Knowledge sharing: moving away from the obsession with best practices

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Abstract

Purpose – *How companies can become better at knowing what they know, and share what they know have in recent years become dominant fields of research within knowledge management. The literature focuses on why people share knowledge, or why they fail to share knowledge, whilst the discussion of what they actually share has been pinned down to the concept of best practices. In this paper it is argued that there is more to knowledge sharing than the sharing of best practices. Knowledge sharing is more than the closing of performance gaps and the sharing of stocks of knowledge – knowledge sharing is also about bridging situations of organizational interdependencies and thereby supporting ongoing organizational activities.*

Design/methodology/approach – *The paper is both theoretical and empirical. Theoretically, the concept of organizational interdependence is applied to create a conceptual framework encompassing four types of knowledge to be shared. The theoretical framework is applied on a case company to empirically illustrate how knowledge sharing encompasses different types of knowledge.*

Findings – *The paper identifies four types of knowledge that are pivotal to share: professional knowledge, coordinating knowledge, object-based knowledge, and know-who. Hence, the paper expands the common belief that knowledge sharing is solely about sharing best practices.*

Practical implications – *Since knowledge sharing encompasses at least four types of knowledge, the practice of facilitating knowledge sharing must necessarily focus on different channels enabling the sharing of knowledge. The practical implications of the paper, hence, direct attention to not solely sharing best practices but also knowledge bridging organizational interdependencies.*

Originality/value – *The paper argues that best practices have dominated the discourse on what knowledge is to be shared but, to become better at understanding and practising knowledge sharing, states that one must expand one's view on what knowledge is being shared.*

Keywords *Knowledge management, Knowledge sharing, Organizational behaviour, Best practice*

Paper type *Research paper*

Introduction

An ongoing concern in organizations and research in organizations is how to become better at transforming an input to an output. The implementation of what has been denominated high-performance work practices is seen as critical for obtaining high levels of organizational performance (Pfeffer, 1997, p. 172), and since organizations today strive for survival in a world that is apparently becoming more and more knowledge-intensive, one such high-performance work practice has become knowledge sharing. But, both the research in – and practice of – knowledge sharing tend to focus on the concept of best practices. This paper, however, argues that the knowledge being shared – or supposed to be shared – takes on several more forms than being a best practice.

The purpose of the paper

The paper argues that knowledge sharing is also to be understood as a process of bridging organizational interdependencies inherent in ongoing organizational activities. The paper,

hence, acknowledges that organizations represent different situations of interdependencies (Thompson, 1967), and that each situation of interdependency involves different forms of knowledge and requires different efforts for improving the knowledge sharing. Viewing knowledge sharing as a process of bridging organizational interdependencies expands our understanding of what types of knowledge are at stake in knowledge sharing, and what channels are best suited for sharing knowledge. So, theoretically the paper does not focus on why knowledge is being shared, but rather on what knowledge is being shared.

Empirically the paper explores knowledge sharing in a Danish production facility, and identifies four forms of knowledge: professional knowledge, coordinating knowledge, object-based knowledge and know-who. Professional knowledge is created and shared within communities-of-practices either inside or across organizational barriers. Coordination knowledge is the knowledge that makes each employee knowledgeable of how and when he – in the organization – is supposed to apply knowledge. Object-based knowledge is knowledge about an object that passes along the organization's production-line. Know-who is knowledge about who knows what, or who is supposed to perform activities that influence other's organizational activities.

All four forms of knowledge should be part of the knowledge sharing process, since they all emphasize that knowledge is being shared as a means for efficiently transforming an input to an organizational output.

The paper further explores how the different forms of knowledge are being shared, and – hence – how organizations can move beyond the obsession of best practices, and become better at sharing knowledge.

The paper proceeds with an overview of the field of knowledge sharing then follows a discussion of organizational interdependencies and eventually the four different forms of knowledge to be shared are analyzed and discussed.

What is knowledge sharing?

The goal of knowledge sharing can either be to create new knowledge by differently combining existing knowledge or to become better at exploiting existing knowledge. In this paper knowledge sharing is defined as the process intended at exploiting existing knowledge, and knowledge sharing is, hence, defined as being about identifying existing and accessible knowledge, in order to transfer and apply this knowledge to solve specific tasks better, faster and cheaper than they would otherwise have been solved.

Researchers seem to agree that the problems of knowledge sharing most often stem from social dilemmas, knowledge dilemmas and a combination of the two (Cabrera and Cabrera, 2002; Osterloh and Frey, 2000), causing behaviour of knowledge that is counterproductive – or irrational – to the common good of the organization.

Social dilemmas are also referred to as ''dilemmas of the common good'' and ''public good dilemmas'', while knowledge dilemmas refer to cognitive barriers and epistemologically differences of knowledge, i.e. that knowledge can be either tacit or explicit, and exist at either an organizational or individual level (Hinds and Pfeffer, 2003; Nonaka and Takeuchi, 1995). Some ways of overcoming the social and knowledge dilemmas are believed to be increased financial incentives, increased organizational efficacy and a knowledge sharing culture (Davenport *et al.*, 1998; Dixon, 2000).

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The social dilemmas – and how to overcome them – are by far the subject that dominates the ever-increasing amount on literature on knowledge sharing. This is not to say that knowledge dilemmas are being totally ignored – in the discussions of social dilemmas the knowledge dilemmas are often – though very briefly – touched upon.

The problems of social dilemmas and knowledge dilemmas

Broadly speaking, the social dilemmas and knowledge dilemmas give rise to five problems inherent in organizational knowledge sharing:

1. The stickiness of knowledge (Nonaka and Takeuchi, 1995; Szulanski, 1996, 2003).
2. No common identity (Brown and Duguid, 2000; Davenport *et al.*, 1998).
3. No relation between the receiver and sender of knowledge (Davenport and Prusak, 1998; Hansen, 1999).
4. No willingness to share knowledge (Cabrera and Cabrera, 2002, Osterloh and Frey, 2000).
5. No knowledge of knowledge (Borgatti and Cross, 2003; Gupta and Govindarajan, 2000; O'Dell and Grayson, 1998).

The stickiness of knowledge refers not, as such, to the stickiness of a transfer (Szulanski, 2003, p. 13) – all sharing of knowledge is to some extent sticky – but to the epistemologically different faces of knowledge. As discussed by Polanyi (1966) – and made famous in Nonaka and Takeuchi (1995) – knowledge can be considered as either tacit or explicit. Tacit knowledge can be said to be more sticky than explicit knowledge – and, hence, requires a stronger effort (more time and energy) to mobilise.

Common identity often facilitates knowledge sharing since individuals within one specialist group understand each other better, than people from outside the group – they are more or less believed to possess the same absorptive capacity. The concept of communities of practice has in recent years become one of the most popular tools for enhancing knowledge sharing – even though no one actually knows how to practice, or cultivate, a community of practice. Apparently, a community makes it much easier to share knowledge, because people really care about their practice, are embedded in the same practice and, hence, talk the same (technical) language.

Personal or organizational networks play an important role in accessing knowledge. The sharing of knowledge is facilitated by some kind of personal or virtual network. Without networks there is no opportunity for accessing knowledge. Networks can be maintained by formal or informal face-to-face meetings, or – the latest trend – by physical structures that do not allow individual cubicles, but emphasizes transparent community spaces.

No willingness to share knowledge deals explicitly with what Cabrera and Cabrera (2002) has referred to as social dilemmas touching upon such diverse areas as the tragedy of the commons, and the power of possessing knowledge.

Not having knowledge about the knowledge that you are supposed to share will, of course, make it impossible to get started with the process of sharing knowledge. So, yellow pages or personal know-who will most likely facilitate knowledge sharing (Borgatti and Cross, 2003).

The five problems are caused by either social dilemmas or knowledge dilemmas. The stickiness of knowledge and the missing common identity represent knowledge dilemmas caused by the epistemologically different faces of knowledge, such as tacit knowledge making it somehow difficult to both identify and transfer knowledge (Szulanski, 2003).

The missing relation between receiver and sender of knowledge, the unwillingness to share knowledge and no knowledge of knowledge are social dilemmas caused by the behaviour, or misbehaviour – of persons.

> **"Even though the amount of literature on knowledge sharing is increasing, there is very little focus on what knowledge is being shared."**

The obsession with best practices

Even though the amount of literature on knowledge sharing issues is increasing, there is very little focus on what knowledge is being shared. Epistemologically the discussions are limited to tacit and explicit dimensions of what has been termed best practices describing a superior performed activity yielding a performance gap between organizational subunits.

In other words, there are endless discussions as to what form knowledge can take, or where knowledge exists – knowledge can be both organizational knowledge, tacit knowledge, explicit knowledge and so on and so forth. Following this, knowledge exists at various places such as in the individual, in organizational routines, embedded in formal guidelines, or in one part of the organization – to mention just a few existences of knowledge.

These discussions of the form and the whereabouts of knowledge do, however, focus on a narrow instrumentality of knowledge – knowledge is perceived as a best practice and knowledge sharing as the process of bridging performance variations between organizational subunits (Davenport and Prusak, 1998; O'Dell and Grayson, 1998; Szulanski, 1996, 2003).

The literature on knowledge sharing is – in other words – obsessed by best practices, and this leaves no room for other forms of knowledge, and may lead to the conclusion that best practices are the only form of knowledge being shared. The mantra seems to be, that if knowledge is not being shared, performance variations will persist, and the company will keep on reinventing the wheel. This may also hold true – but this approach to knowledge sharing is very much based on the perception of knowledge sharing as being a process bridging stocks of knowledge – for instance bridging the lack of knowledge in one department with the presence of best practices in another department.

Knowledge sharing is, as emphasized above, more than sharing best practices, and the next paragraph introduces the notion of organizational interdependencies acknowledging that knowledge sharing is a process bridging situations of interdependency.

Organization theory and knowledge sharing

Organization theory has seldom – and only implicitly – been applied to structuring, analyzing and discussing the problems embedded in the sharing of knowledge. One reason for omitting organization studies in relation to the theory of sharing knowledge is the assumption that knowledge freely flows around both within and across organizational boundaries. Another reason is that knowledge – at least rhetorically – is expected to increase with use contrasting the diminishing value of tangibles. Therefore – it is often supposed – the process of knowledge sharing is somewhat distant to the problems discussed in organization theory.

But, as argued above, the knowledge sharing process is nevertheless troublesome. One of the reasons is that knowledge as a resource is embedded in the individual – therefore directing or controlling the behaviour of knowledge is very much a challenge related to directing and controlling the behaviour of the possessor of knowledge. Hence, the problems addressed in both organization theory, and the theory of knowledge sharing focuses to some extent on the same level of analysis, and there is reason to believe that organization theory can enlighten the theory of sharing knowledge.

The study of organizations is basically about exploring ''how generic social processes operate within distinctive social structures'' (Scott, 1981, p. 9). The processes are generic in the sense that they seek to coordinate the efforts of a number of people, so as to achieve a common goal. The social structures are distinct because the coordination effort encompasses both different dispositional and situational characteristics.

Thompson (1967, p. 10) referred to the coordination effort as ''the kinds of cooperation of different people required to get the job done effectively'', and emphasized that the technological rationality embedded in the quest for coordinating people entails both an instrumental and economic question. The instrumental question is about whether the job is being done, and the economic question is about ''whether the results are obtained with the least necessary expenditure of resources'' (Thompson, 1967, p. 14). Often, the instrumental question is dominated by the economic question – one tends to favour the least costs to the increased instrumentality. This has consequences for which social processes will be applied for coordinating people or for that matter sharing knowledge – the goal is to share knowledge, not necessarily sharing knowledge better at an increased cost. In other words, the coordination efforts will be economically satisfied rather than instrumentally maximized.

Organizational interdependencies

Organization theory is – as stated above – an interdisciplinary enterprise, and aims at understanding which social processes to apply in which social structures, and why. As Pfeffer (1997, p. 25) has emphasized ''perhaps the most fundamental question addressed by organization studies is how we are to understand what causes behaviour'', and the reason for wanting to understand what causes behaviour is to being able to create and control a causal relation between certain social processes and a desired outcome.

But how are behaviour directed towards common goals? As Thompson (1967, p. 55) has emphasized, organizations represent situations of interdependence, and to ensure concerted action, coordination is required. Or, as Thompson (1967, p. 54) put it:

> Our basic assumption is that structure is a fundamental vehicle by which organizations achieve bounded rationality. By delimiting responsibilities, control over resources, and other matters, organizations provide their participating members with boundaries within which efficiency may be a reasonable expectation. But if structure affords numerous spheres of bounded rationality, it must also facilitate the coordinated action of those interdependent elements. It appears that if we wish to understand organization structure, we must consider what is meant by interdependence and by coordination, and we must consider various types of these.

Thompson (1967) defined three types of interdependence – pooled, sequential and reciprocal interdependence – requiring different devices for coordination.

Pooled interdependence refers to processes where each part in the process renders a discrete contribution to the whole. Under serial interdependence one process must be performed before others, while under reciprocal interdependence the output of each process becomes input for the others, and the distinguishing aspect is the reciprocity of the interdependence, with each unit being contingent on the other.

Coordination mechanisms

To ensure concerted action, the different types of interdependence require mechanisms of coordination. Without coordination – Pfeffer (1997, p. 100) also refers to coordination as a kind of social control – individuals are not able to collectively transform an input to an organizational output.

But how then to coordinate interdependent individuals or groups – or, in other words how do organizations, based on the division of work, make sure, that whatever activities are performed, they will eventually succeed in an organizational and efficient transformation from input to output?

The organizational structure – defined as the internal differentiation and patterning of relationships (Thompson, 1967, p. 51) – must somehow be controlled to reduce inefficiency,

and in organization studies the concept of coordination mechanisms is applied as the social control device for ensuring concerted action.

Thompson (1967) suggested the application of different types of coordination mechanisms dependent on the type of interdependence.

Pooled interdependence can be controlled through standardizing work activities – for instance prescribing rules. Rules ensure that the expert knowledge is integrated into company activities. And the efficiency of the mechanism is achieved through the minimization of communication. Expert knowledge is used to lay down rules for the activities integrating knowledge, and, thus, the rules also act as a method of ensuring that employees, who are assumed not to have this expert knowledge, nevertheless act as if they possessed this knowledge. In situations with serial interdependence, individuals are often isolated from each other in time or space, and planning is required to ensure concerted action. Serial interdependence is, for instance, to be found across professional boundaries – for example the project group that is designing a car, the department responsible for marketing and sale of the car and the team producing the car. Reciprocal interdependence is to be found in variable and unpredictable situations, and requires mutual adjustment during the process of action. As Thompson (1967, p. 56) has emphasized:

> The three types of coordination place increasingly heavy burdens on communication and decision. Standardization requires less frequent decisions and a smaller volume of communication during a specific period of operations than does planning, and planning calls for less decision and communication activity than do mutual adjustment [. . .] We would therefore expect first priority to be given to grouping in such a way as to minimize the more costly forms of coordination.

Table I summarizes the three situations of interdependency and how they can be coordinated.

Knowledge sharing as bridging situations of interdependency

Following Thompson's (1967) analysis of interdependence and coordination, organizations will most likely engage in coordination mechanisms related to pooled interdependencies, since the cost involved in coordinating pooled activities is lower than coordinating serial or reciprocal knowledge sharing interdependence (Scott, 1981, p. 235; Hatch, 1997, p. 150).

The same basically goes for knowledge sharing efforts – organizations reflect and invest in knowledge sharing efforts as if the organization represented situations of pooled interdependency. Solutions such as databases and manuals are introduced, but these efforts are only capable of bridging situations of pooled interdependencies characterized by stable environments – quite similar to the dominating idea of knowledge sharing as a process of bridging stocks of knowledge. Organizations do, however, represent situations of pooled, sequential and mutual interdependencies, and knowledge sharing as a means of coordinating ongoing activities involves coordination mechanisms such as frequent meetings, and informal interaction with colleagues. Admittedly, more costly than relying on rules embedded in, for instance, databases and manuals. But, on the other hand, if companies do not acknowledge these more costly coordination mechanisms they will keep

Table I Types of interdependencies and coordination mechanisms

Type of interdependence	*Characteristic*	*Coordination mechanisms*
Pooled interdependence	Each part renders a discrete contribution to the whole and each is supported by the whole	Standardization. Few and stable rules
Sequential interdependence	A serial form. But not a symmetrical relation Some activities must be performed before others	Coordination by planning
Reciprocal interdependence	The output of each becomes input for the others. The distinguishing aspect is the reciprocity of the interdependence with each being dependent on the other	Coordination by mutual adjustment. Involves the transmission of new information during the process of action

on believing that knowledge sharing is about supporting the re-distribution of a stock of knowledge, and not also about a flow of knowledge supporting ongoing activities.

So, Thompson's (1967) discussion of organizational interdependencies emphasizes that organizations are dominated by processes rather than structures. Apparently there is a series of activities enabling the transformation of a given input to an organizational output, and this could mean that knowledge sharing also should be viewed as an ongoing process intended to bridge situations of interdependencies, rather than a process bridging performance variations between two organizational subunits. Knowledge sharing could be perceived of as a process bridging situations of interdependencies, and involving different forms of knowledge. In the next section the paper both conceptually and empirically explores how organizational interdependencies in one case company reveal four different forms of knowledge in the knowledge sharing process.

What knowledge is to be shared?

In the following sections, the paper argues that situations of interdependencies embrace different forms of knowledge that are crucial to include in the processes of sharing knowledge. Knowledge sharing is, hence, not solely linked to work that has been done, and that has been benchmarked, but also to work that is being done. Knowledge sharing becomes a process bridging situations of organizational interdependencies in ongoing activities. First, the empirical setting is introduced, then four types of knowledge are identified, followed by a discussion of how the types of knowledge relate to situations of interdependencies, and eventually it is being argued that how knowledge sharing is facilitated depends on the type of knowledge to be shared.

The empirical setting

The analysis is based on data from an in-depth case-study of one company – Estar. The data was gathered as part of a project analysing barriers and enhancers for knowledge sharing in four Danish companies. Estar is a production facility located in Denmark, and specialized in planning and producing high technology based consumer goods for some of the world's most famous brands. The organization has numerous plants worldwide. The Danish plant has a total of 1,200 employees including administration, planning and production.

This paper focuses on part of the production department. The department works 24/7/365 and has around 17 million assemblies day and night. There are four shifts: day, evening, night and weekend, and each shift is manned with operators working at the assembly line and repair technicians (also denominated operation supporters) securing the functioning of the machines at the assembly line. During day shift the production department is also manned with process engineers experimenting with existing production processes and planning new product lines.

The analysis focuses on knowledge sharing within one department – operation support. Initially, questionnaires from 12 employees were collected. The questionnaire was semi-structured and was intended as a pilot study of knowledge sharing processes. One month after collecting the questionnaires, personal interviews with each of the 12 persons were conducted. The purpose of the interviews was to get a more in-depth understanding of different knowledge sharing processes.

The operation supporters are very busy during shifts – technology constantly fails, and the operators of the technology constantly make errors. The purpose of sharing knowledge is, therefore, to get better a diagnosing and – subsequently – solving both technological and human errors in the production plant.

The operation supporters do, however, often find themselves in situations, where they should have shared knowledge, but unfortunately did not and therefore they spend a lot of time on basically diagnosing problems that already had been diagnosed. In other words, they were in situations of sequential interdependence, but acted as if they were in a situation of pooled interdependence.

> **"Knowledge sharing could be perceived of as a process bridging situations of interdependencies, and involving different forms of knowledge."**

Four types of knowledge

The empirically analysis revealed four types of knowledge: professional knowledge, coordinating knowledge, object-based knowledge and know-who.

Professional knowledge basically describes knowledge that enables the operation supporter to perform his job. Professional knowledge is limited to the practice of being an operation supporter, and has also been referred to as know-how (Brown and Duguid, 2000). Professional knowledge originates from for instance a person's formal education in combination with his experience in performing his job. Professional knowledge is a prerequisite for being able as a specialist to contribute to organizational activities, but in itself it does not produce any organizational outcome.

Coordinating knowledge is embedded in rules, standards and routines for how jobs are supposed to be performed. Coordinating knowledge guides the application of for instance professional knowledge, in order to secure the efficient transformation of input to organizational output. In other words, coordinating knowledge shapes who is going to perform what and when – not necessarily how (which is rather guided by the professional knowledge).

Object-based knowledge is knowledge related to a certain object passing through the production line of the company. In situations of interdependencies the central organizational task is clustering the contribution from various specialists (and their specialized knowledge). Often, the combination of specialized knowledge and coordinating knowledge is applied to a certain object such as a patient, a machine or a customer.

Know-who is knowledge about where knowledge exists. Know-who enables the identification of who might be able to help solve specific problems.

The four types of knowledge are all a prerequisite for organizational activities – without some level of professional knowledge no activities are performed, without coordinating knowledge no organizational outcome is produced, lacking object-based knowledge can lead to numerous situations of reinventing the wheel, and without knowing who knows what – or where knowledge exists – knowledge sharing will not take place.

Situations of pooled interdependency

In situations of pooled interdependence the activity of the operation supporters is very much guided by coordinating knowledge and professional knowledge. Rules ensure which kind of technological problems is to be prioritized, or how long time the operation supporter is supposed to spend on trying to diagnose and solve a problem, before he contacts an external supplier for advice. In situations of pooled interdependence the operation supporter also relies heavily on his professional knowledge. Before being able to engage in situations of pooled interdependencies it is therefore necessary to share professional knowledge, and knowledge that guides organizational activities, i.e. coordinating knowledge. The sharing of knowledge supporting situations of pooled interdependence is a process – following Thompson (1967) – characterized by standardization. The knowledge being shared is very stable, and the channels facilitating knowledge sharing are often manuals, databases, and the intranet, i.e. knowledge is being shared through written communication. As argued by Thompson (1967) companies often prefer situations of pooled interdependence because the coordination relies on mechanisms such as regulations, rules

and manuals, which are much cheaper to apply compared to mechanisms such as face-to-face meetings. Exactly the same, as emphasized above, holds true for knowledge sharing – companies act as if knowledge sharing is to bridge situations of pooled interdependence, because the application of databases and technology is cheaper than applying more dynamic coordination mechanisms such as oral communication in the form of frequent meetings. Nevertheless, companies also find themselves in situations of both sequential and reciprocal interdependence requiring somewhat different facilitators for knowledge sharing. Pooling of knowledge requires a channel that will be able to store and expose the knowledge to be shared. So, the coordination mechanisms are supposed to support some kind of physical or virtual space for knowledge sharing. In Estar, pooled knowledge sharing activities represent situations of written communicating. Explicit knowledge is communicated in technological databases, where operation supporters are supposed to key in – and update – whatever knowledge they gain on technological updates – from either their own experiences or from conferences and meeting they have attended. The databases represent a channel for knowledge sharing, and there are certain rules for how to fill in new knowledge, i.e. there is a certain structure – or standardization – for how to transfer knowledge. One of the problems in Estar is, however, that often written knowledge is not communicated in this standardized format, and therefore pooled interdependence of knowledge sharing activities is not supported properly.

Explicit knowledge is communicated during daily meetings, where operation supporters meet between shifts, to make sure that knowledge about whatever happened at – say – the day shift, is transferred to the evening shift. The meetings are short – around 15 minutes – but regularly interferences between groups of people that during their shifts have gained experiences that may be important for the subsequent shift.

Situations of serial interdependency

Serial interdependence is characterized by spanning several sub-activities, and these activities – like situations of pooled interdependence – also involve coordinating knowledge and professional knowledge. But the process of sharing coordination and professional knowledge is somewhat different, since situations of sequential interdependence are less stable than situations of pooled interdependence. One way of facilitating the sharing of professional and coordinating knowledge is to set up meetings, where the planning of activities can be discussed and decided upon on. In situations of serial interdependence, there need to be some elements of planning, since whatever you know, I will need to know so that I can perform whatever activity I am supposed to. Furthermore the relation is not symmetrical so one activity must be performed before others.

Of course, activities can be performed without relying on serial knowledge sharing, but the point is, that if knowledge sharing is to positively effect organizational performance, then companies will have to engage in serial knowledge sharing, since the process transfers knowledge from the more knowledgeable to the less knowledgeable. If knowledge is not being transferred, then there is a risk of reinventing the wheel – this will happen, when, for instance, operation supporters at the evening shift, make the same mistakes that operation supporters at the day shift already have done. Serial knowledge sharing is coordinated in planned and spontaneous meetings. The coordinated meetings could be considered as the kind of meetings between the work shifts mentioned above. The only – but major difference – is, that the receiver of knowledge not necessarily considers the knowledge being shared, as essential for his engagement in organizational activities, and therefore – rather than being a situation of serial interdependency – considers the process as one of pooled interdependence.

A more outspoken instance of serial knowledge sharing interdependence happens, when the operation supporters face a problem, they are not able to solve. Then, they need help in order to move on, and they will use their internal cell for calling colleagues. So, they spontaneously – and because of an apparently unsolvable problem – arrange for either a virtual (the internal cell) of physical meeting.

Situations of reciprocal interdependency

Under reciprocal knowledge sharing, both the receiver and sender of knowledge work in a variable and unpredictable situation, and they constantly need to adapt to each other. Therefore mutual adjustment is required, and this could be exemplified by joint execution, where the actors involved in concerted action also work simultaneously – both in time and space – on succeeding in sharing knowledge, and subsequently getting the job done.

Basically, companies will try to avoid situations of reciprocal knowledge interdependence, since this situation is the most costly way of sharing knowledge compared to situations of pooled and serial knowledge interdependence.

Estar very seldom engage in reciprocal knowledge sharing. The operation supporters work individually at fixing problems, and occasionally, they engage in pooled and serial knowledge sharing, and – apparently – this reduces their need for reciprocal knowledge sharing.

New operation supporters are, however, in a limited period of time supervised by more experienced colleagues, but these situations do not represent instances of reciprocal knowledge sharing, but solely a kind of serial knowledge sharing interdependence where the new comer will not be able to perform the job – on his own – prior to have been supervised by a more experienced colleague.

Types of knowledge and types of interdependency

Knowledge sharing is essentially a process supporting ongoing organizational activities, but it is not a generic process encompassing one type of knowledge and one type of organizational interdependency. Knowledge sharing is a process bridging situations of interdependencies, and as such the understanding of what kind of knowledge is being shared is deeply rooted in the perception of organization's central challenge being about coordinating situations of interdependencies. When companies practice knowledge sharing they tend to prefer databases and technological devices, which basically correspond to the coordination mechanisms discussed under situations of pooled interdependency. The explanation for this empirical phenomenon is that the cost of sharing knowledge increases when the platform for sharing knowledge moves, from one based on aggregated interdependence over sequential interdependence and to reciprocal interdependence. In the discussion of knowledge sharing in Estar the same phenomenon can be observed – most often the company seeks to share knowledge as if it represented situations of pooled interdependency. By moving from situations of pooled interdependency to situations of reciprocal interdependency the types of knowledge involved in knowledge sharing actually increase: situations of pooled interdependence involves professional knowledge, and coordination knowledge; situations of sequential interdependence involves professional knowledge, coordination knowledge and object-based knowledge; and situations of reciprocal interdependence involves professional knowledge, coordination knowledge, object-based knowledge and know-how. The point is, however, that Estar prefers to practice knowledge sharing as if the company only represented situations of pooled interdependency, thereby leaving out object-based knowledge and know-who. In the short term it is considered too costly to share these types of knowledge. Table II highlights some of the ways of facilitating knowledge sharing in Estar.

Table II Knowledge sharing in ESTAR

	Pooled knowledge sharing interdependence	*Serial knowledge sharing interdependence*	*Reciprocal knowledge sharing interdependence*
Pre-supposes How coordination mechanisms are practiced?	Rules and standardization Manuals Regular meetings	Meetings Regular meetings Spontaneous meetings Call for help Internal cell	Mutual adjustment Rarely happens

Conclusion

The discussion of knowledge sharing as a process of bridging situations of interdependencies is informed by Thompson's (1967) discussion of organizational interdependency, which lies at the core of organization theory. In contemporary literature on knowledge sharing there has, however, only been few attempts at incorporating perspectives from organization theory into the establishment of a theory of knowledge sharing.

Knowledge sharing is often considered as being a distinct process somewhat distant to the ongoing daily activities in organizations, and the main goal of knowledge sharing has been dominated by the closing of performance gaps. In this paper, the author has emphasized that knowledge sharing should not be considered as a distinct organizational activity transferring stocks of knowledge. Rather, knowledge sharing is – or should be – part of ongoing organizational activities, and therefore it is fruitful to consider the process as one of bridging situations of interdependencies.

Viewing organizations as representing situations of interdependencies emphasizes the need for coordination mechanisms, and how knowledge sharing is to be practiced is dependent on first, the type of interdependencies involved, second, the type of knowledge to be shared and third, the resources available for knowledge sharing activities. Often, companies – as is the case with Estar – agree on the importance of knowledge sharing, but they do not acknowledge that knowledge sharing actually incur costs. Therefore they tend to support knowledge sharing as if they were in situations of pooled interdependency but in the words of Thompson (1967) this will eventually favour the least costs to the increased instrumentality. Or, in other words – knowledge sharing will most likely fail.

Apart from emphasizing empirical coordination mechanisms such as databases and regular meetings, the case of Estar characterizes a situation of low believed interdependence, meaning that employees are not taking advantage of the knowledge possessed by colleagues. Employees do simply not accept interdependency, and will to a certain extent rather reinvent the wheel, than accept and live by the fact that interdependence is a common organization trait.

If companies are to practice knowledge sharing they must accept that getting started on sharing knowledge requires thorough identification and analysis of the problems that knowledge sharing are supposed to solved. This analysis has to start with identifying organizational interdependencies, and the flaws in bridging these interdependencies. Different forms of interdependencies involve different types of knowledge, and the sharing of these types of knowledge is to be facilitated differently. The sharing of specialized knowledge, coordinating knowledge, object-based knowledge and know-who is facilitated differently, and considering knowledge sharing as encompassing a generic form of knowledge denominated best practice will most likely produce little – if any – positive organizational outcome.

Limitations

The empirical study is based on simple and stable work processes as they are being performed in a Danish company. As such the study might pose a number of limitations in our understanding of knowledge sharing. First, the notion of knowledge sharing is limited to processes intended at sharing knowledge that already exist, which might favour stable environments to more dynamic environments. Analytically, it is possible to separate the exploitation and exploration of knowledge, but even though the empirical study focuses on more stable environments, it is still questionable whether it is at all possible to separate the exploitation of knowledge that already exists, and the exploration – or creation – of new knowledge. Second, the organizational culture is bureaucratic allowing for a more transparent knowledge sharing process including management processes such as control, reward and enforcement. Knowledge sharing is also embedded in the organizational culture, and less bureaucratic cultures have other means – such as social control as opposed to management control – to enforce knowledge sharing. This study, then, represents only part of the story of what knowledge is being shared – more empirical studies

are needed, but first and foremost the paper has argued that best practices have dominated the discourse on what knowledge is to be shared, but to become better at understanding and practising knowledge sharing we must expand of view on what knowledge is being shared.

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