

Knowledge Sharing

Time Sensitiveness and Push-Pull Strategies in a Non-Hype Organisation

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Knowledge sharing – time sensitiveness and push-pull strategies in a non-hype organization

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Abstract

The concept of knowledge management has, indeed, become a buzzword that every single organization is expected to practice and live by. Knowledge management is about managing the organization's knowledge for the common good of the organization – but practicing knowledge management is not as simple as that. This article focuses on knowledge sharing as the process seeking to reduce the resources spent on reinventing the wheel.

The article introduces the concept of time sensitiveness; i.e. that knowledge is either urgently needed, or not that urgently needed. Furthermore, knowledge sharing is considered as either a push or pull system. Four strategies for sharing knowledge – help, post-it, manuals and meeting, and advice are introduced. Each strategy requires different channels for sharing knowledge. An empirical analysis in a production facility highlights how the strategies can be practiced.

Keywords

Knowledge sharing, time sensitiveness, push and pull strategies, production facility.

Introduction

Management technologies pop up and fade away in never ending processes resembling the processes that shape clothing and interior fashion. Knowledge management is one such management technology that for around a decade ago popped up as the apparently one best way of managing organizations. Knowledge management has become a must have for organizations that want to be modern, or at least want to appear modern. Compared with literature on total quality management and business process reengineering the number of books and articles on knowledge management has since 1995 increased more than 40 per cent. Knowledge management, however, is not easy to understand or practice – there is no definition or proven best practice for managing knowledge, but rather a messy market for both academic discussions and consulting services on the concept of knowledge management.

Knowledge management encompasses many perspectives – from technology-based systems to physical structure discussions and to softer issues such as culture and learning. Central discussions within knowledge management relate to what knowledge actually is, what the purpose of handling knowledge is, and the challenges embedded in managing knowledge workers.

Basically, knowledge management deals with storing, creating, sharing and retaining knowledge, and this paper focuses on the processes of sharing knowledge.

Sharing of knowledge is both about combining existing knowledge differently with the purpose of creating new knowledge (Grant 1996), and securing that existing knowledge is distributed within – or across – organizational boundaries to prevent reinventing the wheel. This article explores the latter perspective.

The discussion on knowledge sharing is very much influenced and dominated by two ‘models’: the SRMC (source, recipient, message and channel) derived from communication theory, and the epistemological distinction between explicit and tacit knowledge. These models – or perspectives – highlight a lot of barriers and problems for sharing knowledge - problems such as the stickiness of knowledge (Szulanski 2003), knowledge of where to find knowledge (O’Dell & Grayson 1998), the tacit dimension of

knowledge (Nonaka & Takeuchi 1995), the relationship between the sender and receiver of knowledge (Hansen 1999), the motivational factor for engaging in sharing knowledge (Osterloh & Frey 2000), the discussion of which organizational units enable or hinder knowledge sharing (Brown & Duguid 2001) and the identification of knowledge worth sharing (Gupta & Govindarajan 2000).

It is, however, not only the spatial context in which the receiver and sender of knowledge is situated, that matters. Knowledge is also time sensitive: some knowledge will be needed here and now, whereas some knowledge will be stored and applied later. There are different degrees of time sensitiveness, and they will need different methods and tools for sharing knowledge.

Furthermore, as emphasized by Dixon (2000) knowledge can be either pushed or pulled – i.e. knowledge comes to the receiver because he wants as much (more or less unstructured) knowledge to come to him as possible, or knowledge is pulled as a consequence of a certain demand for knowledge.

This article combines the distinction between – on the one hand – high or low time sensitiveness – and, on the other hand, between push and pull strategies for sharing knowledge. The purpose is to emphasize that different degrees of time sensitiveness and strategies for sharing knowledge influence the methods and tools that can actually foster knowledge sharing.

The literature on knowledge sharing often refers to the best practice of sharing knowledge as something that is going on in either biotech, computer or consulting companies. Apparently, there is no knowledge sharing in other types of organizations. Knowledge sharing, however, is an ongoing concern in all types of organizations, whether they are what Blackler (1995) refers to as either knowledge-routinized or communication-intensive. By applying what may be termed a non-hype case on a hype concept like knowledge sharing, the article seeks to emphasize that no matter what type of organization you focus on, knowledge sharing – as a structured or semi-structured process – is actually going on, and a hype concept can learn from other types of organizations that are usually referred to as best practice organizations within the discussions focusing on the buzzword – or concept of knowledge sharing.

So, the purpose of this article is twofold: first to highlight the importance of time and push-pull strategies in relation to tools fostering knowledge sharing. Second, to analyse how knowledge sharing happens in what may be

termed a non-hype organization that is normally not associated with the hype concept of knowledge sharing.

The article starts out with laying a theoretical foundation for the sharing of knowledge across time, and for applying push-pull strategies. Subsequently, an empirical analysis of a Danish production facility informs the theoretical discussions with how a company actually applies different tools and methods for sharing knowledge.

The theory of knowledge sharing

There is no knowledge sharing theory as such, but different views on what knowledge sharing is, what the barriers and enablers for knowledge sharing are, and suggestions for overcoming these barriers. Knowledge sharing is expected to yield sustainable competitive advantage, since the process identifies and applies a better practice for exploiting knowledge that the organization already possesses or has access to. In a Penrosian view knowledge sharing is, hence, a valuable resource that is difficult to imitate. Creating the valuable resource is, however, difficult, since organizations often lack a definition of what knowledge sharing is, what the purpose of knowledge sharing is, and how to evaluate and adjust the processes of sharing knowledge.

The literature on knowledge sharing addresses two basic problems: What are the barriers for knowledge sharing, and how do organizations deal with these barriers in order to enable knowledge sharing – or, in other words: what are the enhancers for sharing knowledge? Barriers and enhancers go, basically, hand in hand – the literature that highlights certain barriers for knowledge sharing also offers some enhancers for overcoming these barriers. Broadly speaking, knowledge sharing – as the process of reducing the invention of the wheel – encompasses four pairs of barriers and enhancers:

- The stickiness of knowledge (Hansen, Nohria & Tierney 1999; Nonaka & Takeuchi 1995; Szulanski 1996, 2003).
- No sharing of identity (Brown & Duguid 2000, 2001; Davenport, DeLong & Beers 1998).

- No relation between the receiver and sender of knowledge (Davenport & Prusak 1998; Hansen 1999).
- No knowledge of knowledge (Gupta & Govindarajan 2000; O'Dell & Grayson 1998).

The stickiness of knowledge refers not, as such, to the stickiness of a transfer (Szulanski 2003: 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 & Takeuchi (1995) – knowledge can be considered as either tacit or explicit. Tacit knowledge can be said to be more stickier 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 group understand each other better, than people from outside the group. 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 or have the same identity.

Personal or organizational networks play an important role in accessing knowledge. Sharing knowledge presupposes some kind of personal or virtual network, since the process involves both a sender and receiver of knowledge. Without networks there is no opportunity for accessing knowledge. Networks can be maintained by formal or informal face-to-face meeting, or – the latest trend – by physical structures that do not allow individual cubicles, but emphasizes transparent community spaces.

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, some kind of yellow pages – or personal know-who based on for instance trust – will enhance knowledge sharing.

Knowledge sharing is not necessarily a well-structured process. On the contrary, knowledge sharing is often unstructured and happens by coincidence – or, as Davenport & Prusak (1998: 88) phrase it: “Knowledge is transferred

in organizations whether or not we manage the process at all”. The hype on knowledge sharing tries, however, to structure knowledge sharing processes better, and make them more planned, so that organizations will benefit from savings in not reinventing the wheel too often. But this is exactly one of the dilemmas in knowledge sharing – to structure unstructured processes so that they will maintain their autonomous, motivational and empowered characteristics that, apparently, are important for the process of continuously sharing knowledge and, hence, exploiting existing resources.

Discussing and practicing knowledge sharing needs a working definition of knowledge sharing, and this article applies the following definition: Knowledge sharing is about identifying (accessible) knowledge that already exists - and (storing and subsequently) applying this knowledge to make processes faster, better or safer than they would have otherwise been. So, basically knowledge sharing is about exploiting accessible resources, i.e. knowledge.

The working definition assumes that there actually exists valuable knowledge (Gupta & Govindarajan 2000), that valuable knowledge can be identified (O’Dell & Grayson 1998), and that there is access to valuable knowledge (Hansen 1999).

The existence of knowledge presupposes a working definition of knowledge that enables qualifying something as being – or not being - knowledge. Otherwise it will be difficult to know what to look for when initiating knowledge sharing processes. How then do senders or receivers of knowledge know whether they possess – or have access to – valuable knowledge that is actually worth sharing? This is one of the few not so well discussed issues within the concept of knowledge sharing. The discussion can be related to philosophically discussions on what is knowledge, and be answered with the classical definition of knowledge being justified true beliefs. Organizations do, however, very seldom – at least explicitly - apply philosophically informed working definitions on knowledge¹. Rather they use a more pragmatic way of identifying valuable knowledge, namely by looking on what actually works. If producing a given product works better, safer, faster or cheaper – or whatever the justification for what works is – in

¹ The term ”a philosophically informed working definition” is by itself an oxymoron since it implies that philosophy works – a point probably only pragmatics will agree upon.

department A than B, the department B is supposed to adopt the knowledge in department A in order to ensure similar production processes. A way of identifying valuable knowledge is, hence, to benchmark the productivity of – for instance – different groups or departments, in order to visualise where the valuable knowledge resides.

One of the main problems in benchmarking is, then, to make sure that the benchmarking results are dispersed and applied within the organization so that no project will start – or no problem be solved – without prior consulting the list of best practices thereby ensuring that the wheel is not reinvented. Sometimes, however, the ‘not-invented-here’ syndrome can hinder the transfer of best practices.

Knowing that knowledge exists and identifying where it exists is not sufficient for initiating knowledge sharing. As emphasized in the SRMC model, sharing requires both a sender and receiver of knowledge, and presupposes a kind of friendly relationship between a holder of knowledge, and a potential receiver of that knowledge.

Now, if you know that the knowledge is valuable and where the knowledge exists, how do you persuade the person that holds it to send it to you? A much discussed barrier for sharing knowledge is the assumption that knowledge equals power, and sharing knowledge – hence – means losing power. There is a certain kind of knowledge hegemony (von Krogh 1998) that is difficult to overcome. A way of enhancing knowledge sharing could be by forcing the sender to share his knowledge – this is, however, not a suitable strategy for managing knowledge workers – by definition they hate control. Another way is by financially rewarding the sharing of knowledge – you are compensated for losing part of your power.

The power issue is, as emphasized above, but one of the many problems in accessing valuable knowledge.

The time issue is yet another barrier for sharing knowledge. The article deals, however, with this issue in another way than the traditional perspective of not having enough time to share knowledge. Time is viewed as an indicator for whether the process of sharing knowledge is either time sensitive or not that time sensitive. Time sensitive knowledge sharing means that a receiver of knowledge has a critical need for that knowledge – otherwise the receiver will not be able to solve a concrete (and time critical) task. On the other hand, not

that time sensitive knowledge sharing describes a situation where a receiver at the present is not engaged in a time sensitive task, but maybe later will benefit from the knowledge he receives or has the possibility of receiving.

Knowledge sharing happens either through a push or pull systems. Push systems are characterized by being almost automatic and happening infrequently (Dixon 2000: 59). Emails are one such system. Pull systems, on the other hand, require a request before knowledge starts moving, and – eventually – is being shared.

Both the distinction between time and not time sensitiveness, and between push and pull systems, are important for analysing the barriers and enhancers for knowledge sharing, and for discussing which tools, methods and strategies to apply in sharing knowledge in and across organizations.

Combining time sensitiveness and the push-pull systems for knowledge sharing, leads to a two by two matrix with four possible strategies to follow in order to enhance knowledge sharing.

Push	Post-it Urgently distributed knowledge	Manuals and meetings Distributed knowledge
Pull	Help Urgently requested knowledge	Advice Requested knowledge
Strategy / Time	Urgently	Not now

The strategies are denominated: help, post-it, manuals and meeting, and advice, and characterize the channels a receiver uses to push or pull

knowledge depending on whether knowledge is urgently needed. Applying the strategies presupposes – as discussed above:

- That valuable knowledge actually exists (i.e. some kind of working definition of knowledge that will make it easier to look for valuable knowledge, and – hence – to know whether valuable knowledge exists).
- Knowledge of the location of knowledge. (i.e., know where to look for knowledge).
- Access to knowledge (for instance networks enhanced by trust based relationships).

A help strategy emphasizes the urgently need for knowledge – if the receiver does not receive knowledge right away, the receiver will not be able to complete his task.

Help can be requested through channels such as an organizational hotline, or by asking the colleagues around. Urgently needed knowledge can also be pushed through channels such as post-it's – i.e. remember when performing this task you should do so and so.

When the receiver does not need the knowledge urgently, he can – more or less unstructured – ask colleagues in the cantina (the advice strategy), or he can refer to more formalized knowledge such as manuals and emails that has been pushed through – very often – technologically channels, or structured meetings that are supposed to coordinate – for instance – the introduction of new knowledge.

Barriers and enhancers for knowledge sharing are manifold. To know how to overcome the barriers and enhance the process of sharing knowledge requires a focused view on doing the sharing of knowledge. The theoretical discussion has emphasized many perspectives on knowledge sharing – in the end, however, the discussion focused on time sensitiveness and push-pull systems in order to extract strategies for knowledge sharing, and the 'proper' method to apply depends on whether knowledge is urgently needed or not, and whether knowledge is being pushed or pulled.

In the next section these theoretical perspectives are being applied on an empirical case representing perspectives on both time sensitiveness and push-pull systems.

The case

The case company – called 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 around 1200 employees including administration, planning and production.

This article 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 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 the knowledge sharing processes.

Doing the sharing of knowledge

As in probably every case on doing the sharing of knowledge, the two most important barriers for knowledge sharing are 1. Not enough time, and 2. Not enough technologically devices. At least, that was according to the initial data gathering in the questionnaire.

During the personal interviews a lot of answers such as “we have no knowledge sharing culture”, “we only share knowledge with our own shift”, and “knowledge sharing just simple doesn't work” characterized the process of sharing knowledge.

The production processes in Estar are very much based on experience-based knowledge – i.e. some kind of tacit knowledge that to some extent is

difficult to express. Or, as several repair technicians emphasized, “There is no easy way to learn how to fix the machines, it usually takes around a year to learn how to deal with the most common problems around”. Likewise, knowledge sharing could be expected to come not that easy. Even though a lot of the valuable knowledge is experience based – and knowledge sharing should be expected to happen only between individuals – Estar implicitly applies different channels for sharing knowledge – channels that focus on both explicit and tacit knowledge.

Since the dominating epistemology reflects experience-based knowledge, the identification – and the working definitions of knowledge – is very much tied to a pragmatic epistemology defining knowledge as “whatever works”. The problem with the pragmatic epistemology, however, is that “whatever works” may only work for a couple of hours, and a new trial-and-error process starts in order to identify new knowledge that “works”. This ongoing process emphasizes the need for knowledge sharing, because a group of repair technicians at the day shift can – at least in theory – look for exactly the same type of knowledge a group of repair technicians at the night shift are looking for. This actually happens occasionally in Estar. As one repair technician emphasized: “Once I worked 3 hours to identify a problem in one of our machines. Eventually I went to the manager and said that we need to call an external advisor. The manager said, that he already had done that, because one of the other repair technicians also had worked 3 hours with the same machine without identifying the problem”.

During a shift repair technicians fix a lot of problems at different machines. To make sure that they are not performing the same diagnosis that already has been performed, they use what they call logs: A short hand written description of what has actually been done to fix a certain problem. The log is pushing knowledge from one repair technicians to another – they are separated in time, but in order not to reinvent the wheel the repair technician urgently need the knowledge to proceed the repair of the machine. The log is situated close to where the knowledge is to be applied – i.e., the machine, and therefore – it is easily accessible. It is a kind of yellow pages post-it. When there is not knowledge around about what earlier has been done with the machine, the repair technician can either start reinventing the wheel, or he can pull knowledge by asking his colleagues. The problem, however, is that his

colleagues are often engaged in servicing machines somewhere else. He will then use his cell phone – and disturb his colleague, or he will actually start reinventing the wheel. A third option – something the repair technicians suggested, but did not yet practice – could be to introduce some kind of knowledge broker. A person the repair technician could call upon completing a service check, and – equally important – before starting fixing a machine. This is expected to be less time consuming than the hand written logs.

Knowledge is also shared across day, evening, night and weekend shift. Structured meetings before each shift are supposed to collect and disperse important knowledge about what kind of problems have occurred, and how they were solved. These meetings do, however, only work between the night and day shift, and each daily meeting often lasts about 40 minutes. Somehow, the meetings do not work between the other shift – as one repair technician emphasized in relation to sharing knowledge between the evening and night shift: “When we start the night shift, we normally use a couple of hours to “clean up the mess” – meaning to find out what has actually happened, and what has been done about it”.

The repair technicians receive and send a lot of emails – this way they cover their back – but it also leads to an overload of emails. As one repair technician remarked: “I would rather reward the person who sends one important mail, than the person who daily sends more than 30 mails”. By sending – or pushing – a mail on, for instance, what they have found out in relation to a certain problem, they think that they have done everything to make sure that all relevant persons have received the often critical knowledge. But very often, these changes are not being very well distributed because there is no discipline as to checking emails. It is simply too time consuming – however, it does lead to a lot of errors. As one repair technician remarked: “Changes can suddenly occur as errors that need to be corrected, simply because knowledge has not been distributed properly”.

Even though the repair technicians are very busy fixing problems, they – occasionally – meet in what they call a “SnakBar” (a “talk bar”). Here they exchange experiences and look for advice from colleagues doing basically the same as they do, but with whom they do not meet very often.

There is no explicit knowledge sharing strategy in Estar. A lot of the knowledge sharing activities happens unstructured and almost by coincidence.

Estar, however, implicitly applies four different channels for sharing knowledge. The help strategy is often facilitated by calling colleagues – by phone or because they happen to be around. The post-it strategy is characterized by logs that are located where the knowledge is supposed to be applied – i.e. the machines. Manuals and meetings are structured processes that partly work – likewise, requesting advice works only occasionally because there is not enough time for meeting colleagues from within the community of practice.

The table below summarizes the empirical observation on time sensitiveness and push-pull systems.

Push	Post-it Logs	Manuals and meetings User manuals Emails
Pull	Help Hotline Talk- real time communication	Advice Talk SnakBar
Strategy / Time	Urgently	Not now

Conclusion

Organizations engaging in knowledge sharing activities do not solely have to focus on the epistemological distinction between explicit and tacit knowledge. There is more to knowledge sharing than the SECI model (Nonaka & Takeuchi 1995). Barriers and enhancers for knowledge sharing are very much discussed – and the literature on knowledge sharing tries to identify the one

best way for doing the sharing of knowledge. There are, however, endless ways of sharing knowledge, reflecting the manifold of perspectives one can apply for analysing and discussing the doing of sharing knowledge.

This article has focused on time as an import perspective. Not the classical barrier of not having enough time for engaging in knowledge sharing, but time as a timeline where knowledge is either urgently needed here and now, or needed later on. The discussion on push and pull systems was applied to emphasize that how to cross time zones depend on whether knowledge is being requested, or almost automaticly is being distributed.

The four strategies for sharing knowledge – help, post-it, manuals and meetings, and advice, were applied to an empirical case to highlight how they are actually practiced. The case emphasized that knowledge is very much pulled in order to solve daily problems. So, what is important is not the knowledge itself, but the knowledge about where to find knowledge. Furthermore, the case do not explicitly focus on knowledge sharing techniques, but they somehow – even as a non-hype organization – manage knowledge, and maybe that's why it works.

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