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# **Communicating to See (and Keep) the Big Picture**

**A challenge in the interaction of managers and specialists**

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## **ABSTRACT**

This article focuses on the big-picture problem, i.e., the challenge of gaining and keeping an adequate overview of a complex issue in a management discussion, while paying sufficient attention to relevant details. Based on existing findings from organization studies and our own action research, we analyze why management teams often lose sight of the overall issue in a discussion, particularly in conversations with specialists, and how they can get back to focusing on the larger context. We address the drivers, dynamics and possible countermeasures of the big-picture problem by examining three typical real-life management meetings, as well as reviewing prior findings of systems-thinking approaches.

## **1. INTRODUCTION**

This article focuses on what we call the *big-picture problem* or the challenge of gaining and keeping an overview of a complex issue in management discussions, while paying sufficient attention to relevant details. We analyze why management teams often lose sight of the overall issue in a discussion, particularly in talks with specialists, and how they can get back to focusing on the larger context – the big picture.

Based on our action research in six international technology and financial services companies and interviews in two consulting companies, we believe that the big-picture problem has a major negative impact on the communication and decision processes in organizations. This is especially true for decision processes where specialists and managers collaborate and where their interaction is characterized by strong knowledge asymmetry (e.g., the specialist's domain knowledge versus management's context knowledge). Communication is crucial in such situations to gain a combined and broader perspective on an issue and to discover new options for action. This type of communication, however, is not always a seamless process, as specialists tend to focus on domain details, while managers are primarily concerned with open tasks, key problems, and strategic options. The resulting confusion does not only affect the decision quality of a team, but also leads to lower team morale, to a lack of commitment and to inadequate follow-up action (the knowing-doing gap, as Pfeffer and Sutton have called it).

The big-picture problem is relevant for most complex management areas in which managers rely on input from specialists, like, for example, strategy, research and development, project management, operations, information technology, or marketing. Fortunately, there are several relevant research streams within organization studies that can be used to better understand this particular communication (and ultimately decision) problem. We discuss these findings briefly in the next section, before we present our own findings.

## 2. EXISTING INSIGHTS INTO THE BIG-PICTURE PROBLEM

Why do discussions among managers and specialists (be it engineers, IT-experts, lawyers, or market researchers) frequently end up in a mess of details, leaving everybody wondering where the discussion has gone and how the different contributions relate to the issue in hand? In such cases, conversations do not contribute towards a shared understanding, but actually make it harder to understand the context of an issue. Communication has become dysfunctional. Our central question in this context is thus the following:

*How and when do managers and specialists lose sight of the overall issue in their interactions and how can they ensure that their conversations remain focused even when discussing complex topics?*

To answer this question, we can – in part - rely on prior findings from organization studies. Although the big-picture problem has not been discussed extensively in business literature (either academic or professional), there are a few prominent contributions that mention the issue. These contributions mostly stress cognitive processes when analyzing the problem and adopt a systems-thinking perspective to solve it. Below, we briefly review seminal research contributions on the topic from scholars such as Harkins, Senge, Rhodes, and Weick. Their findings help to frame the problem, before we turn to real-life examples of big-picture odysseys.

Following the systems-thinking approach, **Harkins** defines *big-picture thinking* as the “ability to conceptualize underlying or systemic causes driving a problem or issue. Big picture thinkers make *connections* between and among data and events in ways that reveal key issues or opportunities. They are able to interpret ambiguous circumstances or information and have an intuitive ability to clarify possibilities”. But, as Harkins notes, even big-picture thinkers can be bogged down in what he calls *conversational swamps*. These swamps of detail discussions are hard to get out of, once you have left the regular meeting agenda. Harkins’ main suggestion consequently focuses on preventing such conversational swamps by establishing and enforcing a clear meeting process that is divided into divergent and convergent phases. He summarizes this meeting approach in a sequence of key questions, namely ‘what’s up?’ (the topic of a meeting) ‘what’s so?’ (its details) ‘what’s possible?’ (the developed options) and ‘let’s go!’ (the decisions taken).

A similar view is taken by **Senge** in his notion of vision. He defines *vision* as a picture of the future that includes a deep understanding of the forces (principles and guiding practices) that will shape one’s direction. As one of the most widely read systems thinking advocates, he also mentions the ability to see larger systems and forces at play. While the focus of traditional analysis is on *separating* different pieces, the systems thinking approach advocates a holistic

perspective where the world is seen as a whole and the focus is on how the things studied *interrelate* and establish an overall system. Senge stresses the fact that “the process is more important than the product, as participants instil meaning and aspiration into the words and give them symbolic value; the words on their own mean nothing”.

Another label for the big-picture problem has been proposed by **Rhodes** with his notion of *adequate discussion levels*. Rhodes argues that “one of the most common reasons for being off the mark is operating *on the wrong level or scale*”. Rhodes implicitly describes the big-picture problem by relating it to *unnecessary details*: “There is often no need to go into immense detail in order to reach the right conclusion”. How much detail is needed in a conversation is not always a question of available time or of the importance of the issue, but rather of what is an appropriate degree of precision for effective knowledge transfer and decision making. One of the greatest difficulties in meetings among managers and specialists is thus to *determine the right level of detail* of their deliberation. In such cases it is important to be aware of the level of your decision making, e.g., whether you are making operational decisions that require many details, or strategic ones that need vision (in Senge’s sense of the word), perspective and context. Rhodes suggests that when setting a goal, “one should test it at both the level above and the level below by focusing on causes and effects. To have not even considered shifting levels means that decisions are made by default”. While Rhodes highlights this important characteristic of high quality discussions, he does not show why managers get lost in between such levels when interacting with domain specialists. One reason may be that they do not send or receive adequate conversational *cues* to signal this kind of level (of abstraction) changes. This important issue has been addressed by Karl Weick in the context of sense making.

The notion of *extracted cues* in **Weick**’s theory of sense making constitutes another valuable contribution to the understanding of the big-picture problem. People make sense of their situation based on cues which they extract from it. Extracted cues are familiar structures that individuals draw upon to “develop a larger sense of what may be occurring”. One of the seven properties of sense making (according to Weick) is that sense making is focused on and by extracted cues. Cues are linked to a broader context of ideas and actions which affect not only what is extracted as a cue, but also how that cue is interpreted. Extracting cues means focusing on subtleties and interdependencies. Cues are important in the “generation of a *point of reference*, against which a feeling of organization and direction can emerge”. Extracted *cues tie elements together* cognitively, and lead to a common *action*. An example of a cue in a management-specialist conversation would be that of stressing the ‘deadlines’ in a plan and thus signalling to everybody that the conversation is now in an action mode (that we call doalogues) and focusing on what to do next. Weick consequently raises the important issue of *flagging* the conversation in order to signal vital elements of the big picture to all participants. Weick, however, does not outline which terms can be used as cues, and when and how they should be applied in complex conversations.

These four aspects of the big-picture problem are already helpful in improving the quality of knowledge-intensive discussions among managers and specialists. Box 1 summarizes these four problematic behaviour patterns.

1. Articulating isolated assertions  
=> instead of explicitly connecting new statements to prior contributions.
2. Dissecting details  
=> instead of integrating them into larger entities.
3. Operating at the wrong level of abstraction or detail  
=> instead of shifting levels flexibly and explicitly.
4. Changing the course of the discussion without notice  
=> instead of using verbal cues as signposts for the conversation.

### **Box 1: Four Drivers of the Big-Picture Problem**

The four points listed in Box 1 neglect, however, some *social* elements (or group dynamics) that are crucial when a team loses its overview. This is why one should not only examine how people *think* to see the big picture, but also how they *interact to gain* and keep it.

To show the relevance of the big-picture problem for practitioners, we will provide three different business contexts (based on our case study research) where specialists and decision makers struggle to gain and keep the big picture. We will also outline the common characteristics of these problems. Then, we will provide a more analytical view of the problems and examine their root causes as well as possible ways of overcoming or preventing them in order to increase the quality of team communication and decision making.

## **3. EXAMPLES OF THE BIG-PICTURE PROBLEM**

In this section we provide three examples from our case study research in knowledge-intensive companies. They highlight various problems in the communication among managers and specialists, all of which lead to a missing big picture for the meeting participants.

### **Case # 1: A Conversation on Product Innovation Gone Astray**

A top management team gathers to discuss possible new product innovation strategies for the next four years. They have given themselves two hours to finally agree on the major directions of new product development.

In order to have a competent discussion, the managers have invited the head of R&D and three leading development engineers to join the discussion. To jump-start their product strategy meeting, they have asked one of the engineers to outline some of the hottest product trends in their business. Five minutes into this presentation, one of the managers interrupts to ask several probing questions in order to better understand the engineer's opinion on a specific technology trend. Specifically, the manager does not agree with the potential of a particular technology field that the engineer has just presented.

This causes the head of R&D to join the debate and to take the side of his engineer. Fifteen minutes later, the three of them are still debating the pros and cons of this particular technology. Now, the other two managers feel obliged to contribute their opinions on this particular technology. After another fifteen minutes, one of the engineers mentions the fact that this particular technology won't even be included in their final suggestion for the product strategy. Frustrated, the CEO asks for a coffee break and sighs: "I have no idea why we have just spent more than half an hour of our product strategy discussion on a basically irrelevant technology."

### **Case # 2: Drowning by Numbers in Risk Management**

The management of a major banking group has asked a consulting company to help in the implementation of a comprehensive risk management system that can assist the group in calculating the bank's overall credit-risk exposure.

When presenting the results of their initial status-quo analysis, one of the consultants presents an excel sheet on the overhead with the calculations that his team has made in the last four months. The sheet consists of more than sixty columns and about forty rows. The chief credit officer (CCO) of the bank stares at his print-out of the sheet without really understanding how this relates to the credit decisions his teams will have to face in the next months. Nevertheless, he asks the consultants to explain "the gist" of their calculations. The consultant begins to explain their risk evaluation methodology, and its underlying assumptions. He uses examples from the excel sheet. After thirty minutes of collective number crunching and commenting, the CCO still does not see the connection of the consultant's calculations with his decisions. This is aggravated by the fact that other consultants frequently intervene to make further comments on the presented numbers and their relationship to their methodology. Finally, the CCO of the bank stops the discussion: "I don't see where this is going. Why do I need to understand your credit-risk evaluation methodology, if it is just used for status-quo analysis and not for our daily operations?" We met today to obtain the result of your analysis and to discuss its implications on our business, and we have not even started on that yet. Honestly, I'm still confused about your methodology, but at least on a higher level."

### **Case #3: The Jargon Trap and the IT-Business Chasm**

Tom Bergman works as a project manager of IT workflow projects for a major financial services group. The current software development project aims at supporting a sales team in its administrative processes. In particular, Bergman has been assigned to the task of facilitating the collaboration and the joint workflows between the sales team and the marketing department.

To provide an effective IT support to the workflow, Bergman needs to define (together with the leader of the sales team) the main goal and all the sub-goals of this IT application. For this purpose, he also needs to define the various working steps of the sales team. The communication between Bergman and the leader of the marketing team is not an easy task. When they meet for the first time, it is difficult for the sales manager to state the objectives of the project clearly. He has the feeling that the collaboration between his team and the marketing team is not working well, and that an intelligent IT solution could help to improve the situation. In the light of this fact, Bergman starts to explain what type of IT solution he could provide, but after twenty minutes of his mostly technical explanations, the sales manager is no longer following. He is confused about the range of workflow tools and their functionalities. He does not understand how all this could help to solve his collaboration problem. Bergman, on the other hand, still

lacks the necessary information on the marketing team and its requirements for the new application. He has difficulties in explaining his solution in the context of sales, as he does not know sales that well. As their discussion unfolds, Bergman and the sales manager struggle to establish a shared common context, get side-trapped in marketing and IT jargon, and waste a lot of valuable time. They decide to call in somebody from the business technology office to do the ‘translating’ and help them mediate the marketing and the IT sides of the problem.

These three situations illustrate the common traits of the big-picture problem: It occurs when a team starts out with a *supposedly* shared and clear context (like the risk management system in case #2 or Bergman’s task in case #3). Then, the participants get side-tracked into minor points without noticing that they are going astray, and remain in the detailed discussion too long before clarifying higher order issues. This was the case in the discussion on one particular technology in case #1. Another common characteristic is that meeting participants fail to relate the details that are discussed to each other, and to the overall goal of the conversation, like the missing connection between the excel calculations and the risk-management system in case #2. In the end, all three situations result in frustration and confusion. Time is running out and motivation is lower than before.

We can consequently summarize these five common traits as well as their sequence (see Box 2):

1. A discussion starts with a supposedly shared and clear context (e.g., a goal, problem or issue at hand).
2. Participants get side-tracked into minor points without noticing that they go off track and without checking whether this is worthwhile.
3. They remain in the detail discussion for an inappropriate amount of time.
4. They fail to relate the details to each other and to the overall context.
5. They end the conversation in frustration, with less clarity and commitment than expected.

### **Box 2: The Typical Escalation of the Big Picture Problem**

Based on the review of the existing literature and the three typical business situations, we can define the big-picture problem as the **dysfunctional tendency of a group to neglect the global context of an issue by discussing relevant and irrelevant aspects at an inappropriate level of detail** which does not contribute to the team’s conversational progress or to the common understanding of its main issues. The inappropriate level of detail may be too detailed, i.e., *getting lost* in minor side-issues, or too broad, not *focusing* enough on the real (big) issue at hand. It includes the inability to *recognize* a counterproductive level of detail for an extended period of time, and manifests itself in the inability of meeting participants to relate their contributions to the team’s objectives or in statements of discontent with the progress of a conversation.

In the next paragraph we will outline what the root causes of this problem are, and how to address them.

#### 4. ROOT CAUSES AND COUNTERMEASURES

Before addressing and solving the root causes of the big-picture problem, one must be able to detect it. There are several tell-tale signs that a manager can use to recognize the problem. As mentioned before, the tendency to focus on irrelevant details is one of them. This is often triggered by disagreements. Unfruitful *loops* or unnecessary repetition are another symptom. Generally, conversations also go astray when people who like talking are allowed to go on and make unconnected and unrelated statements. Some of these statements or reactions to such ramblings may clearly signal the occurrence of a big- picture problem. The following statements can thus serve as warning signs:

- “Why are we having this conversation?”
- “I’m lost.”
- “What I also think is important is...”
- “I know that’s not your point, but we should also think about...”
- “How does that relate to what we just talked about before?”
- “I don’t know whether we’re on the right track.”
- “But that’s not the issue here!”
- “I want to go back to what Lucy said ten minutes ago.”
- “I have lost the overview.”
- “I think we should focus.”
- “Can we go back to base one?”
- “Can you relate that to our current situation?”

Having noticed that you have a big-picture problem, you must address its root causes. From the literature discussed in the introductory paragraph and from our research findings, we can draw up a list of possible root causes. Some of these causes address primarily *cognitive* processes crucial for big-picture thinking, such as interrelating and integrating data, and constructing meaning. Such causes are a lack of explicit connections and cues in a conversation, a dissecting mode of analysis or the inadequate level of abstraction, and as a result a high cognitive load on the participants. Other root causes address *social* and organizational aspects like group maturity or strenuous (negative) group relations that lead to in-fights on details, instead of the construction of a larger, collective sense. These and other cognitive and social causes of the big-picture problem are discussed below. Every root cause is followed by possible preventative measures.

One of the main root causes of the big picture problem is the lack of *explicit connections among contributions in a conversation*. As highlighted by Harkins, big-picture thinking resides in the ability of making connections among data and events to generate an overall understanding. Very often conversations are just series of unconnected statements that do not contribute to a global view. A possible countermeasure to address this issue would be that of making the connections of individual statements explicit, i.e., using connector terms or sentences. Such *connective statements* signal the (micro-) direction that a conversation is taking and make it easier to stay in the loop. Connecting statements may be phrases like the following: “I’d like to take what you have said one step further”, “I would like to give an example of what Roger has just said”, “I think that Lucy’s argument is similar to our initial discussion”, “Let me summarize your concerns”. In this way the big picture is never lost, because the nature of a contribution is instantly clear to all participants and they can decide whether it moves the conversation in the right direction or not.

The big-picture problem can also derive from a *fragmented, dissecting mode of analysis* as highlighted by Senge. Synthesis is required when creating strategic visions, the key of which would be integration rather than decomposition. While analysis deals with piece by piece reasoning, synthesis deals with relationships. A possible way to enable the participants to synthesize and integrate data would be that of providing tools and frameworks as a context. Such tools can be simple but proven conceptual (and graphically represented) *frameworks* that simplify, focus and clarify issues. An example of such a big-picture framework is Michael Porter’s five-forces framework for strategy discussions, or the Eisenhower-matrix for action-oriented conversations. Another way of synthesizing details into larger chunks of meaning is by using simple but rich and powerful metaphors that capture the complexity of an issue. Framing an issue like an iceberg shows which elements are easily visible, and which implicit aspects may involve great risks. Another strategy for focusing on relationships rather than on individual details is *mapping*. Graphic mapping or visualization can be used to make relationships visible for all participants (for example through feedback loops drawn on flip charts or overheads). This approach is often referred to as graphic facilitation.

As mentioned by Rhodes, an *inadequate level of abstraction* may be another root cause of losing the big picture in a conversation. A team may, for example, start to discuss details, before its common context is clear to all parties involved and details can be judged in the light of that context. One of the countermeasures against this sub-optimal levelling is to label the levels of discussion clearly, e.g., starting out with a macro-discussion, moving to a middle level discussion, and only then starting to discuss micro-issues. Knowing where we are in terms of abstraction level will help to maintain an adequate level of detail required by the task in hand. Such discussion levels can be made explicit by labelling them, for example geographically (e.g., local, regional, global level), by causal chains (e.g., root causes, causes, effects, and symptoms), or by hierarchy (e.g., group, business unit, product). In this way the *level labels* can become

important cues that guide the conversation in a top-down manner. The lack of such general cues given by participants or by the situation can be another root cause (as discussed by Weick). One possible countermeasure against this would be that of looking actively for cue words that can serve as reference points and pro-actively using cue words that indicate how what you say relates to the big picture.

Another cognitive root cause of the big-picture problem is simply *information overload*. In this case, the relationship between details and the overall perspective is lost because of the high cognitive load on the group, due to the complexity of the topic. Subsequently, the group can no longer see the wood for the trees. It no longer prioritizes information correctly, or loses track of items already discussed. To overcome these cognitive restrictions, one can use permanent information screens, such as smartboards, flipcharts or beamers that show the discussion trail of a conversation and its main elements.

As far as social or more communication-oriented causes are concerned, we can build on Weick's notion of cues and identify another root cause, namely that of *changing the (macro-) direction* or phase of a conversation without signalling it. Managers and specialists frequently start new conversation streams without their peers noticing their shift in focus. By providing regular and explicit cues, managers and specialists can fight this cause of the big picture problem. Examples of such cues have been mentioned earlier and include statements like:

- “Let me now move on to the possible solutions to this problem”.
- “Let's close the discussion of options and start rating them.”
- “We should now talk about the long-term implications of this.”

To the abovementioned root causes we can add another social one, that of *group maturity or longevity*: the longer a group has worked together in one constellation, the more the group members share common ground and common context. Consequently, the big picture is already more established than in newly formed groups. This root cause comprises two main factors: the lack of mutual or shared context, and differences of participants in terms of domain knowledge and professional background. The first problem can be reduced by conducting a stakeholder analysis together as a group and thus analyzing the group's environment (i.e., who has something at stake in the group's activities, and what are their goals?). The second problem can be somewhat reduced by introducing all members to each other, including a presentation of each member's credentials, responsibilities and previous experiences.

Stress or conflict can also contribute towards the big-picture problem of a group, whether it is an established or a newly-formed team. *Fraught group relations* can arise from different factors, such as outside pressure, mistrust, lack of consensus, or diverging interests and goals. One way to overcome these difficulties would be working on team cohesion, engaging team-building

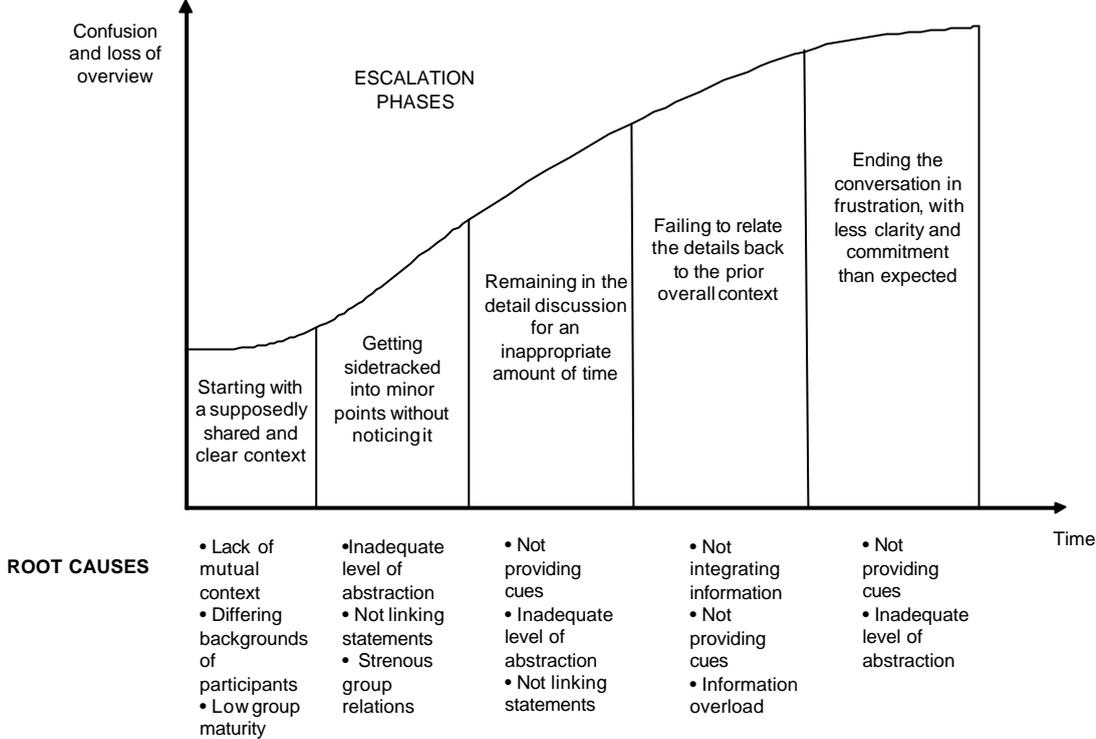
activities where team members are forced to trust one another, and by making group dynamics explicit and separate from the issue that is being discussed.

Box three summarizes these root causes and countermeasures briefly:

<i>Causes:</i>	<i>Countermeasure</i>
Not linking statements	=> provide linking terms, connective statements (“to add to what George said...”)
Not integrating information	=> use graphic frameworks or graphic facilitation
Inadequate level of abstraction	=> structure the communication process according to macro-level and micro level, label the levels explicitly
Information overload	=> Provide easy, permanent access to information in the meeting room (war-room-like posters, software)
Implicitly shifting focus	=> provide conversational cues that signal the overall direction of a conversation
Lack of mutual context	=> clarify the group’s situation through a stakeholder analysis
Differing backgrounds	=> present team members’ backgrounds to all participants
Fraught group relations	=> separate team issues from content issues; take time-outs

**Box 3: Root causes and countermeasures of the big-picture problem**

These root causes can be related to the escalating phases of the big-picture problem that were discussed in section 3. The chart below relates each phase to its most relevant causes. It can be used to locate the main drivers of the big-picture problem in each of its phases.



**Figure 1: The phases and root causes of the big-picture problem**

The three business situations presented in the previous paragraphs can illustrate countermeasures for avoiding or solving the big-picture problem. These means of improvement, however, need to be adapted to the specific organizational context of a company. Applying the previous insights, we will now go over the three cases again to show what the manager could have done to avoid or resolve the big-picture problem.

In example number one, the CEO could have stopped the criticism and given the engineer time to finish his presentation before the in-depth discussion of the one particular technology (to address Rhodes’ explicit level issue). Also, he could have made sure that the technology discussion had an impact on the product strategy, and that everybody was able to understand what was being discussed and why, as well where they were in the discussion (highlighting the connections between contributions). In example number two, Rhodes’ explicit level switches are addressed as the CCO could have stopped the consultant, asking him to concentrate on the results and on the implications for the project. To address the cause of lacking connections among the

contributors, the CCO could have tried to go back to the goal of the meeting, asking the consultant to relate the numbers to the project aim. In the same example, one could have clarified the participants' background first, and then agreed on an adequate level of detail. In the last example, Bergman could have invested more time at the very beginning to really understand the sales process. He should not have hurried into the programming and designing of the workflow until the overall objective was clear to him. This addresses several causes: that of the differences of the participants, as well as the lack of context and the adequate level of detail. In order to convey his context and make connections with the sales manager's contributions, he could have explained the general idea of a workflow and briefly outlined the solution of an already implemented workflow solution. To overcome the differences in terms of knowledge between the two, he could have asked specific questions regarding the current difficulties of the sales team. This could have been done with the entire sales team in the form of a brief workshop.

## **5. CONCLUSION**

The big-picture problem, or the challenge of gaining and keeping an overall perspective in conversations, is a crucial aspect in many business contexts, especially in communication between specialists and managers. In such discussions, the big-picture problem can have numerous negative effects, ranging from simply wasting time to reaching wrong conclusions and making sub-optimal decisions. By paying attention to statements that signal the existence of a big-picture problem, managers can quickly steer conversations back on track. They can proactively avoid the problem by making sure that contributions are explicitly connected, that the level of abstraction is indicated and fits the task at hand, and that conversational cues are frequently and explicitly given to trace the progress of a conversation. In addition, they need to make sure that the amount of information discussed is presented in a format that can still be processed (to avoid overload), and to ensure that discussions do not go astray because of negative group dynamics. In this way managers can become not only big-picture thinkers, but also big-picture communicators.

## References

Gratton, L. and Ghoshal, S. (2002) Improving the Quality of Conversations, *Organizational Dynamics*, 33 (3), 209-223.

Harkins, P. (1999) *Powerful conversations. How high-impact leaders communicate*, Mc-Graw-Hill, New York: NY.

Macoubrie, J. (2003) Logical Argument Structures in Decision-Making, *Argumentation* 17, 291-313.

Pfeffer, J., Sutton, R.I. (2000) *The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action*, Harvard Business School Press, Boston.

Rhodes, J. (1991) *Conceptual toolmaking. Expert systems of the mind*, Basil Blackwell, Cambridge, MA.

Senge, P. (1990) *The fifth discipline*, Doubleday, New York: NY.

Smircich, L. and Morgan, G. (1982) Leadership: The Management of meaning. *Journal of Applied Behavioral Science*, 18, 257-273.

Weick, K.E., (1995) *Sensemaking in Organizations*, Sage, London.