

# Development of organisational ability through team-based reconstruction – going from personal to shared contextual knowledge

by

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## Abstract

Organisations can be interpreted as a collection of actors who produce value for clients. In order for organisations to stay competitive there is a need for organisations to continuously develop their ability. An organisation's ability is determined by its ability to effectively apply existing knowledge to create new knowledge and to take action that form the basis for achieving competitive advantage from knowledge-based assets. One mean for developing the organisational ability is to establish a mutually accepted understanding of the context in which the actors are acting. One important part of the organisation's knowledge creation processes is to facilitate the sharing of personal knowledge. A condition for developing the organisational ability is to expand the amount of shared knowledge to an appropriate level. One type of knowledge that needs to be shared among different actors within the organisation is the knowledge about how and in which order actions are performed (contextual knowledge) in order to satisfy client needs. In this paper an approach for team-based reconstruction, used for going from personal to shared contextual knowledge, is presented. The approach bears on the foundation of theories about knowledge management for understanding the process of externalisation and theories about language action for understanding organisations. Experiences from three case studies are presented. Team-based reconstruction can be used for 1) going from personal knowledge to shared contextual knowledge in an efficient way, 2) arriving at a foundation for efficient organisational co-ordination, 3) arriving at a base for development work, as well as 4) organisational learning.

## 1. Introduction

Organisations can be understood as a group of actors who have a mission to create value for its clients. The organisation can then be viewed as "... some actor(s) – based on assignments from some actors – makes something in favour in some actor(s), and sometimes against some actor(s), and this action is based on some values, rules, knowledge and competence" (Goldkuhl & Röstlinger, 1999).

All organisations are driven by some kind of rationality, where the management literature of the late 90's (cf. Davenport 1993; Hammer, 1996) have emphasised the need for an efficient value production to satisfy customer needs. One important mean to reach such efficiency is the organisations' ability to co-ordinate different organisational actions (Castells, 1996; Keen, 1997), performed by different actors. This means that there are several actors involved in the organisations' value production. Each action performed by its actor is an important link in the value chain.

Knowledge management is an issue that is on the agenda as an important mean to arrive at competitive advantage by continuously developing organisational ability. "The knowledge advantage is sustainable because it generates increasing returns and continuing advantages" (Davenport & Prusak, 1998). An organisations' ability is determined by its ability to effectively apply existing knowledge to create new knowledge and to take action that form the basis for achieving competitive advantage from knowledge-based assets. Unlike material assets, which decrease as they are used, knowledge assets increase with use (ibid.). One purpose with knowledge management is to manage the knowledge-based assets.

Knowledge is an essential ingredient in all business practice (Nonaka & Takeuchi, 1995). Knowledge is needed when performing actions that is of direct value for the client, and also when co-ordinating these actions. Each actor is expected to have sufficient knowledge for performing his/her assigned actions, where these actions need to be seen as parts of the value chain. The understanding of

the wholeness, i.e. action logic as contextual knowledge, is important both for performing and co-ordinating actions (Goldkuhl, 1992).

Each actor in the organisation normally have his/her own understanding of the value chain, i.e. which actions to perform as well as the order of actions, for creating value for the organisations' clients. This understanding can be more or less elaborated. Different actors perform the actions in the value chain, which implies that a mutual understanding of the contextual knowledge among the actors is needed, in order to manage an efficient value production. One problem is, however, that different actors understanding of the value chain often deviate. The contextual knowledge needs to be articulated and shared among the actors in the organisation. A common language and a mutually accepted view need to be established (Nonaka, 1994). Each actor needs to share their individual knowledge with other actors.

The process of creating and sharing contextual knowledge implies a need for actors to move from the practice to an arena of reflection. The actors need to talk about and reflect over their practice in which they normally are performing their actions. The actors need to convert their know-how to know-that in order to be able to share their knowledge. The process of going from know-how to know-that is called reconstruction (Goldkuhl & Lyytinen, 1984).

Organisations of today need to continuously develop in order to stay competitive (Davenport & Prusak, 1998). Development work often emphasise the need to be aware of the way that business is performed today. Contextual knowledge needs to be created in order to be able to make grounded decisions about the development of the organisation. The process of reconstruction can be regarded as an essential part of development work. The process of creating contextual knowledge, i.e. the process of reconstruction, demands a shift to discourse (Habermas, 1984). Habermas (ibid.) has in his theories explicated the concept of discourse and argumentation.

One unanswered quest is to find the balance between efforts concerning development work and business practice. It is common that there is a conflict between business practice and assigning necessary resources for development work. Development work is often given a low priority since such work does not contribute with direct value for the organisation's clients. Such short-term strategy will jeopardise the possibility to stay competitive on a longer-term basis. Therefore, there is a need to be rational when performing different kind of development work. Processes for knowledge creation and sharing of knowledge need to be efficient.

The purpose of this paper is to present an efficient approach for arriving at shared contextual knowledge, team-based reconstruction, and its implications on the development of organisational ability. This approach bears on the foundation of theories about knowledge management for understanding the process of externalisation, i.e. the process of reconstruction, and theories about language action for understanding organisations. Experiences gained from three action-oriented case studies are used as inspiration to form this approach.

## **2. Theoretical framework**

### **2.1 Knowledge for human action in organisations**

One taxonomy of knowledge often used is by making a distinction between know-how and know-that. Know-how is the ability to act, talk and understand in social situations. Know-how is often related to the notion of competence. Know-that is explicit knowledge of how actors can act, talk and understand (Goldkuhl & Lyytinen, 1984). Actors use know-how when acting.

Goldkuhl & Nilsson (2000) argue for that collective competence as the constellation of collective resources and different individuals' 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.

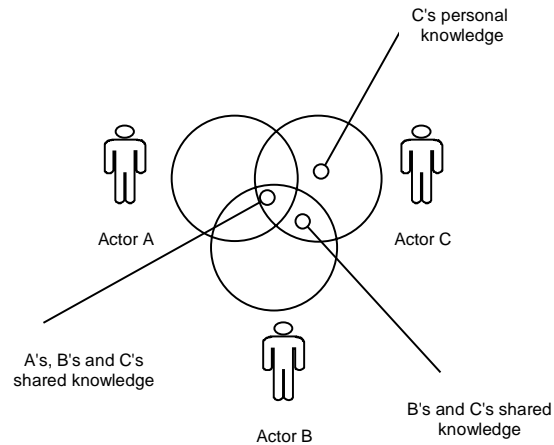
The knowledge in the organisation is one of the important assets to reach competitive advantage (Davenport & Prusak, 1998; Nonaka & Takeuchi, 1995).

An organisations' total amount of knowledge used for producing value for its clients can be called organisational ability (Goldkuhl & Nilsson, 2000). Goldkuhl & Nilsson (ibid.) considers organisational ability as to be constituted by the following parts:

- individual knowledge
- inter-subjective institutional knowledge
- artefact functionality
- linguistic and pictorial descriptions of abilities

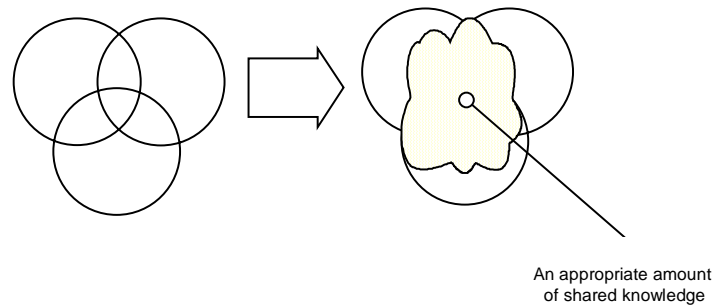
In the actual moment of acting the actor use his/her individual knowledge, i.e. uses his/her know-how, to perform the act. In this context we regard *individual knowledge* as the collection of *personal*<sup>1</sup> and *shared knowledge*. We use shared knowledge in the meaning of inter-subjective knowledge.

In the figure below the relationship between personal and shared knowledge is shown. Each actor (A, B, C) have their personal knowledge represented by each circle. Some of the actors' personal knowledge could be shared between several actors. In the figure below the shared knowledge between B and C ( $B \cap C$ ) as well as the shared knowledge between all the actors ( $A \cap B \cap C$ ) are indicated.



**Figure 1: Personal and shared knowledge**

One aim for an organisation's knowledge management is to continuously ensure the progress towards an appropriate amount of shared knowledge. The shared knowledge in an organisation is among other things derived from different actors' personal knowledge. Shared knowledge is also obtained through group-based learning (Agyris & Schön, 1996). The figure below shows the organisations strive for an appropriate amount of shared knowledge, where a greater part of each actor's personal knowledge becomes shared between all actors.



**Figure 2: The organisations strive for extended shared knowledge**

One important aspect of knowledge in general is the contextual knowledge. From an organisational point of view contextual knowledge is an important asset. This type of knowledge is in this context used as the concept for knowledge about the action logic, i.e. the knowledge about which actions, and in which order, needed to produce value for the organisations' clients. It is common that the contextual knowledge among the actors in the organisation deviate. Each actor's contextual knowledge<sup>2</sup> is the basis for the specific actor's expectations about how others will act. It is therefore vital that contextual knowledge in the organisation is shared and made explicit. Knowledge management is in this context used in the meaning of going from personal to shared contextual knowledge.

<sup>1</sup> The concept of personal knowledge is elaborated by Rolf (1995).

<sup>2</sup> as a part of each actor's individual knowledge

## 2.2 Reconstruction: An important part of knowledge management

The concept of reconstruction is often used to emphasise that something is recreated. In order to capture the contextual knowledge within an organisation there is a need to reconstruct existing practice. By existing practice we mean the way that business is performed today. By reconstructing existing practice the action logic is recreated in the meaning that the action logic becomes explicit. Something existing, but not fully understood, is made explicit through articulation and description.

An organisation is, among other things, constituted by people acting and communicating (Reijswoud, 1996; Winograd 1988), i.e. communicative actions. There are rules and agreements for what actions to perform and what “action object” to use and to produce in the fulfilment of these actions (Lind & Goldkuhl, 1998). Such action patterns and rules are social constructs, which can be the result of either deliberate design or continuous evolution. In this paper reconstruction is used in the sense of reconstructing social constructs, i.e. articulating the way that people communicate with and act towards each other.

Within the area of knowledge management attendance is directed towards similar processes. Nonaka & Takeuchi (1995) call the knowledge conversion process of turning tacit knowledge to 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 a formal, systematic language.

Reconstruction includes articulation of different conceptions, action patterns, rules and business language (Goldkuhl & Lyytinen, 1984; Habermas, 1979). In some sense tacit, or implicit, knowledge (Polanyi, 1966) needs to be focused upon and made explicit. Tacit, or implicit, knowledge is that knowledge which is gained by experience rather than study and has not been reflected upon purposefully. Consequently, tacit knowledge is frequently appealed to in practice but rarely articulated or even recognised. In the discussion in previous section, a distinction has been made between personal and shared knowledge, and both types can be either tacit or cognitively explicit. When performing a reconstruction both cognitively explicit and implicit knowledge, personal as well as shared are elicited and articulated.

Reconstruction is about converting know-how to know-that. An effective reconstruction process will establish a number of important results (Lind & Goldkuhl, 1998):

- Parts of the business language (vocabulary), different conceptions, and action rules and patterns are made explicit
- Unclear meanings are elicited and clarified among participants
- Participants agree upon different meanings
- Shared understanding of current practice in the organisation among participants is established
- A basis for evaluation and critique of current practice is created
- Quality assurance concerning future changes

## 2.3 The need for directing attendance during reconstruction

Reconstruction, as stated in the section above, is about articulating individual knowledge. Implicit knowledge becomes explicit through reconstruction. It is however important to note that some individual knowledge is not possible to articulate since *all* know-how is *not* possible to describe. “We can know more than we can tell” (Polanyi, 1966, pp.4). A distinction can therefore be made between knowledge that is possible to articulate and knowledge that is not possible to, or is not yet articulated (Hedestrom & Whitley, 2000).

Since non-articulated knowledge might be unaware for the individuals it is very important to find ways to direct the attendance towards aspects that needs to be and are possible to articulate. The hidden assets, i.e. parts of the individual knowledge, need to be mined (Lauder & Lind, 1999). Such process of mining, i.e. the process of reconstruction, is an inter-play between stating and answering questions. The answers are described through different kind of models (textual or graphical).

An important issue behind articulating knowledge is what questions that are relevant to ask in order to mine the non-articulated knowledge. A question is a communicative act based on intentions and believes. A stated question is a result of the need for knowing something about something, where the question builds on some implicit or explicit perspective (ways of thinking).

Dietz et al (1998) discusses that different driving forces can be used in modelling situations. Dietz et al (ibid.) claims that both method and theory can in a modelling situation, guide an analyst<sup>3</sup>.

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<sup>3</sup> See Lind & Goldkuhl (1997) for a discussion about theory driven reconstruction

Sometimes a theory is the main driving force, where the analyst utilises the generative power of the theory to put questions. In other situations a method might be the main driving force. In such a case, the analyst is using the modelling capabilities (notational and procedural rules) of the method as the main question generator. It is however important to note that the business situation being studied must be taken into consideration when generating questions. A condition for generating contextual knowledge is sensitiveness for context specific details, i.e. directing attendance in the dialogue to aspects that are of importance for the contextual knowledge, which demands an inspirational source built upon what the essentials of an organisation are.

One purpose of using methods in the process of reconstruction is to document the answers corresponding to the stated questions. Different types of models within the method are used to document answers. Examples of such model types are Action Diagrams (Goldkuhl, 1992), Process Diagrams (Lind & Goldkuhl, 1997) and Co-operation Diagrams (Röstlinger et al, 1997). Methods are however also used to state accurate questions. Documented answers are important sources of inspiration when stating new questions. The use of methods should be integrated in the process of reconstruction. Since methods are based on underlying perspectives (c.f. Goldkuhl et al, 1997) there is a need for a congruence between the perspective used for stating questions and the perspective used for documenting answers.

Examples of different theories as inspirational sources are the Business Action Theory (Goldkuhl, 1998) and the Theory of Practice (Goldkuhl & Röstlinger, 1999). The intent of both these theories is to describe and explain business interaction as well as being theoretical lenses for organisational change. The theories can be used as interpretative frameworks when reconstructing, but they need to be supplemented by congruent change methods (Lind & Goldkuhl, 1997). Theories and methods applied to the reconstruction process are used for inspiration and asking generative questions, i.e. direct attendance towards the essentials in the organisation and thus stimulate and channel our creativity.

## **2.4 Interaction as mean for organisational learning**

Knowledge management is an important mean for competitive advantage and to develop the organisational ability. Since an organisations' ability is determined by its ability to effectively apply existing knowledge, to create new knowledge and to take action, an important aspect to address is organisational learning. In general an organisation can be said to learn when it acquires information (knowledge, understanding, know-how, techniques and practices) of any kind and by whatever means (Argyris & Schön, 1996). Therefore there is a need for actors in the organisation to meet and to interact with each other in the reflection arena in order to discover the hidden rationalities that are built into every day organisational practice and the patterns of causality of which practitioners themselves are often unaware. Such organisational task knowledge can be described as action knowledge, which consists of, espoused theories and theories in use (ibid). The interaction during reconstruction between actors helps us to distinguish between, and to articulate, espoused theories and theories in use. Organisational knowledge is embedded in routines and practices, which may be inspected and decoded even when the actors who carry them out are unable to direct, put them into words.

An informal community of social interaction provides a forum for nurturing the emergent property of knowledge and developing new ideas (Nonaka, 1994). The enlargement of an actor's knowledge within an organisation initiates the process of organisational knowledge creation. "One way to implement the management of organisational knowledge creation is to create a 'field' or 'self-organising team' in which individual members collaborate to create a new concept" (ibid., pp.22). Different co-operation and collection procedures (Goldkuhl et al, 1997) can be used in the knowledge creation process. Examples of co-operation and collection procedures are individual interviews and seminars.

There are two arguments for interaction between several actors in the knowledge creation process. First, the meeting between several actors within an organisation is a catalyst to expose and articulate knowledge. Second, the creation of contextual knowledge is about creation of knowledge concerning the action logic in the value chain in which several actors act. It is therefore essential to create cross-functional teams that take part in the knowledge creation process. Contextual knowledge needs to be developed through interaction between different actors, who are parts of such cross-functional team. A process of reconstruction with interaction between several actors is a way to expand the amount of shared contextual knowledge through externalisation of each actor's individual knowledge (shared knowledge and personal knowledge).

### **3. Reconstruction in practice**

This section presents three case studies, in which we have participated, where reconstruction has been an essential part. The description of the case studies focus on context and the process of reconstruction as well as experiences stemming from our involvement. The presentation of the case studies is the basis for a comparison and discussion performed in the next section.

#### **3.1 Case study 1: Structo**

The first case study was performed at a company called Structo. Structo is a manufacturing company, which mainly transforms steel into pipes for hydraulic cylinders. In this case study a change analysis project was conducted, which was divided into two phases; business diagnosis as well as generation and evaluation of measures. The purpose of this project was to develop a method for business process oriented change analysis. At Structo there was a need for integrating administration and production. Therefore a change analysis was initiated in order to reconstruct and develop the business processes. A project group was formed consisting of several persons from different departments within Structo and two researchers, one of whom is an author of this paper.

In the beginning of the project a reference group was formed, which consisted of different representatives from the organisation. The members of the reference group were selected due to their deep knowledge from different segments of the organisation. These representatives were the respondents during the interviews that were conducted. When performing reconstruction of existing practice different actors in the reference group were interviewed on multiple occasions. The reconstruction was a natural part of the change analysis project.

One researcher together with a Structo representative performed the interviews over an extended period of time. After each interview the researcher and the Structo representative refined generated models. In the beginning the models were fairly incoherent, but since the models were being reflected upon between each interview it was possible to identify some uncertainties about reconstructed practice. These uncertainties were elaborated either by going back to the respondent and posing clarifying questions or they were focused during the next interview. In order to validate the understanding that was gained about the organisation a larger seminar was held to verify and manifest the described way that the organisation worked. When the reconstruction was performed the prior generated models (from earlier interviews) were used as input for the next interview. We had furnished Structo with a tool to develop inter-personal understanding of how the organisation was working.

Due to the complexity of the change analysis project performed at Structo there was a need to gain a very deep understanding of the organisation. The procedure described in this section required substantial effort, but as a consequence a thorough understanding of the organisation was developed. The Business Action Theory was used in order to focus discussion on different business processes.

#### **3.2 Case study 2: Nässjö Inredningar**

The second case study was performed at a company called Nässjö Inredningar AB (NI). NI is an organisation that mainly manufactures wood interior decorations for public environments. The purpose of this project was to develop a new change method especially for the Swedish wood industry. At NI there was a need to develop an integrated view on planning and information procedures. In this project a project group was formed consisting of persons from different departments at NI and us (the authors) as researchers.

The reconstruction at NI was seminar-based where different professions from the organisation were represented. The reconstruction was divided into two parts; an initial one-day meeting and another meeting about a week later. The first meeting focused upon the collection and modelling of existing practice in order to elicit an initial understanding of how the organisation worked. The purpose of the second meeting was to validate the models elicited in the first meeting, after a period of reflection. Another important aim of the second meeting was to initiate discussion about the existing practice and to start to question different parts of the existing business processes at NI. During the reconstruction representatives from NI almost immediately started to question how they were doing different things today. We had given them an instrument to understand their own organisation and to look at it from different levels of abstraction.

In this project the reconstruction was not performed in an early phase. The motive for this was that the new method for change work initially did not emphasise the need to do reconstruction. The method instead emphasised more or less unstructured data collection. However, as the project proceeded we amassed a lot of unsorted data about the organisation that made constructive discussion about the data problematic. At this time we recognised a need to relate collected data to different

contexts in the organisation. Therefore, a reconstruction was conducted, which made it possible to relate different aspects to specific parts of the organisation and to understand these aspects better. This understanding of how business was performed at NI was necessary in order to proceed with the change work. In this case the Business Action Theory was a good support to help focus the discussion about different business processes.

### 3.3 Case Study 3: Hallsbergs Psychiatric Clinic

The third case study was performed at Hallsberg Psychiatric clinic (HPC), which is a slightly different type of organisation than the organisations presented in the other two case studies. HPC is a part of the social medical care organisation in Sweden. HPC is an organisation that treats psychiatric illness on long- and short-term bases. The professions that are represented at the clinic are secretaries, assistants, nurses, psychologists, therapists, doctors and organisation executives. The purpose of this project was to reconstruct how they were performing the work at the clinic. The clinic had expressed a need to understand, question and evaluate how the work was performed as a part of a bigger quality project. In this reconstruction a project group was formed consisting of several persons representing different roles at HPC and us (the authors) as researchers.

The reconstruction at HPC was seminar-based where different professions from the clinic were represented. The reconstruction was divided into two meetings with a week between them. At the first meeting, data was collected and modelled in order to achieve a preliminary understanding of how the clinic worked. At the second meeting these models were validated and refined. At the second meeting there were also discussions about the existing practice as well as suggestions about better ways of doing things.

In the other two case studies the Business Action Theory was used as a support and source for inspiration. Since the Business Action Theory did not give enough support due to its too specific business categories, we used the Theory of Practice instead. This theory is based on reaching an agreement about, and fulfilment of commissions, and was the basis for the discussion about HPC.

## 4. Analysis: Team-based reconstruction

In the case studies presented above there was a need to achieve a mutual understanding of how each organisation works. The case studies are compared in the table below.

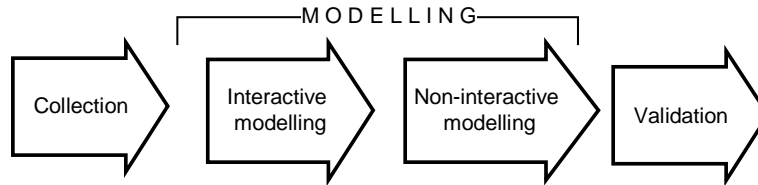
Category / Org.	Structo	NI	HPC
Type of project	Change analysis project	Change project	Reconstruction project
Motives for reconstruction	To understand the organisational practice in the change analysis project	To understand the unsorted data in an organisational practice context	To find arguments to use when discussing existing practice as well as future changes
Co-op. Procedures	Individual interviews	Seminars with the project group	
Directing attendance	Business Action Theory		Theory of Practice
Used model types	Action diagrams Process diagrams		Action diagrams Process diagrams Co-operation diagrams

**Table 1: An overall comparison of the case studies during reconstruction**

In all case studies a reconstruction was performed in order to develop shared contextual knowledge for different purposes. As can be seen in the table above, the reconstruction process took a different path between the case studies. There are differences in what context reconstruction was performed as well as differences in which collection and co-operation procedures were used. Different theories and different model types have also been used to direct attendance in the process of reconstruction. However, one can also find similarities between the reconstruction paths. Three activities, which appear in all case studies, have been identified. These activities are performed in order to state and answer questions as well as express answers in a structured way. These activities (see figure below) are:

- *Collection*, where questions are stated
- *Modelling*, where answers are expressed and structured by the use of different model types. The activity of modelling is divided into two different sub-activities:

- *Interactive modelling*, where answers are expressed and structured together with the respondent(s)
- *Non-interactive modelling*, where answers are further structured without involvement of the respondent(s)
- *Validation*, where a mutual agreement about the structured answers is developed between respondent(s) and investigator(s)



**Figure 3: Activities in the reconstruction process (simplified version)**

The structure of the reconstruction process shown in the figure above has been used to categorise the experiences from the case studies. Each activity in the reconstruction process is characterised in the four tables shown below. When analysing the case studies a number of categories that can be used to distinguish similarities and differences between the cases have been generated (through induction). These categories are purpose, action, result, co-operation and collection procedure.

In order to understand the contents of an activity there is a need to express those actions that are performed within the activity. Human actions produce some kind of result, which is based on the purpose of the activity. The result should be of value to the receiver of the result. In order to come to the result, different kind of co-operation and collection procedures can be used, where different actors have different roles.

Category /Case	Structo	NI	HPC
<b>Purpose</b>	To gather <i>very</i> detailed data about the existing practice in the business.	To gather <i>rather</i> detailed data about the existing practice in the business	
<b>Actions</b>	Asking questions		
<b>Result</b>	Answers to questions (unformalised) and <i>initial contextual knowledge</i>		
<b>Co-op. procedure</b>	Interviews with one respondent at a time	<i>Seminar</i>	

**Table 2: The implication of collection during reconstruction**

Category /Case	Structo	NI	HPC
<b>Purpose</b>	To document and structure answers according to used methods <i>To mine the organisation to gain understanding of existing practice</i>		
<b>Actions</b>	Documenting answers Structuring answers Clarifying answers		
<b>Result</b>	Preliminary models <i>Extended amount of contextual knowledge</i>	Preliminary models <i>Extended amount of contextual knowledge</i> Log book	
<b>Co-op. procedure</b>	Interviews with one respondent at a time	<i>Seminar</i>	

**Table 3: The implication of interactive modelling during reconstruction**



Category /Case	Structo	NI	HPC
<b>Purpose</b>	To refine the preliminary models and <i>the contextual knowledge</i>		
<b>Actions</b>	Refining the models (further structuring) Check congruency Analysis		
<b>Result</b>	Log book, processed models and other documents, need for revision of models by obtaining new information and <i>refined structure of contextual knowledge</i>	Processed models and other documents, need for revision of models by obtaining new information and <i>refined structure of contextual knowledge</i>	
<b>Co-op. procedure</b>	Individual work for the investigator(s) (respondent is not taking part)		

**Table 4: The implication of non-interactive modelling during reconstruction**

Category /Case	Structo	NI	HPC
<b>Purpose</b>	<i>To arrive at a mutual agreement concerning the structured answers and an appropriate amount of shared contextual knowledge</i>		
<b>Actions</b>	Presentation, discussion and stating acceptances		
<b>Result</b>	A deep understanding of existing practice (both for internal and external parties) Accepted models <i>An extended/appropriate amount of shared contextual knowledge</i> Need for revision of models by obtaining new information Need for clarification through restructuring	A <i>rather</i> deep understanding of existing practice (both for internal and external parties) Accepted models <i>An extended/ appropriate amount of shared contextual knowledge</i> Need for revision of models by obtaining new information Need for clarification through restructuring	
<b>Co-op. procedure</b>	Continuous verification at recurrent interviews as well as at a seminar	<i>Seminar</i>	

**Table 5: The implication of validation during reconstruction**

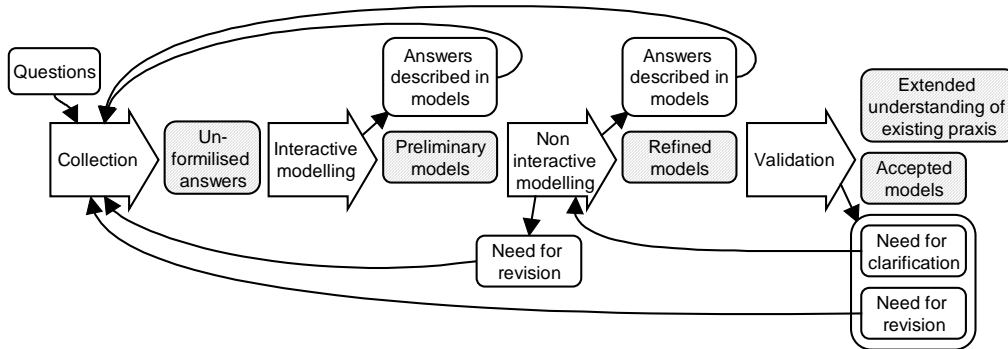
When scrutinising the tables above one can see that there is interaction between the different activities. The result of the whole reconstruction process is to arrive at a mutual understanding of existing practice in the organisation. Different models are used and continuously improved throughout the reconstruction process, where a shared understanding of existing practice is developed in a hermeneutic way. The models are the recordings of an understanding upon which agreement is to be reached. Agreement, then, is achieved by progressive mutual commitment to, or acceptance of, the understanding expressed in evolving models. We believe that the social world, where human beings interact, is co-ordinated through promises and acceptances (Winograd, 1988).

The actors in the organisation need to validate models in order to ensure high quality and that the models accurately reflect the action patterns, i.e. reflect upon the contextual knowledge, within the organisation. Such validation can lead to a need for revision, i.e. new questions have to be asked, as well as establishing points of clarification. The difference between revision and clarification is that revision is a need for complementary knowledge from the actors involved and the clarification is a need for restructuring of the already articulated knowledge. The clarification can be done by the non-interactive modelling activity, but the revision means that there is a need to go back to the collection activity. The non-interactive modelling activity might also lead to further need for revision.

In all of the case studies collection and interactive modelling were intertwined. In the collection activity questions are asked and the answers of the questions are expressed and formalised in different models during the integrative modelling activity. The generated models will help the participants to focus on context related aspects, which will result in new questions to ask in the collection activity. When the participants feel that the model complexity gets too high, there is a need to move on to the non-interactive modelling activity, i.e. when a certain degree of saturation has been reached with

respect to comprehending a mass of answers there is a need to move on.

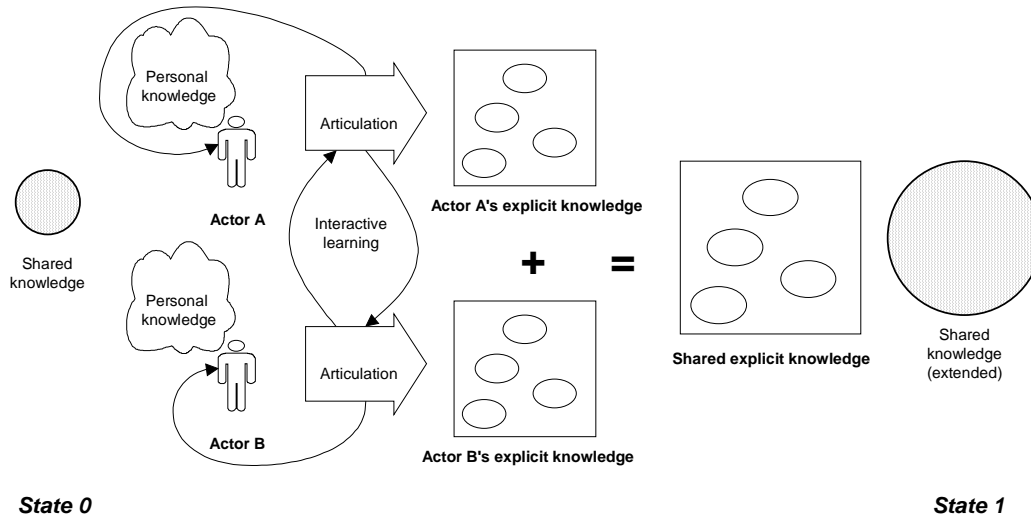
The figure below describes the reconstruction process based on the reasoning above. The figure is a further elaboration of Figure 3. The difference between the two figures is that we now have accentuated the purpose of reaching mutual understanding and agreement.



**Figure 4: The reconstruction process: Reaching understanding and agreement**

In this section an analysis of different ways of performing reconstruction have been performed. We would strongly emphasise the potential in performing collection and interactive modelling as well as validation seminar-based. The sum of the knowledge held by the participants in the seminar group need to cover the action logic in the organisation. By team-based reconstruction implies a high degree of seminar-based co-operation and collection procedures during reconstruction. Through a wide participation in the process of team-based reconstruction an appropriate amount of shared contextual knowledge can be reached. The aim is that this shared contextual knowledge is based on a mutual understanding and agreement about how the organisation works.

The figure below shows the aim with team-based reconstruction; to expand the shared contextual knowledge through interaction and articulation. This is done by making each actors' (actor A and actor B)<sup>4</sup> personal knowledge explicit. By having these actors in the same room at the same time interacting they will both learn from each other and learn themselves by just articulating their own knowledge. Each actor contributes with his or her personal knowledge (that is made explicit) in order to arrive at a shared explicit knowledge. The process of making the knowledge shared is a continuous process.



**Figure 5: The process of team-based reconstruction - reaching an extended amount of shared knowledge**

<sup>4</sup> Note that the number of actors in the seminar should be more than two.

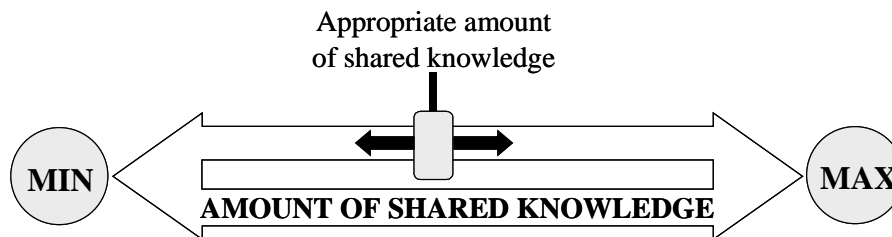
## 5. Conclusions and further research

There is a need for organisations of today to continuously develop their ability. One important mean to enhance such a development process is to handle the knowledge assets in the organisation. Individuals who bear the knowledge constitute organisations, where such knowledge can be regarded as personal as well as shared. An important strive for an organisation is to handle an appropriate amount of shared knowledge in order to stay competitive. To go from personal to shared knowledge is one task for an organisation's knowledge creation processes.

In this paper we have elaborated on an approach, team-based reconstruction, for facilitating the sharing of knowledge in an organisation. This approach has been generated from an analysis of performed reconstructions in three case studies and with inspiration from theories about knowledge management and language/action. The process of team-based reconstruction consists of four essential inter-related reconstruction activities; collection, interactive modelling, non-interactive modelling and validation.

One type of knowledge that to a certain amount need to be shared among the actors of an organisation is the knowledge about what actions, and in which order, to perform in order to satisfy the clients of the organisation. Such knowledge is called contextual knowledge. Since a lot of actors participate in the process of fulfilling the clients' needs it is important that different actors contribute with their knowledge about action logic. It is therefore vital that actors within the organisation learn from each other through interaction. The ontological dimension of knowledge creation is "communities of interaction" that contribute to the amplification and development of knowledge (Nonaka, 1994). A high degree of participation in the reconstruction process drives the actors involved to expand their individual knowledge through interaction and articulation. By using communities of interaction an appropriate level of shared contextual knowledge between different actors can be agreed upon. The result of a process of expanding the shared knowledge is an expanded individual knowledge used for performing good business and staying competitive. Through expansion of the individual knowledge, the organisational ability can be increased.

The best case for an organisation would be to arrive at an appropriate amount of shared contextual knowledge. It is however hard to evaluate when the appropriate amount of shared knowledge is reached. There is an important distinction between the conception of appropriate amount of shared knowledge in relation to a minimum and a maximum amount of shared knowledge (see figure below) for performing good business.



**Figure 6: The appropriate amount of shared knowledge**

Depending on the situation the appropriate amount of shared knowledge for an organisation will vary. In the figure above this is shown with the control that can go either to the left or to the right but always representing an appropriate amount of shared knowledge for a certain situation. Some situations demand more shared knowledge than others does and vice versa. The balance between efforts concerning development work, i.e. reflection oriented work, and business practice should be determined by the appropriate amount of shared knowledge needed for performing good business. One way for an organisation to advance towards an appropriate amount of shared contextual knowledge is to perform team-based reconstruction.

The process of team-based reconstruction has some important characteristics needed to facilitate the movement towards an appropriate amount of shared contextual knowledge:

- **The composition of the team during reconstruction.** The team should represent a cross section of the organisation, both horizontally and vertically. This is important in order to ensure that the team represent or hold as much knowledge as possible about the organisation. An important condition for generating contextual knowledge is by interaction between actors that really perform the actions within the action pattern. They are the ones that holds the knowledge about which actions to perform.

- ***Supports for directing attendance during reconstruction.*** In order to be able to mine the knowledge assets, personal and shared, there is a need for supports that triggers the actors to articulate the non-articulated knowledge. Interaction in itself facilitates the process of directing attendance towards important and relevant aspects. Other identified supports for giving structure and generate relevant questions are theories and methods. Theory and method can help us to direct attendance towards essential aspect in an organisation. Theory and method is also a support and inspiration when stating questions to trigger and entice members of the team to articulate their personal knowledge that then can be shared.
- ***Team-based reconstruction is, and must be, a dynamic process.*** It is important to facilitate continuous externalisation of knowledge throughout the whole process. The members of the team are given possibilities to learn successive in three of the four major activities. These activities are collection, interactive modelling and validation. Actors will learn more when they interact compared to if the reconstruction is made individually. Externalised knowledge is also a source to direct and redirect attendance towards aspects that otherwise can be left unknown.
- ***Reconstruction of existing practice should be time and resource efficient.*** Since organisations often have a shortage of personnel it is likewise that a lack of time and resources will jeopardise the possibilities of performing knowledge creation processes. One way to facilitate the needs of being time- and resource efficient is to perform reconstruction team-based since interaction in teams is a way to facilitate a broad learning process in a short amount of time.

Organisational learning can in the context of team-based reconstruction be seen as something that goes on throughout the reconstruction process. However, organisational learning is more obvious during interactive modelling and validation. Even if validation is accentuated in the end of the process there will be more or less explicit validation throughout the process since actors in the organisation are forced to continuously interact with each other and reaching agreements on how to regard the organisation. One important aspect of organisational learning is articulation of knowledge and interaction between actors in the organisation.

Even if there a lot of pros for performing a reconstruction team-based there are of course a number of limitations with the approach. One such limitation is that it can be hard to go into details that do not concern all participants taking part in the reconstruction process. Other participants who are not directly involved with the details might feel that it is a waste of resources to spend time on such details. Another limitation can be a limited time at disposal for reflection. A risk with team-based reconstruction, which then might be a limitation, is that the reconstruction process is too inspired by theories and methods and therefore the specific situation is not taken enough into consideration.

Knowledge creation through team-based reconstruction should be further elaborated on. There is still a need for further research. One area of further research is to get a deeper understanding of the process of interaction between different actors. According to Nonaka (1994) the process of knowledge creation need to build upon mutual trust among the members. Another area of further research is to find ways to continuously improve the process of team-based reconstruction. One aspect that is needed to learn more about is about how to facilitate the need to direct attendance towards new aspects that are conditions for performing better business.

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