

Possibilities and risks with a knowledge broker in the knowledge transfer process

by

Mikael Lind & Magnus Persborn

Research group VITS

University of Borås and Linköping University, Sweden

[Mikael.Lind@hb.se | Mpn@relationsbyran.se]

Abstract

It is essential that companies of today develop their organisational ability in order to stay competitive in a society that changes continuously. It is often the case that problem solving concerning product and production development, as a mean for development of organisational ability, need knowledge from knowledge resources outside the organisation. The process of gaining knowledge into the organisation can be called a knowledge transfer process. One trend is the development of businesses that act as brokers. The issue dealt with in this paper is to investigate how a broker can facilitate the knowledge transfer processes. Our empirical experiences are based on a case study of LINK Center. LINK Center operates as a broker in order to support the creation of contacts between questioners and knowledge resources. Further, the role of a broker in a knowledge transfer process context is discussed by using the theoretical basis and the case study of LINK Center. We have found that a broker can improve the efficiency of the knowledge transfer process. But, we have also identified, from the case study at LINK Center, several risks by adding an actor between the questioner and the knowledge resource. These risks originate from that the knowledge broker doesn't have a developed understanding of how knowledge can and should be mediated.

1. Introduction

Nonaka and Takeuchi (1995) claim that knowledge is not only a resource but also *the resource* of the new knowledge society. Organisations and its people have ability to perform actions. In order to be able to perform actions there is a need for knowledge. An organisation's ability can be determined by its action ability (ability to act through its members) (Goldkuhl & Nilsson, 2000). Nonaka and Takeuchi (1995) mean that knowledge denotes great power and competitive advantage. The knowledge within an organisation, which exists on different levels, determines the organisation's action ability.

There is a strong imperative for organisations to be highly market responsive in the today situation with intense and global competition (Lind & Goldkuhl, 1998). Current products must meet the expectations of the customers. Future products must meet the expectation of tomorrow's customers. The firm must continuously develop new products and work with improvements of current products. This denote a great demand for both product and production development

In this paper product and production development is studied from the perspective of development of the organisation's ability. Development of an organisation's ability demands knowledge. One of the issues behind this paper is to discuss how knowledge can be transferred in to an organisation that needs to develop its ability and how an organisation can be constituted to facilitate such needs.

Here, such a facilitator is a knowledge broker. The main function of a broker is to bring a buyer and a seller together. The broker is a specialist in performing the contractual function and does not actually handle the goods (Albaum *et. al.* 1994). Since a broker business has the purpose to facilitate the establishment of contacts between a buyer and a seller (in a wide scope) the broker business has two different kinds of clients. In this paper the concept knowledge broker is used as the mediator between a questioner, i.e. an organisation that needs knowledge for product and production development, and a knowledge resource, i.e. an organisation that can deliver the knowledge.

During the fall of 1999 a joint project between the Association of Swedish Engineering Industries (VI) and the research group VITS was initiated. The project is about developing a sound ground to establish and enhance a knowledge broker business. This knowledge broker business, called LINK Center, has the purpose of improving product and production development in VI's membership companies by improved use of knowledge and short lead times in the knowledge transferring process. The main idea behind LINK Center is to be fast and precise in mediating contacts and knowledge.

The purpose of this paper is to investigate the possibilities as well as the risks in adding an extra actor into the knowledge transfer process. This investigation is based upon experiences received from performed case

study at LINK Center as well as theories related to knowledge management.

In section two of the paper concepts such as knowledge, knowledge management and knowledge transfer are elaborated. Following that section the case study performed at LINK Center is presented. This presentation is focused on how to regard LINK Center as a business, an analysis of the errands that LINK Center has executed as a pilot business and problems that actors within and outside LINK Center have expressed. In section four we have a discussion of the implications in adding a broker as a part in the knowledge transfer process.

2. Managing and transferring knowledge

All businesses have different conditions that determine their line of action. The conditions for a knowledge broker as a business is determined by the way that knowledge can be managed and transferred between different parties.

2.1 About knowledge

What is knowledge? Plato's introduced a definition of knowledge as *Meno Pheado Teagetetus* (justified, true, beliefs), which is an ancient and early attempt to answer this question (Nonaka, Takeuchi 1995). Many later philosophers have also occupied their minds for this question (e.g. Aristoteles, Wittgenstein, Popper and Polanyi). Knowledge has therefor many faces and is very complex to understand. A single word or a sentence cannot define knowledge. (Sveiby 1995) Words often related to knowledge are information, experience, ability, consciousness, wisdom, talent, skilfulness etc. Knowledge contains two main significances. The first one is *can* which means to be able to (know-how). The other one is *know* which implies knowing (know-that). Playing tennis is something that you can do and that Stockholm is the capital of Sweden is something that you know. You could play tennis more or less well but either you know the capital of Sweden or you don't. Since you either know that Stockholm is the capital of Sweden or not, knowing is according to Sveiby (ibid.) digital. When you act you can act, i.e. be able to act, in better or worse ways. The can dimension is therefore analogue (Sveiby, ibid.).

The can dimension of knowledge is often related to the notion of competence. The sum of all individual competence within an organisation can be called the organisation's ability. Goldkuhl & Nilsson (2000) talk about collective competence as the constellation of collective resources and different individuals' unanimous competencies within an organisation. Collective competence can be the same thing as institutionalised inter-subjective know-how, i.e. a common ability among several individuals. However, collective competence does not mean a fully shared know-how. Stein (1996) calls the same phenomena as social knowledge on macro-level. Different individuals in an organisation have different know-how, where the different individuals' know-hows supplement each other in order to perform a joint task. Different competencies need to be co-ordinated within an organisation. Different types of knowledge can be shared among different individuals, i.e. knowledge can be seen as social and/or individual. Goldkuhl & Nilsson (2000) also make such distinction. They regard knowledge as existing on the following levels:

- Individual knowledge
- Intersubjective institutionalised knowledge
- Descriptions over knowledge
- Designed ability in artifacts

Individual and social knowledge that is stored in individual memories can be more or less explicit or possible to communicate. Polanyi (1966) means that knowledge can be "tacit" since individuals often know more than they can tell. Some tacit knowledge, can however, be articulated and through the articulation also be communicated (Goldkuhl & Nilsson, 2000).

2.2 Externalisation and internalisation as knowledge management

Knowledge management is a concept that is tricky to define. It is about managing knowledge, but in what sense? In this paper knowledge management is used in the context of transferring knowledge between different parties.

Knowledge transfer is often about making knowledge articulated. Nonaka & Takeuchi (1995) call the knowledge conversion process of turning tacit knowledge into explicit knowledge for externalisation. "Externalisation is a process of articulating tacit knowledge into explicit concepts" (ibid. pp. 64). Explicit knowledge refers, according to Nonaka & Takeuchi (ibid. pp. 59), to knowledge that is transmittable in formal, systematic language.

The process of articulating knowledge can be claimed as a process of reconstruction, which is a concept used by e.g. Habermas (1984), Goldkuhl & Lyytinen (1984), Lind & Goldkuhl (1997, 1998). The purpose of reconstruction is to convert know-how to know-that, i.e. reconstruction is about articulation of tacit knowledge (known or unknown). Know-how means the user's ability to talk, understand and act in social situations (Goldkuhl & Lyytinen, 1984). Know-that means the explicit knowledge of how users can talk, understand and act. Through articulation of know-how it is possible to manage the transferring of knowledge.

In the context of knowledge transfer the knowledge that have been articulated also need to be put into the practical context. Know-that need to become know-how. Nonaka & Takeuchi (1995) call the process of embodying explicit knowledge into tacit knowledge as internalisation. The concept of internalisation is closely related to “learning by doing”, but the amount of doing that is needed for turning know-that into know-how is of course related to the level of pre-understanding of the actor and the type of knowledge that is transferred.

Articulated knowledge is, according to Sveiby (1995), independent of the individual. Competence is, on the other hand, dependent of the individual (ibid.). Most of the knowledge that is inside the organisation is tacit and non-articulated. One implication of knowledge management is managing the knowledge inside the organisation, through articulation, in order to make it possible to share knowledge within and between organisations.

2.3 Knowledge transfer through different levels of interaction

The discussion above has shown that there can be lot of distinctions between different types of knowledge. These different types of knowledge demands specific procedure of knowledge transfer.

Sveiby (1995) claims that each individual needs to build his/her own competence. Since an organisation consists of individuals, the ability of the organisation must be constituted by the individuals’ competence. Building competence is done through training, practising, imitating, doing the wrong things, reflection etc. Competence is transferred between individuals within and between organisations through doing. Shall such doing be done in co-operation or by the individual herself? “Sharing tacit knowledge between individuals through communication is an analog process that requires a kind of ‘simultaneous processing’ of the complexities of issues shared by the individuals.” (Nonaka & Takeuchi, 1995, pp. 60).

Knowledge transfer is about interaction and communication between two roles; a questioner (Q) and a knowledge resource (KR). The knowledge resource is the receiver of a question stated by the questioner. These roles can act within the same organisation or in separate organisations. Interaction is here seen in the context of one role stating a question to another role and the first role receiving an answer from the other role. In this situation there might be a need for a lot of clarification between the two roles resulting in a high level of interaction. In other situations there might be fewer interactions since the question is formulated in such a way that the knowledge resource can give a direct answer to the question. The type of knowledge that needs to be transferred should determine the level of interaction between the two roles in the knowledge transfer process. The level of interaction in the knowledge transfer process is also dependent on the developed understanding of the knowledge domain between the two parties.

There can be at least two reasons when the knowledge resource does not understand the questioner’s knowledge need when he/she is asking a question. One is that the questioner isn’t able to or trying to explain in which situation that knowledge is needed (the context in which it should be know-how used). Another reason is that the level of pre-understanding (background knowledge) at the knowledge resource isn’t good enough.

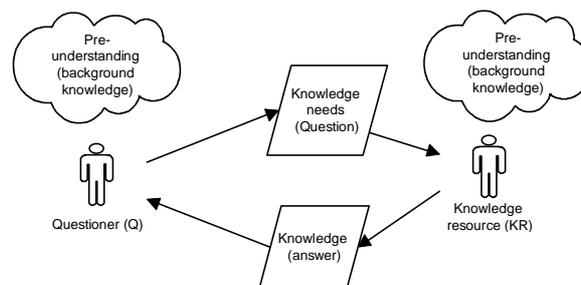


Figure 1: Knowledge transfer through communication between two roles

The knowledge transfer process shall be seen as a way to go from know-how to know-that and then back to know-how (a combined process of externalisation and internalisation). There are however two actors involved in the knowledge transfer process, which means that, both these actors have their own know-how (pre-understanding).

The questioner articulating his/her pre-understanding (know-how) of the context and its problems initiates the knowledge transfer process. This is the first externalisation process in the knowledge transfer. Through articulation of the know-how one will also be able to identify the knowledge need. The know-that together with the knowledge need constitutes the question that is directed to the knowledge resource. The knowledge resource interprets the question using his/her know-how. The next step in the knowledge transfer process is that the knowledge resource need to articulate his/her know-how (the second externalisation process) in order to formulate an answer. If the knowledge is possible to articulate the knowledge is formulated as know-that, which then will be interpreted by the questioner. The interpretation is part of the internalisation process, which must occur in order to develop the questioner’s know-how. The development of the questioner’s know-how is needed

to come to a solution of the problems. One can also see that there might be some feedback from the questioner to the knowledge resource concerning the use of the answer that was communicated from the knowledge resource. This knowledge concerning the applicability of the answer from the knowledge resource can be a basis for further development of the knowledge resource's know-how.

In the knowledge transfer process discussed above we have identified four critical actions in order to ensure successful knowledge transfer. These are:

- The questioner might have misunderstood the context with its problems and his/her know-how. This might cause that the question doesn't become valid for solving the actual problem.
- The knowledge resource might not have the accurate know-how for interpreting the question or just don't understand the question.
- The knowledge resource might not have the ability to articulate his/her know-how in to a valid answer.
- The questioner might not understand the answer and/or is not able to internalise the answer into developed know-how.

If any of the above shown critical issues actually happens there must be a higher level of interaction, where some of this interaction ought to be personal. Some tacit knowledge is not possible to articulate. Therefore, the knowledge transfer process must also consist of activities that create conditions for the questioner and knowledge resource to interact directly. It is however important that knowledge become articulated in order to stimulate organisational learning and development of organisations' ability.

3. LINK Center as a knowledge broker

In this section a business, LINK Center, that acts as a knowledge broker is discussed. By presenting LINK Center a basis to discuss the consequences of adding a broker business to the knowledge transfer process will be established.

3.1 LINK Center as a business

To describe LINK Center we have used the model of generic practice (Goldkuhl & Röstlinger, 1999). By using this model as a theoretical lens, it has been possible to conceptualise LINK Center in a meaningful way and thereby identify important characteristics. The model of generic practice consists of categories for understanding human practices, i.e. businesses. Examples of such categories are providers, clients, assignees, assignment, products, sponsors, producers, etc.

LINK Center has a double overlapping business structure (see figure below), which means that the business has multiple clients and multiple providers. LINK Center clients are naturally the questioners and the providers are the knowledge resources. But a less obvious client-provider relationship can be identified. In the LINK Center business the knowledge resources are not only providers they are also clients. LINK Center provides the knowledge resources potential consulting projects and interesting problems (hands-on issues) dealt with in the practice. In this situation the questioners are not only clients but also providers.

Both the questioner and the knowledge resource hold different roles. The questioner acts as an assigner when stating a question. At the same time, the questioner acts as a provider of the base for LINK Center to offer the knowledge resource the product ("we know who need"), i.e. interesting potential consulting projects. The knowledge resource acts as a provider of knowledge as the base to the offer ("we know who knows") made to the questioners. In some cases the knowledge is transferred by LINK Center and in some cases the knowledge is transferred by the knowledge resource itself. The assignment ends up in some kind of product, which in this case is knowledge, and is transferred to the questioner who acts as a client.

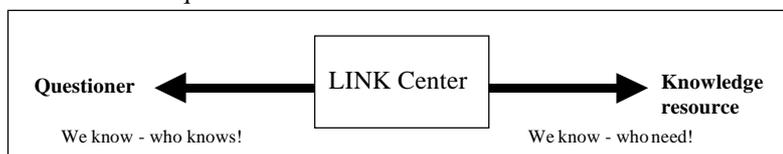


Figure 2: LINK Center as a broker business

The knowledge resource acts as an assignee and assigns LINK Center to provide the knowledge resource with the product (e.g. interesting potential consulting projects). When the knowledge resource receive the product it acts as a client.

Other actors surrounding LINK Center is the Swedish government who acts as an assigner and a sponsor together with organisations such as VI. Nutec formulates norms and the consultant firm Combra makes some of the instruments, for example the information system for handling errands as well as the infrastructure for the communication. Experiences from the mediations is taken care of and retained in the business.

One issue that has been debated a lot is the financing. It has been stated that LINK Center is to be fully

financed by its own action and the idea is that it is to be financed by the both types of clients (questioners and knowledge resources). The Swedish government though has financed the pilot business in order to gain experiences and establish an independent business.

3.2 Communication variances

The pilot business has been running for about two years. During these years there have been several errands that have been managed. An errand in this study is a knowledge need formulated in a question that the questioner transfers to LINK Center. A questioner's knowledge need is based upon the questioner's pre-understanding and the perceived lack of knowledge to obtain the targeted knowledge for solving a specific problem in the context of product and production development. LINK Center, which consist of a helpdesk and attendees, will then assist the questioner in finding answers to the question.

The analysis of errands is based upon 64 different knowledge transfers. Every errand has been read carefully and has been documented both graphically and by text. The essential finding from the errands is that there have been sixteen different types of communication patterns in handling the errands. From these sixteen types three main groups (direct-contact group, direct-answer group, and non-knowledge resource group) in handling the errands can be identified. These different ways of handling can be seen as different communication variances. The meaning of each grouping is as follows:

- **Direct-contact group** (40 % of the errands). The question stated from the questioner results in a direct contact between the knowledge resource and the questioner. 50 % of these errands end up in some kind of consulting project or mission for the knowledge resource. The remaining errands are questions that are complicated and demand a high level of interaction between questioner and the knowledge resource. This shows that LINK Center can work as a *mediator of contacts*. The line of action in this communication variance is as follows:
 - The errand is initiated (1) by a question that the questioner communicates to the Helpdesk. The Helpdesk reads the question and mediates (2) the question to the attendee. The attendee reads the question, refines it and asks the helpdesk to mediate (3) the question to a knowledge resource. The helpdesk transfers (4) the question to the knowledge resource. The knowledge resource contacts the questioner (5) and hopefully solves the problem. The helpdesk is at the same time informed (6) by the knowledge resource that the errand is taken cared of.
- **Direct-answer group** (30 % of the errands). The question stated from the questioner results in an answer. This group is also an ideal way of handling errands since it shows that LINK Center can work as a *mediator of knowledge* (questions and answers). The main characteristic of the group is that the question is answered directly by the helpdesk based upon the answers that have been mediated from the knowledge resources. The line of action in this communication variance is as follows:
 - The first four actions (1-4) are identical to the direct-contact group. When the knowledge resource is contacted it answers the questions and mediates (5) the answers back to the helpdesk. The helpdesk combines the answers from the different knowledge resources and mediates (6) them to the questioner. The questions are often not as complex as the questions in the direct-contact group. The answers are often pointers to other sources such as other experts, books, web-addresses etc.
- **Non-knowledge resource group** (20 %), which can be divided into two subgroups:
 - **Internal processing for reaching an answer**, which means that LINK Center answers the question by its own organisational ability. This shows that LINK Center has internal capacity to solve problems and answering questions. This is also a fairly quick way to solve the problems, which is one of the basic ideas with LINK Center. The questions can be answered either at the helpdesk or by the attendee. The questions are not very complicated and the answers are often pointers.
 - **External processing for reaching an answer**, which means that LINK Center answers the question by using resources (or experts) others than the knowledge resources that LINK Center has an established relationship to. This subgroup shows that there are potential knowledge resources outside the scoop of LINK Center.

The rest of the errands (10 %) have not been possible to relate to any of the above identified communication variances.

3.3 Problems in LINK Center

The main problems identified in this study are very essential whether LINK Center, as a business is to succeed or not. The problem situation, which is based upon experiences from the actors running the pilot business, can shortly be described as follows. Today, LINK Center does not work as planned. One among other causes is that the errands are not attended as quick and precise as it is meant to be. One major cause for this problem is that the errands do not have as high priority as needed by the knowledge resources. The low attention to the errands by

the knowledge resources is shown in the fact that there is a defective feedback to the helpdesk about the contacts and answers that the knowledge resources have made directly to the questioners. The questioners are also not motivated in using LINK Center. They have a hard time understanding the benefits with LINK Center, which results in few questions. The lack of questions has the effect on the knowledge resources that they do not feel motivated in participating in the knowledge transfer process. The motivation problems for the questioners as well as the knowledge resources has its foundation in that LINK Center has not been clear enough in the offer and that the offer is not interesting enough to motivate the different clients. The unclear situation in LINK Center is also shown in the internal handling of the errands, where roles, activities and responsibilities are not clear for different parties. Another problem is that the information system supporting the handling of the errands does not support the business well enough.

3.4 A client perspective on LINK Center

The case study has so far included two interviews with questioners and one interview with a knowledge resource. Though important to note, that these interviews can not be generalised, there are some interesting findings. The knowledge transferred by LINK Center according to the two clients ought to be direct, firm and clear. The answer must include the reference and the different ways to contact the knowledge resource. It is essential to quickly be able to get in touch with the source of the knowledge. Another issue is that the knowledge that is transferred must be applicable in the questioner's context. It should not be theoretical knowledge that isn't empirically grounded i.e. it should not be knowledge that isn't tested in practice. Theoretical answers are not only hard to understand they are also hard to employ in practice, which is the main reason why the questioners' major knowledge providers are their suppliers.

The interview with the knowledge resource identifies and strengthens the issues stated in the interviews with the questioners. It also identifies new interesting issues. One major problem identified by the knowledge resource is that the results from their projects do not reach the small and medium size enterprises (SME:s). This means that the knowledge developed by the knowledge resources never reaches SME:s. The knowledge resource means that there are some severe problems with LINK Center. First, the question is sent to too many different knowledge resources. Second, there a lack of norms in how the errands are to be handled. Finally, the true question is usually not the one on the paper, i.e. the questioner has either not been able to state a good question or LINK Center has distorted the question.

4. Possibilities and risks with a knowledge broker

Knowledge transfer is in itself a complex process. Therefore it is vital to reconsider the consequences of developing a broker business as a part of the knowledge transfer process. One has to be thoughtful about conditions, demands, possibilities and risks for the broker business within the context of the knowledge transfer process. The purpose of this section is to discuss the possibilities as well as the risk of adding a broker in the knowledge transfer process.

It is important to note that knowledge transfer can concern two extremes. On one hand all know-how is possible to convert to know-that, i.e. the knowledge is possible to articulate, which is rather easy to transfer. The other extreme is that the know-how is not possible to articulate at all and demands a high level of interaction between the knowledge resource and the questioner when transferring the knowledge. Stein (1996) use the concepts information and tradition in order to describe the two extremes, where information stands for transferring articulated knowledge and tradition for transferring knowledge through learning by doing.

4.1 The possibilities with a knowledge broker in knowledge transfer

The experiences from the study of LINK Center imply that a knowledge broker has some potentials or possibilities that can be explored to improve or support the knowledge transfer process. By looking into the knowledge transfer process we have chosen to focus on the critical action that are presented in the chapter 2.3. When a questioner states a question he/she will always articulate knowledge needs. This knowledge need might however be a non-valid one. This would have its cause in the questioner's lack of know-how and ability to identify the problems in the context. We believe that it is very important for the success of the knowledge transfer process that the question is valid. One of the roles that need to be within the broker business is to aid the questioner to ensure a valid question.

When the questioner have identified his/her knowledge need it is crucial to identify a suitable knowledge resource. Since the knowledge need often is new to the questioner it will be hard for the questioner to find an accurate source of knowledge. We believe that a broker business' key role is to connect questioners and knowledge resources by mediating knowledge needs. This concerns both that the questioner is aided in finding the source of knowledge and that the knowledge resource only gets questions that he/she is interested in and able to answer. In this sense the broker business have two clients – both the questioner and the knowledge resource.

When the question reaches the knowledge resource, he/she needs to interpret the question. In order to do so he/she needs to understand the question. Therefore it is essential that the question contains a description of the context, the questioners pre-understanding and the knowledge need. Further it is important that the knowledge

resource has the possibility to contact the questioner for clarifications and to discuss the problem directly. Therefore, the question must include a reference to the questioner. In order to articulate an answer to the question, the knowledge resource will use his/her know-how. Since some knowledge not is possible to transfer via know-that there might be a need for the knowledge resource and the questioner to interact directly. The direct interaction between these two parties can sometimes mean that they need to jointly “learn by doing”. Such joint learning activities might be initiated by the knowledge resource, but also by the questioner. The analysis of the errands from the pilot business at LINK Center indicates that direct contact between questioner and knowledge resource happens. This shall be seen as a success for a broker business since a consultant assignment often delivers organisation ability into an organisation. Therefore it is also important that there is a referent to the knowledge resource in the answer of the question. The interviews of the questioners related to LINK Center indicates that the questioners demand answers that are short and precise and that each answer has a reference to the specific knowledge resource.

As can be seen in the analysis of the errands in LINK Center there are situations when knowledge is possible to articulate and transfer via know-that. The role of the broker business in this situation is to provide a communicational infrastructure to mediate the answer from the knowledge resource.

The broker business also needs to develop their ability to mediate questions and answers in order to be efficient in handling future errands. As mentioned earlier one of the main reasons for having a broker business between a client and a provider is to facilitate the contacts between client and provider. Therefore, the broker business has to learn whether a mediated question and answer was successful or not, both for the questioner and the knowledge resource.

The questioner interprets the answer and internalises know-that to developed know-how and solves the problem in the context.

From the discussion above a number of potentials or possibilities of a knowledge broker have been identified. (see Figure 3) These possibilities are:

- Supporting the questioner to formulate an accurate knowledge need
- Finding an accurate source of knowledge for the knowledge need
- Connecting the questioner and the knowledge resource
- Finding accurate problems (questions) for the knowledge resource
- Supplying with an infrastructure as a support in the mediation of knowledge and contacts

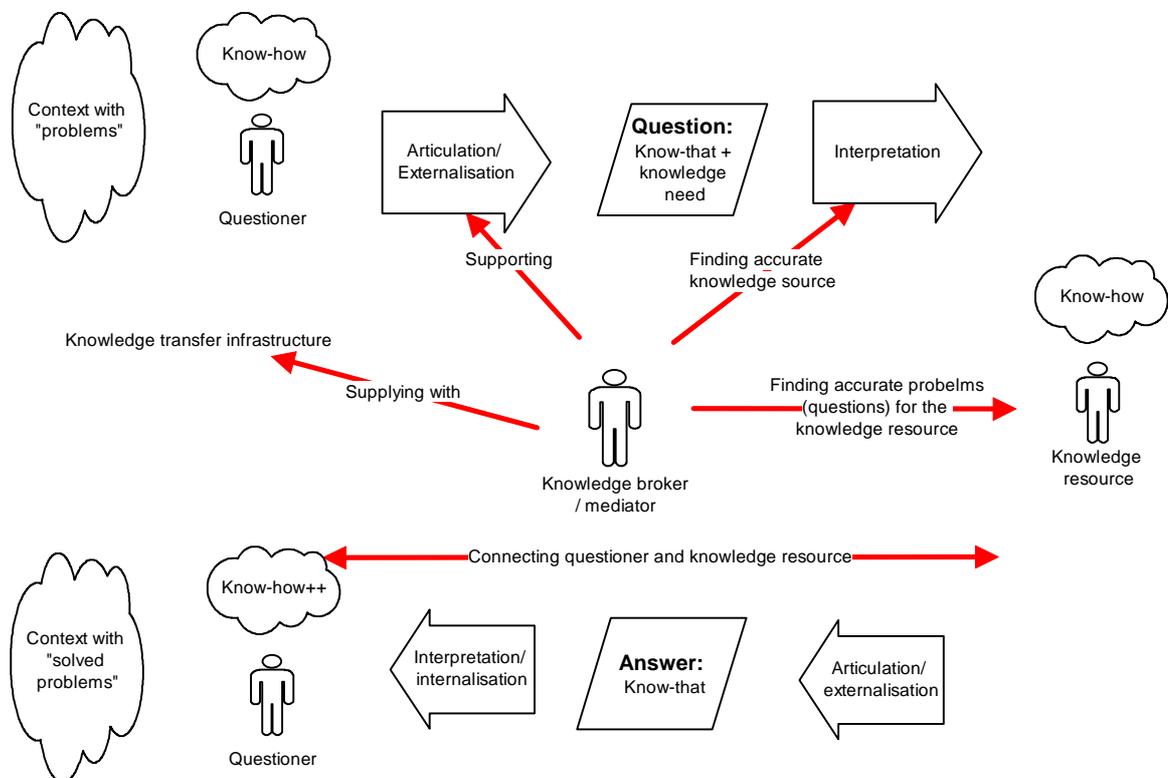


Figure 3: The possibilities of a knowledge broker

4.2 The risks with a knowledge broker in knowledge transfer

As can be seen in the discussion above there are potentials in having a broker business as a part of the knowledge transfer process. But we also have to consider the consequences and possible risks in adding an extra actor into the knowledge transfer process.

In order to support the questioner to formulate an accurate knowledge need the broker must understand the knowledge need in the questioners context. There is however a risk that the broker isn't able to guide the questioner in formulating valid questions. The reason for this might be a lack of competence at the broker or misunderstanding between the questioner and the broker. It is very important to stress that the question must be formulated in the questioner's language. The broker business must not distort the question. Also the answer transferred from the knowledge resource to the questioner via the knowledge broker must not be distorted.

To find an accurate source of knowledge for the knowledge need it is important for the knowledge broker to have a choice of different knowledge resources. There is, however, a potential risk that the knowledge broker is not enough acquainted with potential knowledge resources competence, interest and possibilities to answer the question. We can see two causes for such a risk. One is that the knowledge broker does not have enough information about potential knowledge resources and the other one is that the knowledge broker doesn't have developed enough experience in finding suitable knowledge resources. One consequence is that the knowledge broker might send the same question to several knowledge resources, which might frustrate the questioner, and the broker might loose control of the question.

When connecting the questioner and the knowledge resource it is essential to find a knowledge resource that has not only the competence to answer the question and to solve the problem but also find a resource that has time and prioritise the question. The analysis of LINK Center shows that the knowledge resources have not been motivated enough to answer the questions rapidly. Reasons to this problem is that there has not been an accurate amount of errands involving specific knowledge resources and that the status of LINK Center errands is to low at the knowledge resource. Another reason for the low motivation at the knowledge resource is that the knowledge broker hasn't mediated relevant problems (questions) to the knowledge resources.

Since the knowledge broker supplies with an infrastructure as a support in the mediation of questions and answers it is important to realise that such infrastructure (e.g. information systems) need to be designed from the stakeholders' point of view. There can see a risk that the infrastructure is created from the knowledge brokers point of view, which could cause an unwanted power relationship to other stakeholders. By not using a sociotechnical approach there is a risk that the possibilities with the technique is over-estimated, which will have the consequence that people can not act through the system. The infrastructure must therefor support not only the broker but also the other participants in the knowledge transfer process. The people in the process must also feel that they are involved in the development of the infrastructure to be able to accept it and use it.

In order to motivate all participants in the knowledge transfer process it is important to create win-win situations that support the co-operation between the knowledge broker and the knowledge resources. There is a risk that the knowledge broker creates a situation that the knowledge resources might find competitive. We mean that a knowledge broker is a knowledge broker and not a knowledge resource and vice versa. There has to be clear definitions of the roles. It is therefore very important to define the broker business (as done in the case study) and position the business in relation to other stakeholders.

Since the knowledge transfer process is organised in a business logical way problems that occur in the process will of course affect the conditions and consequences of latter actions within the process. The potential risks elaborated in this section are a matter of the way that the actors involved choose to regard the role of the broker in the knowledge transfer process.

5. Conclusions

In this paper we have investigated the potentials of a broker in a knowledge transfer process and the possibilities as well as the risks in adding an extra actor into the knowledge transfer process. As theoretical basis we have looked into how a knowledge transfer process can be constituted. Our empirical experiences are based on a case study of LINK Center. LINK Center operates as a broker in order to support the creation of contacts between questioners and knowledge resources. Further, we have discussed the possibilities and the risks of a broker business in a knowledge transfer process context by using the theoretical basis and the case study of LINK Center.

Conclusions that can be drawn from the discussion of adding an extra actor, i.e. a knowledge broker, into the knowledge transfers process, is that there are five potentials or possibilities that the knowledge broker can have in order to improve the process of transferring knowledge. These possibilities are:

- supporting the questioner to formulate an accurate knowledge need
- finding an accurate source of knowledge for the knowledge need
- connecting the questioner and the knowledge resource
- finding accurate problems (questions) for the knowledge resource

- supplying with an infrastructure as a support in the mediation of questions and answers.

By performing these functions also implies an added risk for not succeeding with the knowledge transfer process. The major risks are that the knowledge broker:

- distorts the question rather than supporting the questioner in formulating the question
- doesn't find an accurate source of knowledge for the question
- distorts the answer from the knowledge resource when mediating the answer to the questioner
- doesn't only acts as a broker, but also as acts as a knowledge resource and in that way becomes a competitor to other knowledge resources
- doesn't manage to motivate the potential questioners and the knowledge resources in participating in the broker's knowledge transfer process.

The case study at LINK Center shows that these risks need to be coped with since experiences from the pilot business indicates problems that corresponds to these risks. At LINK Center there also exists an over-optimistic faith concerning the independence of the computerised information system. This computerised information system need to support the human actors and their actions. The knowledge transfer process need to be developed based on sociotechnical principles where the challenge is to find a good balance between human actors and an efficient IT-support.

When looking into the broker business performed in LINK Center one can identify that there are variations in behaviour depending on the type of knowledge that is to be transferred. The different characteristics of the answer (in terms of knowledge) will affect the procedure of interaction between different parties. On one hand one can see that some of the knowledge that is transferred is know-that, which means that the knowledge broker can mediate answers. This communication variance is called direct-answer. On the other hand one can also see that some of the knowledge is not possible to mediate through LINK Center – a direct contact needs to be established between the questioner and the knowledge resource. In this communication variance (direct-contact), the knowledge broker will play the role as contact mediator since the knowledge isn't transferable. This pattern of action indicates the need for direct interaction between the knowledge resource and the questioner in order to establish knowledge transfer.

Experiences from the case study also show the importance of working with other resources than the ones contracted as knowledge resources. Other resources are potential knowledge resources. By working with other parties a dynamic development of the business is possible – through development of relationships with existing and new partners.

Knowledge that isn't possible to articulate to know-that is called tacit knowledge. Such knowledge needs to be transferred through practising. However, we would like to emphasise the importance of trying to convert know-how to know-that since articulated know-how is a base for reflection and therefore development of the organisation's ability.

In order to develop a broker business, such as LINK Center it is essential to retain and refine experiences from the mediation process in order to enable continuous improvement of the LINK Center's organisational ability. It is essential to stress the importance of retaining experiences about the mediation process since the core business is and should be to mediate knowledge and mediate contacts. A knowledge broker business does not need to collect knowledge about the issues dealt with in questions from questioners. In doing so, it is a risk that the knowledge broker and its knowledge resources start competing instead of co-operating. We believe an attitude towards continuous learning about the mediation process will ensure that the knowledge broker in the future will manage to mediate correct contacts and knowledge rapidly.

References

- Albaum G., Straskov J., Duerr E., Dowd L. (1994) *International Marketing and Export Management*. Addison-Wesley Publishing Company.
- Goldkuhl G., Lyytinen K. (1984) *Information systems specification as rule reconstruction*, in Bemelmans T. (Ed, 1984) *Beyond productivity: Information systems development for organisational effectiveness*, North-Holland, Amsterdam
- Goldkuhl G., Nilsson E. (2000) *Organisational ability – constituents and congruencies*, submitted to the book on "Knowledge Management in the sociotechnical world: the graffiti continues"
- Goldkuhl G., Röstlinger A. (1999) *Expanding the scope – from language action to generic practice*, In proc of the 4th Int. Workshop on Language/Action Perspective (LAP'99), Jönköping International Business School
- Habermas J. (1984) *The theory of communicative action I. Reason and the rationalization of society*, Polity Press, Cambridge

- Lind M., Goldkuhl G. (1997) *Reconstruction of different business processes – a theory and method driven analysis*, In proc of the 2nd Int. Workshop on Language/Action Perspective (LAP'97), Eindhoven University of Technology
- Lind M., Goldkuhl G. (1998) *Service Development as Action and Communication – from process reconstruction to process redesign*, Accepted to the twelfth biennial ITS conference "Beyond Convergence", 21-24/6-1998, Stockholm
- Nonaka I., Takeuchi H. (1995) *The knowledge creating company*, Oxford University Press
- Polanyi M. (1966) *The tacit dimension*, Routledge & Kegan Paul, London
- Stein J. (1996) *Lärande inom och mellan organisationer*, Studentlitteratur
- Sveiby K-E. (1995) *Kunskapsflödet – organisationens immateriella tillgångar*, Svenska dagbladet förlag AB