

# Towards a Semiotic Approach to Practice-oriented Knowledge Transfer

Supaporn Chai-Arayalert and Keiichi Nakata  
*Henley Business School, University of Reading, Reading, U.K.*

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**Abstract:** With the rapid growth of information and technology, knowledge is a valuable asset in organisation which has become significant as a strategic resource. Many studies have focused on managing knowledge in organisations. In particular, knowledge transfer has become a significant issue concerned with the movement of knowledge across organisational boundaries. It enables the exploitation and application of existing knowledge for other organisations, reducing the time of creating knowledge, and minimising the cost of organisational learning. One way to capture knowledge in a transferrable form is through practice. In this paper, we discuss how organisations can transfer knowledge through practice effectively and propose a model for a semiotic approach to practice-oriented knowledge transfer. In this model, practice is treated as a sign that represents knowledge, and its localisation is analysed as a semiotic process.

## 1 INTRODUCTION

Knowledge has become significant as a strategic resource. The ability to leverage external knowledge to an organisation's own knowledge has become a vital constituent to an organisation's knowledge for the reason that this second-hand experience can be obtained more rapidly and more economically than first-hand experience (Hamel, 1991); (Huber, 1991). Knowledge transfer has become an important topic in knowledge management. The effective knowledge transfer can take place through manuals, training, conversations, etc. However, there are limitations in these ways of knowledge transfer as some types of knowledge may not be directly captured and managed, as we cannot always prepare knowledge in a 'transferable' form. This paper introduces practice as a vehicle of knowledge to be transferred. A practice can be characterised as the successful routines in organisation which can be created through integrating and combining new and existing knowledge so as to apply knowledge effectively and efficiently. In addition, the imitation of successful practices may enable organisations to take advantage of the value of practices (Bartlett and Ghoshal, 1989).

Moreover, the importance of context shapes the transferring knowledge capacities. Although some research addressed the issue of context in knowledge

transfer, few take context into account in their analysis (Inkpen and Dinur, 1998). The previous literature does not pay sufficient attention to the importance and consequence of the context which affects knowledge transfer. This paper places emphasis on the social context based on the application of semiotic approach and social constructivism as its theoretical point of view. Semiotic analysis helps in interpreting and making sense of meanings afforded by different organisations and how these meanings relate to each other, and, in turn, to practice-oriented knowledge transfer processes. Such an understanding supports creation and transfer of knowledge between different organisations and helps in defining the practice-oriented knowledge transfer processes for sustainable competitive advantage. To analyse such processes, this paper introduces a model for practice-oriented knowledge transfer. This model features the codification of knowledge into practice, transferring of practice, and the reconstruction of knowledge through the interpretation of practice. This paper is organised as follows. First, the knowledge transfer and models are reviewed, followed by the discussion of a semiotic view of knowledge transfer. Then, an organisational containment analysis of practice-oriented knowledge transfer model is proposed, followed by discussion and conclusion.

## 2 KNOWLEDGE TRANSFER

Knowledge management (KM) covers identification and leveraging of the collective knowledge in order to assist the organisation to gain competitive advantage (Von Krogh and Roos, 1996). Activities in KM consist of creating, storing or retrieving, transferring, and applying knowledge (Von Krogh and Roos, 1996). Knowledge transfer has become one of the significant KM processes concerned with the movement of knowledge across the boundaries created by specialised knowledge domains (Carlile and Reberich, 2003). It is the movement of knowledge from one place, person or ownership to another. Furthermore, knowledge transfer enables the exploitation and application of existing knowledge for the organisation's purposes.

The early research of knowledge transfer has viewed knowledge as an object and/or a process which are transferred through mechanisms from one organisation to a recipient organisation (Liyanage et al., 2009); (Parent et al., 2007). The recipient in this perspective can be viewed as a passive actor and it often ignores the context in which the knowledge transfer occurs and in which the knowledge is used (Parent et al., 2007); (Inkpen and Dinur, 1998). Therefore, the difficulties in knowledge transfer remain. This is evident in models or paradigms of knowledge transfer proposed and developed over a number of theories (Parent et al., 2007). Among them, practices can be seen as significant successful routines in organisations. Some organisations apply knowledge through an efficient integration or combination of new and existing knowledge which leads to a practice or a routine use of knowledge (Nelson and Winter, 1982).

This is sometimes known as practice transfer which is useful for replication of existing successful practices that enables organisations to take advantage of their value (Bartlett and Ghoshal, 1989). Szulanski (2000) studied the best practice transfer and characterised it as imitation of an internal practice which is well performed in the organisation, and investigated both the context of transfer and the characteristics of the knowledge being transferred. The focus was on the 'stickiness' of knowledge to illustrate the challenges involved in the transfer, and it was found that most of the difficulties with knowledge transfer are derived mainly from the receiving unit. However, Inkpen and Darr (1998) reported that organisations face problems in transferring practices across organisational units. What is emerging here is the focus on practices as a key feature of knowledge

transfer. To address this, this paper introduces a new perspective of knowledge transfer based on semiotic analysis. In the following section, we describe organisational semiotics and Peirce's model of semiosis. Then, knowledge transfer as semiosis is discussed.

## 3 A SEMIOTIC VIEW OF KNOWLEDGE TRANSFER

This section discusses the relationship between knowledge transfer and the practice based on a semiotic approach. It begins by describing organisational semiotics starting from Peirce's model of semiosis, followed by an exploration of the practice-oriented knowledge transfer through semiosis.

### 3.1 Organisational Semiotics

Semiotics is study of signs in relation to objects and actions. As a branch of semiotics, organisational semiotics (OS) is a discipline which aims to study the nature, functions, characteristics and effects of information and communication within organisational contexts (Liu, 2000). It defines organisations as systems where signs are created and used for communication and business purposes (Liu et al., 1999). It deals with the use of signs and the construction of shared meanings within and among organisations (Liu, 2000). Semiosis is the process of constructing meaning from represented signs. The process is shown by Peirce's triadic model of semiosis. Semiosis contains sign, object and interpretant (Liu, 2000). Sign is the signification without reference to anything other than itself. Object is the signification in relation to something else. Interpretant meditates the relationship and helps establish the mapping between the sign and the object. Sign is related to its referent or object with the assistance of the interpretant which is the interpretation process (from sign to object). The sign can be understood or misunderstood in different ways depending on the interpretant. The semiosis model can assist the analysis of knowledge transfer, as the interactions between the sign, object and interpretant.

### 3.2 Knowledge Transfer as Semiosis

We analyse knowledge transfer through the use of practice by applying Peirce's triadic model of

semiosis. Figure 1 presents the process of knowledge transfer through the use of practice between organisations (Chai-Arayalert and Nakata, 2011b). It consists of codifying knowledge, interpreting and constructing knowledge, and analysing influencing localisation factors. This can be captured as semiosis.

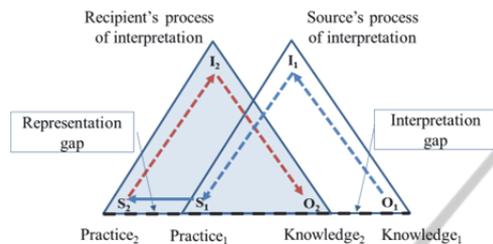


Figure 1: Knowledge transfer as semiosis.

A sign (S) represents a practice which a source organisation intends to use as a vehicle to transfer knowledge to a receiving organisation. In figure 1,  $S_1$  represents a practice of a source organisation and  $S_2$  occurs when  $S_1$  are transferred to a receiving organisation. The representation is to describe something or illustration of a sign. The representation gap occurs when the two corresponding signs that refer to the same object are not aligned. This may occur when the practice is transferred in the process of localisation. An object (O) is shown as knowledge to be transferred. An interpretant (I) is the processes of knowledge transfer. In the source organisation, knowledge ( $O_1$ ) is captured as a practice by a process ( $I_1$ ) of encoding knowledge to practice. Interpretant ( $I_2$ ) is the process of interpreting knowledge received from the source organisation. Here we assume that knowledge is transferred. Some factors affect the achievement of knowledge transfer which are represented by a gap between the knowledge to be transferred in the source organisation ( $O_1$ ) and transferred knowledge at the receiving organisation ( $O_2$ ). Based on Peirce's triadic model of semiosis, we analyse and identify the possible gap as the interpretation gap. This gap shows the difference of knowledge between source and receiving organisations. It leads to a displacement of object when an understanding of the objects differs and can result in a distorted understanding of the intended meaning.

Therefore, it is important to address these two semiosis gaps. Employing the semiosis model can analyse the two processes that might occur in knowledge transfer, both the process of encoding knowledge to practice and decoding knowledge

from practice. In the next section, we explain a practice-oriented knowledge transfer model framework.

## 4 AN ORGANISATIONAL CONTAINMENT ANALYSIS OF THE PRACTICE-ORIENTED KNOWLEDGE TRANSFER MODEL

This section we analyse the proposed knowledge transfer model using the notion of organisational containment analysis in organisational semiotics (figure3).

### 4.1 The Source's Process of Knowledge Codification

We begin by modelling the process of representing knowledge as practice. We employ Peirce's triadic model to understand this process. As can be seen in figure 1, this treats knowledge (object) to be something which is carried by a practice (sign).

We illustrate this process as representing knowledge as practice. To analyse the relationship of knowledge and practice based on the semiotic approach, we relate a practice to knowledge by clarifying the concepts of knowledge and practice, respectively. To begin with, knowledge refers to experiences, beliefs, values, and how we feel, motivation and information. Some focuses on the function or purpose of knowledge which is used for evaluating and incorporating new experiences and information through embedded routines, processes, practices, and norms (Davenport and Prusak, 1998). In Langefors' works (1966, 1993), knowledge is referred to something actors need to know to achieve tasks or goals. Actors are able to achieve knowledgeable or informed actions by acquiring task and practice relevant knowledge (Braf, 2004). This definition underlines how agents acquire and share knowledge to perform organisational actions. Agents obtain knowledge through interaction and communication with each other, and knowledge is a property of humans and a significant part of agents' knowledge can be expressed and communicated by the use of signs (Braf, 2004).

Next we examine the definitions of the practice relating to this model. First, Nelson and Winter (1982, p.121) define the practice as "a manifestation of organisational capability and is therefore

embedded in organisational routines referring as organisational memory. The routinisation of activity in an organisation constitutes the most important form of storage of the organisation’s specific operational knowledge.” In addition, Szulanski (1996) described that the practice closely relates to a routine use of knowledge, reflects the shared knowledge, and relates to the capability of the organisation. Furthermore, some who put forward the notion of practice which focuses on agents’ actions; the practice is “embodied, materially mediated arrays of human activity centrally organised around shared practical understanding” (Schatzki, 2001, p.2). Additionally, the practice refers to the actions performed in organisation which is seen as practice systems (Goldkuhl et al., 2001). In the similar vein, Cook and Brown (1999, p.387) characterises the practice as “the co-ordinated activities of individuals and groups in doing their real work as it is informed by a particular organisational or group context.” There is a research opportunity in identifying a clear relationship between knowledge and practice, expressed through a social process. We establish this relationship through the semiotic approach with the purpose of relating practices to knowledge.

According to OS, an organisation is a social system which is composed of cultured-cognitive, normative, regulative elements, that together with associated activities and resources, provide stability and meaning to social life (Liu, 2000). Stamper’s (1992) organisational containment analysis illustrates a view on organisations, business processes and IT systems(Liu, 2000). It consists of three layers: The informal, formal and technical (figure 2).

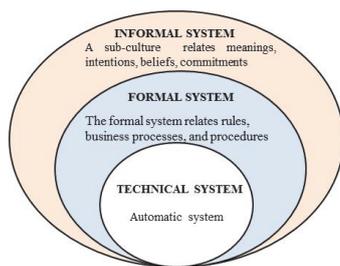


Figure 2: The organisational containment model.

We apply the organisational containment analysis to understand the relationship between knowledge and practice, and the knowledge transfer process between the organisational systems (figure 3).

First, the organisation as a whole is considered as an informal system, where the values, beliefs and

behaviour of individuals play important roles. We refer to the work of Nonaka and Takeuchi (1995) that identified that knowledge is concerned with meanings, context-specific, depending on the situation, created dynamically in social interaction among people. Their work identified that knowledge deals with beliefs, commitments, and that is to be a part of intention. Therefore, knowledge should be analysed as a part of the informal system. Note that this does not exclude the situation where knowledge is more formally captured in other two layers.

Second, the formal layer is the way individual actions and business processes should be carried out according to rules in the organisation. We view the practice, as a part of the formal system, which is in line with Goldkuhl et al. (2001) who explained that organisations as the practice systems. According to the definitions of practice, the practice consists of different elements such as unwritten or written rules of how a certain organisational function should be conducted and the rules of practice reflect a set of underlying values and beliefs. Therefore, the practice is seen as a part of the formal organisational system. Third, the technical system, which is outside the scope of this study, is the part of the formal system that is automated through IT system (Liu, 2000). For the reason as mentioned above, the organisational containment model showed how knowledge at the informal system is encoded into practice at the formal system. In the following subsection, we explain how knowledge is constructed from practice at the recipient organisation.

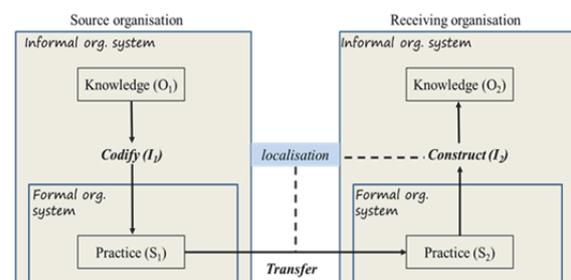


Figure 3: A model of practice-oriented knowledge transfer.

#### 4.2 The Recipient’s Process of Knowledge Construction

Next we examine the process of knowledge construction on the recipient’s side based on the organisational containment analysis of the practice-oriented knowledge transfer (figure 3). When the practice (sign) is transferred to the recipient, this

practice is interpreted and decoded (interpretant) to construct the knowledge (object). Semiotics uses the term 'decode' which means how codes are reinterpreted. There is also no knowledge transfer without decodification process. Knowledge must be received by a recipient who attempt to decode practice to knowledge. The source's process involves the combination of sign into codes, and the recipient's process relates to the interpretation of codes in the light of specific social context.

To understand the interpretation process, we begin by defining the interpretation as the process of translating situations and development of models for understanding, meaning, and assembling conceptual schema (Daft and Weick, 1984). Furthermore, the interpretant is one aspect of Peirce's semiosis model which mediates between sign and object (Liu, 2000). The knowledge in this study context is an entity that cannot exist without the recipient and it relates to the actions and experiences of the recipient. It also is an outcome of social process involving human exchanges and interactions. Thus, this process should be an active process that constructs knowledge from external knowledge under the prior experiences and social interaction with others in a particular context.

In the reconstruction process, we employ social constructivism which focuses on how groups of individuals communicate and negotiate their perspectives (Young and Collin, 2004). It is closely related to the social context involving particular culture and social interaction (McMahon, 1997). According to the semiotic view, the role of practice is treated as a vehicle of knowledge which is contextually bound: one of the important principles of constructivism. Likewise, a constructivism views knowledge as localised and contextual specific. Thus, the social constructivism and semiotic approach have the shared notions of knowledge that it has no meaning in the real world until it is constructed and the meaning is affected by social interaction (Uden et al., 2001). The construction of knowledge in the recipient is a process that is both constrained and enabled by the social relationships and practices of those involved in it. This is the opportunity to understand how members of a receiving organisation can generate new knowledge while simultaneously being constrained by what they have seen before.

Here, knowledge cannot be effectively transferred if the semiosis gaps which are analysed using Peirce's model are significant. First, the 'representation gap' occurs when some practices cannot be transferred from source to recipient as they are, or require significant modifications,

corresponding to the differences in representations. This can be analysed by identifying factors that relate to the differences at the formal organisational systems covering the differences in rules, regulations, laws, processes, and procedures between source and recipient. Second, the 'interpretation gap' occurs when the transferred practice is interpreted by a recipient under a receiving context. This gap corresponds to the difference between the reconstructed knowledge by the recipient and the source knowledge.

When a recipient effectively internalised knowledge through constructing their own knowledge based on the conditions of the prior experiences, recipient's context, and the social interactions, the knowledge transfer process is completed.

## 5 DISCUSSION

The purpose of this paper was to introduce a model specifically developed to aid the analysis of practice-oriented knowledge transfer. In addition, this paper aimed to analyse localisation factors that influence knowledge transfer through a semiotic analysis. This model focuses on practice as a key feature of knowledge transfer. We applied Peirce's triadic model to explain this knowledge transfer process. Furthermore, we analysed this model using an organisational containment analysis. This model is composed of processes involving codifying knowledge, interpreting and constructing practices, and analysing localisation factors.

So far this is primarily a theoretical model. However, we are currently applying the model to analyse a case of knowledge transfer in Green ICT, which is an emerging discipline (Chai-Arayalert and Nakata, 2011a). This subject is drawn from practices being developed in the public sectors including higher education institutions (HEIs) in the United Kingdom which is one of the first countries to focus on Green ICT to inform of governmental strategies and policies (Porritt, 2010). The case study involves HEIs in United Kingdom as a source and five universities in Thailand as the recipients. The case study is based on focus groups and interviews to identify the localisation factors.

The limitation of the current approach is that while our model delineates the role of human and social functions in determining the effectiveness of knowledge transfer through the use of practices, there are other dimensions that require attention such

as the use of technology. The limitation may also provide indications for future research.

## 6 CONCLUSIONS

An effective acquisition and management of knowledge becomes a competitive advantage in the organisational resources. However, these activities are not straightforward as it depends not just on the nature of knowledge itself but also on the process of acquiring and assimilating it. The outcomes of this paper are as follows. First, we applied the notion of semiosis to assist the analysis of knowledge transfer, as the interactions between the sign, object and interpretant. The result explored the relationship between knowledge and practice. Furthermore, this semiosis model explains the process of knowledge transfer through the use of practice and analysed the influencing factors of knowledge transfer. Second, we proposed a model for a semiotic approach to practice-oriented knowledge transfer. We developed a model for the source's process of knowledge codification, the recipient's process of knowledge construction, and the influencing localisation factors. Through a case study of knowledge transfer, we intend to identify key localisation factors in practice-oriented knowledge transfer in the future work.

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