# The Concept of Knowledge Communication and Its Relevance to Management

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**Abstract**:
In this research note we illustrate the relevance of the notion of knowledge communication for management. We outline where and how the communication of expertise from specialists to decision makers is crucial. We introduce key elements of the concept of knowledge communication and review influential theoretical constructs that explain why knowledge communication among experts and decision makers frequently fails.

## 1. INTRODUCTION: THE IMPORTANCE OF KNOWLEDGE COMMUNICATION IN MANAGEMENT

Communicating professional knowledge is a key activity for today's specialized workforce. The efficient and effective transfer of experiences, insights, and know-how among different experts and decision makers is a prerequisite for high-quality **decision making** and co-ordinated, organizational action (Straub & Karahanna, 1998; Rosenthal & 't Hart, 1991). Situations of such deliberate (interfunctional) **knowledge transfer** through interpersonal communication or group conversations (Gratton & Goshal, 2002, Tsoukas 1996) can be found in many business constellations, as the following typical examples illustrate: Technology experts present their evaluation of a new technology to management in order to jointly devise a new production strategy (McDermott, 1999). Engineers who have discovered how to master a difficult manufacturing process need to convey their methods to engineers in other business units (Szulanski, 1996, 1999). Legal experts brief a management team on the implications of new regulations on their business model (Wilmotte & Morgan, 1984). **Experts** from various domains need to share their views and insights regarding a common goal in order to agree on a common rating of risks, requirements (Browne & Ramesh, 2002), industries or clients. Project leaders need to present their results to the upper management and share their experiences of past projects in order to assess the potential of new project candidates

(Schindler & Eppler, 2003). Scientists who work as drug developers present new avenues for future products that business unit managers must assess. Market researchers present their statistical analyses of recent consumer surveys to the head of marketing (Boland et al., 2001). Strategy consultants present the findings of their strategic company assessment to the board of directors in order to devise adequate measures (Creplet et al., 2001).

What these diverse situations all have in common is the problem of ***knowledge asymmetry*** (Sharma, 1997) that has to be resolved through interpersonal communication. While the manager typically has the authority to make strategic or tactical decisions, he or she often lacks the specialized expertise required to make an informed decision on a complex issue (Watson, 2004). Because of the wide scope of decisions that need to be made, a manager frequently has to delegate the decision preparation to experts who – based on their professional training and previous experience – can analyze complex situations or technological options in a more reliable manner. The results of such analyses then need to be communicated back to the manager, often under considerable time constraints. The knowledge communication challenge, however, begins long before that, at the time when the manager has to convey his or her knowledge needs and decision constraints to the experts in order to delegate the analysis task effectively.

## 2. BACKGROUND: THE CONCEPT OF KNOWLEDGE COMMUNICATION

Based on the reasoning described in the previous section, we define **knowledge communication** as the (deliberate) activity of interactively conveying and co-constructing insights, assessments, experiences, or skills through verbal and non-verbal means. Knowledge communication has taken place when an insight, experience or skill has been successfully reconstructed by an individual because of the communicative actions of another. Knowledge communication thus designates the successful transfer of know-how (e.g., how to accomplish a task), know-why (e.g., the cause-effect relationships of a complex phenomenon), know-what (e.g., the results of a test), and know-who (e.g., the experiences with others) through face-to-face (co-located) or media-based (virtual) interactions. This type of knowledge communication can take place synchronously or asynchronously[1]. The first mode of communication refers to (often face to face) real-time interactions, while the latter designates delayed (usually media-based) interactions.

We use the term ***knowledge dialogues*** for the first type of (synchronous) knowledge communication, stressing the interactive and collaborative style of knowledge exchange in this communication mode (see Isaacs, 1997, Nonaka et al., 2000). Depending on the knowledge-focused goal of such dialogues, we distinguish among *Crealogues* (that focus on in the creation of new insights), *Sharealogues* (facilitating knowledge transfer), *Assessalogues*

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[1] Both modes can be used in one-to-one or one-to-many contexts. Both modes can rely on speech, text, graphics, and other means of communication (i.e., verbal and non-verbal).

(focusing on the evaluation of new insights) and *Doalogues* (e.g., turning understanding into committed action, i.e., 'talk the walk'). Each type of knowledge dialogue requires different behavior and interaction patterns and support measures (e.g., whereas Assessalogues require critical, convergent evaluation tools, Crealogues require an open atmosphere for divergent thinking and rapid idea generation without judgment).

With regard to asynchronous knowledge communication, we refer to the concept of **knowledge media** (see Eppler et al., 1999) that enable knowledge transfer through technology-based communication, collaboration, e-learning, aggregation, retrieval and archiving services. Knowledge media can be differentiated in terms of their target community, e.g., scientific knowledge media, public knowledge media, professional knowledge media, etc. The concept of knowledge media in general stresses the importance of a community that collaborates regularly using a common platform that consists not only of IT-functionalities, but also of common communication norms and (usage) rules.

In this understanding, knowledge communication is *more* than communicating information (e.g., facts, figures, events, situations, developments, etc.) or emotions (e.g., fears, hopes, reservations, commitment) because it requires conveying context, background, and basic assumptions. It requires the communication of personal insights and experiences. Communicating insights requires the elicitation of one's rationale and reasoning (i.e., one's argumentation structure), of one's perspective, ratings and priorities, and of one's hunches and intuition. At times it may even be necessary to present an overview of the expert's relevant skills along with his/her previous professional experiences and credentials (Lunce et al., 1993) in order to build trust and enable an adequate atmosphere for effective knowledge transfer. Thus, in addition to pure information (and at times emotion), a myriad of other indicators need to be provided in order to transfer knowledge. These indicators help the person who requires insights from another to understand the other's perspective, to re-construct the other's insights correctly, and to connect them to one's own prior knowledge.

Still, knowledge communication does not only differ in terms of *what* is communicated (knowledge in context rather than isolated data or information[2]), but also *how* one communicates. The transfer of information can often be successful without additional effort beyond an ordinary, every day communication style. Communicating expertise-based, complex insights, by contrast, calls for didactic tricks and at times sophisticated indirect speech acts and visualization means that help the other side to become actively involved in the

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[2]  Our distinction between data, information, and knowledge follows the main stream conception found in current literature (see for example Davenport & Prusak, 1998). We view data as isolated recordings that are often generated automatically and cannot be directly used to answer questions. Information is connected, condensed or generally processed data that allows an individual to answer questions. Knowledge is what enables an individual to ask relevant questions (Newman and Newman, 1985, p. 499). It refers to the capability of an individual to solve problems (Probst et al., 1999). Information only becomes knowledge, if a person interprets that information correctly, connects that piece of information with his or her prior knowledge, and can apply it to problems or decisions (see also Alavi & Leidner, 2001)

communication and engage in a collaborative, goal-directed sense making process – a prerequisite for the construction of new knowledge (see Weick, 1995). The process of knowledge communication hence requires more reciprocal interaction between decision makers and experts because both sides only have a fragmented understanding of an issue and consequently can only gain a complete comprehension by iteratively aligning their mental models. All of this means that when we communicate knowledge, we are still communicating information and emotions, but we also create a specific type of context so that this information can be used to re-construct insights, create new perspectives, or acquire new skills.

This (interpersonal) communication perspective on knowledge transfer has already been emphasized by other researchers – who explicitly label this view as 'knowledge communication' – (Scarbrough, 1995, p. 997; Antonelli, 2000; Harada, 2003; Reiserer et al., 2002) and by several practitioners (e.g., Watson, 2004). Nevertheless, these authors have often treated knowledge communication as a kind of black box that is described only in broad terms and general traits, such as the major communication goals or steps. By examining the communication problems which often impede knowledge transfer in detail, we can look into this black box and propose pragmatic ways of improving knowledge communication, especially among experts and managers where the chasm between in-depth knowledge and decision authority is particularly apparent.

## 3. PROBLEMS IN COMMUNICATING KNOWLEDGE AMONG EXPERTS AND DECISION MAKERS

In order to better understand the problems that can impede the effective transfer of decision-relevant knowledge from experts to managers and from managers to experts, we will review relevant constructs and prior findings from social and engineering sciences, as there are in fact numerous concepts that describe issues related to sub-optimal knowledge transfer. These concepts regard topics such as interdepartmental knowledge transfer, professional communication, decision making, communication technology, or the nature of expert knowledge. By screening these disciplines and topic areas, we can establish a first overview of possible knowledge communication problems and we can create a systematic terminology to speak more explicitly (and consistently) about knowledge communication barriers.

Previously identified barriers of knowledge communication are summarized in Table 1. There are three main criteria for including concepts in this table: first, the concept has to be closely related to problems of interpersonal, professional knowledge transfer[3]. Second, the concept

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[3] The concept does not have to originate in the context of interpersonal communication research, but its application to it must be obvious and fruitful, as in the example of the ASK problem. The ASK problem was

has to describe a problem of major impact on the quality of knowledge transfer (rare or very specific issues are not included). Third, the concept has to be influential, i.e., it has to be cited with the same construct label by several authors (other than the creator of the concept). The resulting list in Table 1 first includes 'umbrella' concepts that designate a group of closely related problems, such as cognitive biases, decision making problems, argumentation fallacies, communication biases, or defensive routines, and then concepts that label individual problems, such as the not-invented here syndrome or the ASK problem. The 'Impact on' column designates whether the particular concept is mostly a weakness of decision makers or of experts, or for both professional groups.

Table 1: Key research concepts that illustrate knowledge communication barriers

| Key Concept / Knowledge Communication Barrier | Description | Impact on | References |
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| **Absorptive capacity** | Limited ability of decision makers to grasp the knowledge of the expert based on lack of prior knowledge. | Decision makers | Bower and Hilgard, 1981; Cohen & Levinthal, 1990 |
| **Argumentation fallacies** (begging the question, overgeneralizing, personal attacks, defective testimony, problematic premise, slippery slope, red herring, etc.) | In demonstrating one's ideas and insights, people fall into argumentative traps, such as begging the question (circular reasoning), over-generalizing, appealing to false majorities or false expertise, reasoning ad consequentiam (what shouldn't be true, can't be true) or reacting with direct attacks at a person (at hominem) rather than at a knowledge claim. | Experts and decision makers | Van Eemeren et al., 1992 |
| **ASK problem** | Anomalous State of Knowledge: when a decision maker does not have the knowledge base to really know what to ask for. People need to know quite a bit about a topic to be able to ask or search for relevant information. | Decision makers | Belkin, 1980 ; Chen et al., 1992 |
| **Cassandra syndrome** | The decision makers do not give sufficient weight or attention to an expert's warning because they face many other important problems. Only when the situation has deteriorated dramatically do they start taking the expert's advice. | Decision makers | Mikalachki, 1983 |
| **Cognitive biases** (confirmation, availability, recency, dichotomized reasoning, framing, anchoring, representativeness, etc.) | Knowledge may not be correctly interpreted or used due to biases in one's reasoning, such as listening only to those insights that confirm one's prior opinion. | Experts and decision maker | Tversky & Kahnemann, 1974 |
| **Common knowledge effect** | The tendency of a group to focus merely on commonly shared (rather than unique) pieces of information. | Experts and decision makers | Gigone & Hastie, 1993 |
| **Communication biases** (audience tuning, misattribution bias, saying-is-believing, shared reality) | The knowledge is inadvertently manipulated through communication itself:<br>- *Audience Tuning*: Communicators spontaneously tune their messages to:<br>–the personal characteristics of the audience<br>–the situational factors<br>–*Misattribution Bias:* Communicators tend to consider their audience-tuned messages to be about the topic of the message rather than about the audience<br>- *Saying-Is-Believing Effect:* Auto-persuasion has | Experts and decision makers | Higgins, 1999 |

first discussed in the information retrieval community, but it has ramifications for interpersonal knowledge communication as well.

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| | stronger effects because one does not activate regular mechanisms of critical reflection.<br>- *Shared Reality*: You consider your audience-tuned message to provide objective, accurate information on the message topic because it was shared with others. | | |
| **Decision problems** such as plunging in, shooting from the hip, poor feedback, taking shortcuts, frame blindness etc. | The decision maker may for example believe that he/she can make a complex decision right away without looking further at the provided analysis. | Decision makers | Russo & Shoemaker, 1989 |
| **Defensive routines** (skilled incompetence, learned helplessness, easing-in, etc.) | New knowledge is sometimes not accepted (or provided) due to mechanisms or habits that prevent the identification and acceptance of one's own ignorance. This may lead to a reduced effort to understand complex issues (learned helplessness). | Decision makers | Argyris, 1986, 1990 |
| **Expert inconsistency** | Sometimes experts indicate other rules than they actually apply in their problem solving. | Experts | Johnson, 1983 |
| **False consensus effect** | We assume others see situations as we do, and fail to revise our framing. | Decision makers | Manzoni & Barsoux, 2002 |
| **Groupthink** | A (management) team may not truly listen to the input of an expert because of the team's group coherence and group dynamics sometimes block outside advice and feel omniscient. | Decision makers | Janis, 1982 |
| **Hidden profile problem** | One often doesn't know other people's background (profile), i.e., what they know and could contribute to a problem's solution. The knowledge that is thus frequently shared in a discussion is what is expected by everyone. | Decision makers | Stasser 1992; Stasser & Stewart, 1992 |
| **Inert knowledge** | The knowledge that the decision maker has acquired from the expert does not come to mind when it is needed or useful for decision making or actions. The transferred knowledge is stuck in the situation where it has been acquired. | Decision makers | Whitehead, 1929 |
| **Information overload** | An individual is sometimes not able to integrate new information into the decision making process because too much complex information has to be interpreted too quickly. | Decision makers | O'Reilly, 1980, Eppler & Mengis, 2004 |
| **Ingroup outgroup behavior** | We tend to interact more with likewise groups than with others thus reducing our changes to acquire radically new knowledge. | Decision makers | Blau, 1977 |
| **Internal knowledge stickiness** | Knowledge can sometimes not be transferred because of arduous relationships or casual ambiguities regarding the knowledge or because of the lack of absorptive capacity of the knowledge receivers. | Decision makers | Szulanski, 1996, 1999 |
| **Knowing-Doing gap / Smart talk trap** | Sometimes organizations know where a problem resides and how to tackle it, but do not move from knowledge to action (due to unhealthy internal competition or lacking follow-up). | Decision makers | Pfeffer & Sutton, 2000 |
| **Knowledge disavowal** | A number of factors have been found which limit information use in organizations, such as not spending enough time collecting advice, refusal to share, fear of exposure, etc. Knowledge disavowal occurs when reliable and relevant information is not shared among decision makers. | Decision makers | Zaltman, 1983; Deshpande & Kohli, 1989 |
| **Knowledge sharing hostility** | Knowledge communication fails because the 'knowledge giver's are reluctant to share their insights due to micropolitics, strenuous relationships, or due to fear. | Experts | Husted & Michailova, 2002 |
| **Lack of common ground** | Common ground refers to the manager's and expert's assumptions about their shared background beliefs about the world. If those assumptions are wrong or inconsistent communication becomes more difficult. | Experts and decision makers | Clark & Schaefer, 1989, Olson & Olson, 2000 |
| **Micropolitics of knowledge** | The 'knowledge claims' of an expert are discredited by the decision makers due to their | Decision makers | Lazega, 1992 |

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| | differing (hidden) agenda, because of a coalition of people with an alternative view, or due to the expert's lack of formal authority. | | |
| **Mutism** | Because of an inadequate understanding of the role and capabilities of an expert, the decision maker does not articulate his suggestions, but remains quiet when asked about his expectations or needs. | Decision makers | Cantoni & Piccini, 2004 |
| **Negative Transfer** | Negative transfer occurs when knowledge from one area of expertise is incorrectly applied in a different problem solving domain | Expert | Van Lehn 1998 |
| **Not-Invented here syndrome** | Knowledge from others is sometimes rejected because it originated elsewhere. | Decision makers | Katz & Allen, 1982 |
| **Paradox of expertise / Curse of Knowledge** | Experts sometimes find it difficult to articulate their knowledge or rephrase their insights in a way that non-experts can relate to. An insight seems to them self-evident whereas for others it is in fact difficult to grasp. | Experts | Hinds 1999; Johnson, 1983 |
| **Preference for outsiders** | This is the opposite of the NIH syndrome and describes the tendency of managers to value outside knowledge higher than internal knowledge because it has a higher status, it is scarcer (because of difficult access) and because it is less scrutinized for errors than internal knowledge. | Decision makers | Menon & Pfeffer, 2003 |
| **Projectionism** | In the communication of his or her analysis results, the expert does not tailor his insights to the knowledge of the decision maker, as he assumes that the target group already has a similar understanding of an issue. | Experts | Cantoni & Piccini, 2004 |
| **Self/Other effect** | Individuals tend to discount advice and favor their own opinion. | Decision makers | Yaniv & Kleinberger, 2000 |
| **Set-up to fail syndrome** | Managers are projecting their initial expectation of an expert's likely performance unto him/her, leading to the self-fulfilling prophecy of (at times) lower performance. This is aggravated by de-motivating feedback to the expert. | Experts and decision makers | Manzoni & Barsoux, 2002 |
| **Task closure** | In our communication, we may choose to use a one way communication medium because it permits us to close an open task without having to have a conversation. Thus leaner communication channels are used than may be necessary. In other words: We tend to want to close a communication process in order to complete an open task. | Decision makers | Straub & Karahanna, 1998; Meyer, 1962 |
| **Terminology Illusion** | Experts tend to overestimate the notoriety of terms at the limits of every day language and specialized language. In consequence they overestimate the level of understanding of non-experts of what they communicate. | Experts | Rambow 2000 |

The problems listed in Table 1 are neither mutually exclusive nor collectively exhaustive. Nevertheless, Table 1 summarizes many of the key pitfalls in communicating knowledge. It is in the nature of the phenomenon that these problems are not isolated, but that they rather interact in many, sometimes unpredictable ways.

Based on the concepts from Table 1, and based on ten focus groups[4] and ten personal interviews with engineers that frequently collaborate with managers in their companies, as

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[4]    Each focus group lasted for approximately one hour and consisted of 12-20 participants. The focus groups were conducted in 2002 and 2003 in Switzerland and Germany with engineers and IT specialists from eight

well as interviews with 20 IT managers[5] who regularly interact with experts for their decision making, we distinguish among five types of knowledge communication problems. These are briefly summarized below, followed by examples of each type of problem, cited from both experts and managers.

The first type of knowledge communication problems is *expert-caused* difficulties. These mistakes make it cumbersome for the decision maker to grasp the insights of a specialist. This type of problem also includes issues that make it difficult for the manager to explain his or her own constraints and priorities. Examples of this kind of problem are the use of overly technical jargon, not relating the insights to the manager's situation, starting with details before an overview is given or lacking interest of the expert in related (but relevant) issues. From the list provided in Table 1, knowledge-sharing hostility and the paradox of expertise clearly belong to this category.

The second type of knowledge communication challenges is *manager-caused* problems that leave it unclear to the expert what the manager actually expects from him/her (briefing). This makes it difficult for the expert to convey what he or she knows. Management mistakes make it harder for the manager to fully profit from the offered expertise. For example, a manager's reluctance to discuss detailed problems may have major effects on an issue, such as lack of concentration and attention or lack of technical know-how. From the list in Table 1 the decision problems, the ASK problem, the Cassandra syndrome or the inert knowledge problem are typical examples of this group.

The third type of knowledge communication problems are caused by the *mutual behavior* of experts and managers, including their experiences or attitudes (e.g., reciprocal stereotypes and role misunderstandings). Examples from the list of concepts that belong to this group are lacking feedback on both sides, the set-up to fail syndrome, groupthink, and ingroup outgroup behavior on both sides.

Fourth, we see problems caused by the *interaction situation* of the expert-manager interaction, such as time constraints, communication infrastructure, distractions, interventions from others, etc. The problem of information overload in Table 1 can arise due to the time constraints in a communication situation. But the hidden profile problem can also be due to the communicative situation, where the background of the participants is not fully revealed or discussed at the beginning of a manager-expert interaction.

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companies (each employing more than 1000 people). Focus group facilitation and documentation was provided by the research team. The topic of the focus group discussion was "communication problems among engineers/specialists and managers".

[5] Each interview lasted between 30 minutes to two hours. Interviewees were mostly senior IT managers or chief information officers of medium-sized and large Swiss companies, as well as select line managers with

The fifth and final type of knowledge communication problems includes issues that are caused indirectly by the *overall organizational context* of managers and experts, such as their organizational constraints and their differing tasks, priorities and interests. The 'micropolitics of knowledge' concept listed in Table 1 would be an example of the (negative) impact of the organizational context on the transfer of knowledge.

## CONCLUSION AND FUTURE TRENDS

Many studies in knowledge management examine the structural, macro aspects of knowledge transfer on an organizational level (Szulanski, 1999). There are also studies that examine the general motivational barriers to such transfers (Husted & Michailova, 2002). The field of knowledge communication, by contrast, examines the micro perspectives of knowledge transfer, thus highlighting the role of adequate or inadequate communication behavior patterns for knowledge transfer. These examined patterns go beyond the question of motivation and encompass issues such as the use of adequate language, timing, group interventions, or media use for knowledge transfer. This article has defined this approach as knowledge communication. It has outlined the various problems that exist when individuals (particularly experts) communicate their knowledge to others (e.g., managers). This problem jostle can lead to improved communication knowledge for knowledge communication (Hägglund et al, 1992). Future knowledge management research should build on these insights and examine ways of facilitating and thus improving knowledge communication. This can be achieved through such tools as knowledge visualization suites, dialogue techniques, or knowledge elicitation methods. In doing so, future research should pay particular attention to the influence of (expert and manager) behavior and to situational and organizational factors that affect the quality of knowledge communication.

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