (2000), the demand for top management involvement increases when the organization moves from none to utility, to dependent, and to the enabling approach.

One possible remark is that if the organization is in the enabling view of ICT infrastructure, then the demand for knowledge about ICT is much higher. The demanded knowledge is about what possibilities there are with ICT. The question is then what kind of relationships does this demand, and what kind of relationships are there in ICT outsourcing?

2.2 ICT Outsourcing relationships

One assumption that is expressed in Willcocks & Choi (1995) is that all ICT outsourcing relationships contain an element of cooperation, and if critical areas and processes are outsourced, a long-term trust relationship has to be developed. This trust relationship is related to either 'strategic alliance' or 'strategic partnership'. Willcocks & Choi (1995, p.67) define strategic alliances as follows: *"Strategic alliances are collaborative interorganisational relationships involving voluntary efforts and significant resources of two or more organisations to create, add to, or maximise, their joint value."* Henderson (1990, p8.) defines strategic partnership as *"a working relationship that reflects a long-term commitment, a sense of mutual cooperation, shared risk and benefits, and other qualities consistent with concepts and theories of participatory decision making."*

To explain the factors building up the relationship it can be fruitful to look at a model developed by Henderson (1990). He describes a model for building partnership as a management strategy, focusing on external as well as on internal partnerships. The

model is shown in figure 2. Henderson's model seems to be a good starting point for understanding the basis by which ICT outsourcing relationships can be formed and developed.
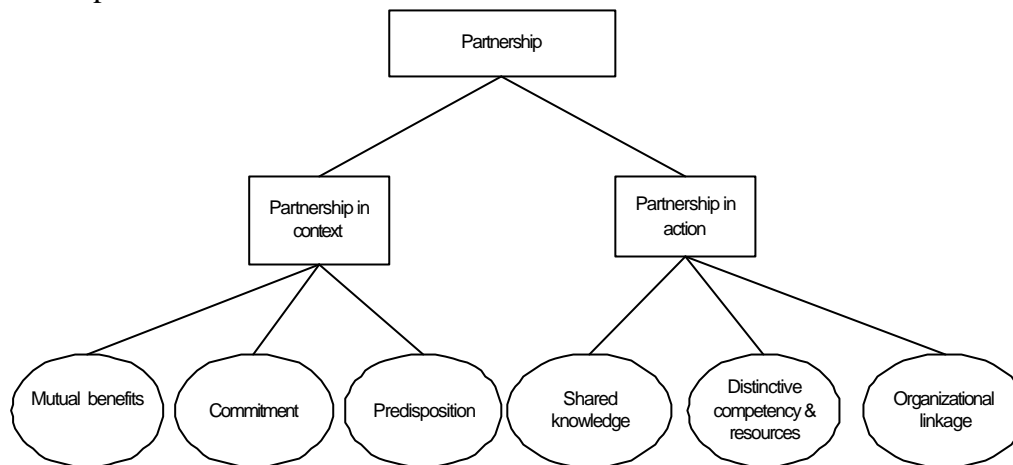
Figure 2. Henderson's model of determinants for successful partnership (Henderson 1990, p. 10).

To build and sustain a successful partnership, Henderson makes it clear that all the conditions in his model, shown above in figure 2, must be considered. The model builds upon two dimensions of partnership: 1) partnership in context and 2) partnership in action. Where

- Partnership in context proposes key factors necessary for a long-term relationship.
- Partnership in action proposes key factors that create an effective day-to-day working relationship.

The basic assumption Henderson makes is that both partners have a need to influence key decisions and policies, and the belief that the partnership is a long-term relationship. Henderson points out that while the concept of partnership is easily invoked, it is actually very difficult to make it work.

Another question of interest here is the commonly held view of an organization that a partnership exists, when in fact the relationship is only a transaction. This is interesting in the light of the distinction between a transactional style of relationship and a partnership style of relationship, where the former takes it for granted that the rules of the game are well specified and the failure to deliver on commitments by either party demands a solution to litigation (Henderson, 1990). It may get quite problematic if one part in the relationship views this as a partnership and the other part as a transactional relationship.

In this paper the most interesting condition in Henderson's model is the shared knowledge. Henderson suggests that shared knowledge is a vital part of the relationship. By placing it in the dimension of partnership in action it implies that knowledge sharing is an activity that continues on a day-to-day basis. The question is then what knowledge to share and how to do it? Before answering a short review of knowledge and knowledge management systems might be worthwhile.

3 Knowledge and knowledge management systems

There are a lot of different opinions about the differences between information and knowledge. According to Alavi (2000), knowledge is the information that has been processed in the mind of individuals through a process of deliberation, learning, and thought. One assumption that is possible to make is that information is what you are communicating. For example, you could say that you have been informed or that you are informing someone, and when you have been informed, you have more knowledge. Expressed in another way, information is the "thing" that is transferred. Knowledge is when you are "assimilating" the information. If you look at information and knowledge in this way, is it fully possible to store knowledge in information systems. Knowledge management systems as artifacts are built on the assumption that knowledge is something that is possible to store in information systems (IS).

Alavi (2000) defines the term knowledge management system as a:
"IT-based system developed to support and enhance the primary organizational knowledge management processes of knowledge generation, knowledge codification, and knowledge transfer".

He mentions two different models for knowledge management system: the repository model and the network model.
The repository model views knowledge as objects that are possible to collect, store, organize, and disseminate. Most of these repositories contain internally as well as externally obtained knowledge.

The network model views knowledge as an individual asset, and the meaning of knowledge management is not to codify and extract the knowledge. The knowledge remains with the individual and is mainly transferred through person-to-person contacts. Knowledge management system, in the network model view, contains pointers to the source of the knowledge and not the knowledge itself (Alavi, 2000).
Alavi (2000) identifies two factors that are of interest in the knowledge sharing perspective. One is about motivation and the lack of individual motivation to share, contribute, or use knowledge. This is a barrier to organizational knowledge transfer. The other factor is about lack of contact, relationship, and common perspectives when people do not work side by side. In organizational knowledge there are parts such as operational routines, skills, and know-how (Lee, 2000).

An organization's competitive advantage depends on the organization's ability to acquire and use valuable resources. These resources are, according to Lee (2000), inimitable, unsubstitutable, and durable. Knowledge-based theories argue that organizational knowledge is one of the most valuable resources and a key factor in a dynamic and rapidly changing environment.

4 Discussions

The main idea with outsourcing is to use a specialist to handle the non-core functions in an organization. The non-core functions are those about which the organization has no knowledge.

4.1 Why share knowledge

The first question discussed is: Why is it important to share knowledge in an ICT outsourcing relationship?

As stated by Lacity & Willcocks (2000) the question of knowledge sharing largely depends on what kind of relationship there is between the hiring organization and the outsourcer. Are the organizations strategic partners or merely agents in a transactional exchange? According to Scarbrough (1998), the most critical aspect of knowledge sharing in the transactional view is the constraints of ability to trade knowledge. One argument against this view is that organizations actively utilize knowledge to create new economic value through processes of innovation. In that case the trade ability of knowledge would be secondary to the contribution it makes to an organization's innovation capability

According to Weill & Broadbent (2000), it is the quality of executive leadership for ICT infrastructure rather than the technology itself that is the likely source of any competitive advantage. Weill & Broadbent (2000) point out the importance of ICT infrastructure in relationship-based services and information sharing across organizations to capitalize opportunities for cross selling and synergy. One of the main parts of the ICT infrastructure is a human information technology component composed of knowledge, skills, standards, and experience. This component is the converter of the technology infrastructure into reliable services that form the organization's information technology infrastructure (Weill & Broadbent, 2000). The outstanding question where this knowledge should be located, in the supplier's organization or in the receiver's organization?

4.2 What knowledge should be shared

The second question is: What kind of knowledge is it that should be shared?

Lee (2000) points out that one key source of successful knowledge sharing is an organization's ability to learn or acquire the needed knowledge from other organizations. For an organization to evaluate and utilize outside knowledge, it must have some background knowledge. The ability to exploit external knowledge, according to Lee (2000), is largely a function of the level of prior related knowledge. This means that in order to answer the question whether it is the right knowledge that is shared, one must know which knowledge is right. This means further studies on the attempt involves to determine which knowledge is right are necessary. This is also a question of what relationship there is between the organizations.

One of the motives for ICT outsourcing proposed by Mclellan et al (1998) is that the organization thinks that the internal ICT department is unresponsive. To improve this with an outsourcing agreement there is a need for intensive knowledge sharing. If the outsourcer is to be seen as a more flexible and more responsive partner, the outsourcer needs to have a lot of knowledge about the organization.

Baldwin et al (2001) argue that a selective sourcing approach is a strategy that minimises risks, maximises benefits and reduces costs. However, if this sourcing strategy should pay-off, there is a need to share knowledge with several suppliers. This indicates that there must be some kind of trade-off between costs for managing relationships and the benefits from having more relationships partners. The question is whether an SME, after deciding to use an outsourcing strategy for its sourcing of ICT,

would choose to cooperate with different suppliers or it would minimize the risks, maximize benefits and reduce costs in another way.

Within the hiring organization the top management must have this knowledge or get this knowledge from someone else. But does the outsourcer transfers over the right knowledge? Is the outsourcer aware of what knowledge that is needed and demanded by the hiring organization? These two questions raise at least two more queries: 1) does the outsourcer have enough knowledge of the business to suggest the right action, and 2) does the hiring organization have enough knowledge to decide if the proposed action is right.

4.3   How to share knowledge

The third question is: How is the knowledge sharing done?
Alavi (2000) describes two different approaches to knowledge and knowledge management system, the network model and the repository model. There are at least two relevant questions regarding this in the ICT outsourcing case. How does this different model of knowledge management system work in the ICT outsourcing case? And how should knowledge management systems be designed to support knowledge sharing between the organizations in an ICT outsourcing case?

Scarbrough (1998) points out that aspects of both social and technical closure are important if knowledge-based transactions are to be managed effectively. This highlights the advantages of close relationships between organizations in an ICT outsourcing arrangement as a means of sharing knowledge and developing mutually beneficial innovations. The question about how the organizations share knowledge is in my opinion dependent on the kind of relationship between the organizations. This means that in a study about knowledge sharing in an ICT outsourcing arrangement one must first clarify the question of the kind of relationships existing between the organizations.

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