"START WITH A SMALL BALL OF SNOW" – MEANINGS AS TOOLS FOR PARTICIPATIVE INNOVATION

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ABSTRACT

This paper presents results from an action research study into a strategic change process in an organization, which aims to establish new innovation practices through introduction of a new digital idea processing system. For the research we have interviewed employees in order to gather different meanings that have emerged once the new system has come in touch with actual work practices. The results are related theoretically to science and technology studies. Based on the results we propose a participative co-design method for providing a platform for the negotiation of these meanings.

INTRODUCTION

In this paper we explore initial outcomes of an ongoing research project to an organizational initiative in a large global heavy machinery and service company aimed at widening their scope of innovation through the introduction of a digital idea collection and screening system and associated processes. Based on interviews with the staff, we have collected different meanings that emerge from the introduction of the system. Here we present our analysis of these meanings and how they can be utilized in a participatory organizational development process for bringing forth new practices. In reporting, we do not specifically focus on describing issues related to innovation management. Instead, we aim to illuminate aspects of organizational change and technology adoption that take place with the introduction of new tools that disrupt established ways of work.

The idea that a company's innovation activities need to extend to include employees not directly involved in R&D activities has been around for a long time. Recently, many companies have taken into use digital networked systems for gathering and processing ideas originating from various parts of the organization. Often these initiatives are inspired by research into open innovation (Chesborough 2003) or innovation method toolkits approach (e.g. Piller & Walcher 2006). When introducing new systems and processes that require new skills and attitudes to users, multiple interpretations of the meaning of this system will emerge, which in turn may lead towards contrasting uses of the system and disturbances in work practices. Forcing an interpretation on the users through organizational control mechanisms might lead to a failure, especially with a system which relies on collaboration and communication.

Building on the reification/participation duality introduced by Wenger (1998) and technology-as-practice orientation from Orlikowski (2000) we refer to the different meanings as means for negotiating the use of tech-

nology and organizational change. In order for any new system to be taken into active use, the contrasting meanings between management and users have to be negotiated before a shared understanding of the new practice can emerge. Furthermore, we describe as future directions a series of workshops in which this negotiation can take place through the means of a co-design process.

THEORETICAL BACKGROUND

Theoretically, this study is situated within the frames of science and technology studies, organizational studies and design research. For readers it is important to note that even though the activities in the organization under study are guided by recent developments in management theory and this paper mentions some of the approaches that have come out of these studies (such as open innovation), this paper does not situate itself within this theoretical frame nor do we as researchers utilize these methodologies when conducting innovation process facilitation. Instead, this study positions itself in the action research paradigm in which we as researchers conduct interventions into the organization work. The interventions focus on introducing conceptual tools for understanding the organizational shifts and assist in making the effects of these shifts in the organization visible and graspable.. Thus, we do not take a stance in the successes or failures of the organization in terms of renewing their innovation processes, but rather reflect on the effects of the introduction of new tools in terms of emerging meanings and practices. In this chapter we will outline earlier research affecting our study and define the key concepts used in this paper.

TECHNOLOGY AND MEANING-MAKING

Meaning making is a human means of making sense of life and its happenings. Meaning refers to an experience that enables the grasping of personal, social and material reality. According to Wenger (1998) meaning is negotiated in organizations through a dual process of reification and participation. In this model, reification refers to an act of giving form, concretization, objectification and creating "thing-

ness". The process of reification gives rise to artifacts such as forms, records, news, receipts, art works, guidelines, stories, systems and tools to give a few examples. Reifications need not be concrete or material but they can also be conceptual such as words, formulas, signals, gestures etc. Thus, reification does not merely produce objects but also immaterial assemblies of meanings that can be seen as reflections of practices, ways of doing things. The process of participation is by its very nature social, involving active connecting, making, discussing, sharing, thinking, feeling and belonging. As Wenger (1998) suggests, this is a process of duality rather than dichotomy of the constituent parts: reification and participation cannot be separated or even be perceived existing alone. Meaning is produced negotiatively by participants interacting with each other, surrounding objects and the environment These participants, and the meanings they produce and reify, together constitute a community of practice.

Using a community (of practice) as the unit of analysis for studying organizations has been not only justified but also criticized. Instead of focusing on the community, more attention should be paid on studying the practices (Orlikowski 2002) that are argued to "create epistemic differences among the communities within a firm" (Brown & Duguid 2001). Furthermore, Orlikowski (2000) introduces "a practice lens" for studying the role of technology in organizations, according to which the research should focus more on the ways people interact with technology in their daily work practices. Thus, the center of attention in this research is not so much the groups or communities but rather the ways people use tools and understand the technologies, find purpose or make meaning for their tools and how they put the meanings into practice in the everyday use of technologies.

Orlikowski (1992) emphasizes the dialectical nature of interaction between technology and organizations. Building on Gidden's classical theory of structuration, she proposes a structurational model of technology in organizations: there is a reciprocal interaction between the human actors, or

users and the technology used in the organization. Drawing on the socio-constructivist studies on interpretation and meaning-making on technology, Orlikowski proposes that technology development is a social and political process that produces structures (i.e. rules and resources, enacted in daily practices) that can be seen either embedded in technology, or emerge through the interaction with technology. Thus, the users can be seen either to appropriate the embodied structures or to enact the emergent structures through recurrent use of technology (Orlikowski 1992, 2000).

In the organizational context, technology is constructed continuously through a dual process. Technology is physically constructed by actors working in a given organization, and at the same time, technology is socially constructed through meaning formation and the use of technology. In addition, technology is interpretitively flexible, which means that different people assign different meanings to it. Furthermore, people can and do choose to use technology in different ways independent of how the technology was intended to be used by its designers. With time and through recurrent use, technology has a tendency to become reified and institutionalized. In this way technology loses its connections to the particular human actors that constructed it either physically or socially, and it starts to resemble an objective and structural part of the organization's everyday operation (Orlikowski 1992).

According to Orlikowski (1992) there are two modes of human interaction with technology: the design mode and use mode. The temporal and spatial distance between the design and use modes determines the degree of interpretitive flexibility of technology; the wider the distance the less flexibility there is. This means that if the users and use of the technology are kept close to the design, there is more flexibility in the use of that technology, and the design and use modes can benefit from each other through interaction (Orlikowski 1992).

Moreover, Orlikowski (2000) distinguishes between technology as an artifact and technology-in-practice. Technology as an artifact refers to a device

or software code, whereas technology-in-practice refers to how people use the technology in the organizational settings. For our research the notion of technology-in-practice is of particular interest, as it is in the social practices where the interpretations are made by the users and where the properties of the technology become constituted through shaping the users' actions. The users not only choose to use (or not to use) a technology but they also choose the way they use it. The users may choose to use the technology as it was designed, but they also may use it in surprising and unanticipated ways. The use of technology is affected by user's and also by other uses' or actors' interpretations of it. Thus, the use of technology is formed and structured through user's prior knowledge and experiences, meanings and interpretations, contextual factors, and the technological artifact they are using. (Orlikowski 2000) To sum up, when using the technology as a part of their practices, the users constitute the technology-in-practice, and the actions are shaped by the past uses, or enactments of the technology-in-practice. Thus, each enactment of the technology-in-practice reinforces itself, and gradually, becomes "taken for granted". In their recurrent practices the users shape the technology-in-practice that in turn shapes their use (Orlikowski 2000).

ORGANIZATIONAL CONTEXT

The setting of the study is in a globally operating North-European heavy manufacturing and service company and the focus of research is in its front-end of new product development. The company maintains several R&D units in various countries and each of these has their own organizational culture and historical development paths. Some of them are established by the company and some are incorporated through company mergers. These units are responsible for creating new technological, process and service innovations resulting in outputs such as new patents, products and product concepts or services. Since late 2009 the organization has adopted a new strategy for sharing and screening early ideas between these units. The initiative came from the realization that new product ideas are increasingly created in other

contexts than in that of a centralized R&D unit and therefore communication of and around ideas between the units should be strengthened.

The company has piloted a digital tool which allows its users to enter, comment, evaluate and screen ideas. An innovation process has been defined that guides the use of the tool in the work context and includes pre-defined system roles of users, champions and owners. *Users* can enter new ideas, comment on existing ones and evaluate ideas by giving them positive or negative votes. All the ideas are accessible to them via a web-based interface, and idea generation is encouraged with regularly published "idea challenges". These challenges are organization-wide campaigns that aim to encourage ideas concerning a specific predefined topic such as ecological building materials. All of the ideas and related comments and evaluations are then screened by *champions* for interesting ideas that could be further developed. Together with the *owners* they choose which ones are accepted to the next stage in the process. Currently the tool is used by some 800 users and the user base is gradually being increased to also include members from outside the R&D function.

The management expects that through this new innovation process they are able to generate a wealth of ideas that can be shared among their R&D staff. Of these ideas, the best are filtered for further development and those that are seen has having less potential or that are being introduced at the wrong time are archived for later use. The central metaphor that emerges from interviews with the management of the process is that of a linear "assembly line", in which ideas are seen as a special type of products that go through various steps and are assembled into innovations. This way of seeing innovation puts emphasis on ideas, but assumes little interaction between the participants. In a similar vein, employees are seen as handling the advancement of ideas, refining good ideas, weeding out the less successful and implementing the best. In reality, the practice of innovating is much messier. It includes non-linear processes such as iteration and requires rich interaction between the participants. In our research, we

have recognized various differing and sometimes conflicting meanings and interpretations of the system stemming from employees residing in different parts of the organization. This process of negotiating meanings can be placed within Wenger's (1998) framework of participation/reification duality and Orlikowski's (1992) view of technology as practice.

DATA COLLECTION AND RESEARCH METHODS

Constructing new innovation practices in organizations can be viewed as a wicked problem (Rittel & Webber 1973) for which there are no clear-cut problem formulations or definite solutions . Our role as action researchers is, in addition to collecting empirical data, to facilitate the company in the process of establishing the innovation tool and new practices alongside with existing innovation practices. To achieve this, we have iteratively created a process model which describes the current view of management on how the system should work. In addition, we have carried out group and individual interviews with employees from different units and operating regions in which we have focused on practices and meanings that they give to the tool and the innovation process. The data from the individual interviews forms the core of this research paper. In each interview there was an interviewer, interviewee and a note-keeper, and the interviews were recorded in audio and text format. Later on the interview data was transcribed into text from audio. We have also organized a process simulation workshop based on the SimLab business process simulation method with the aim of discussing how ideas are created and processed in the organization using a dedicated web tool.

The interactive and participative SimLab process simulation method (Smeds 1997, Smeds & Alvesalo 2003) contains elements from case study (Eisenhardt 1989, Yin 2003), action research (Stringer 1999), and constructive research (Lukka et al 1993) approaches. The process simulation method is used both for collecting empirical data for research and for facilitating the case organization in its development process. A simulation project, typically lasting 3-4 months, begins with a kick-

off with the participating organization, where the goals are negotiated and set. Then, initial process modeling follows, in collaboration with researchers and representatives from the partner organization. After the process modeling, thematic interviews are planned and carried out. These can be both individual and group interviews, as was the case in this research. The interviews are essential for collecting data from the various stakeholders in order to prepare the actual simulation day, which is typically a one-day workshop with a facilitated walk-through of the process with the help of a visualized process model, facilitated discussions related to the process, and group work that aims at collaborative knowledge creation. The simulations are at the same time collaborative knowledge sharing and creation and process development workshops for the partner organization, and a data collection opportunity for the researchers. In the simulation we combined the business process simulation method with techniques commonly used in the field of user-centered design, such as personas and use-scenarios. By incorporating design methods we aimed at stimulating empathic understanding of the process (Salmi, Kronqvist & Pöyry-Lassila 2010).

At the time of writing we are conducting a series of workshops in which the participants are co-creating a vision of new work practices focused around the use of the new tool. These are described in the fifth chapter. In our action research approach we intend to utilize the different interpretations of technology as premises for developmental change instead of problems hindering tool adoption. We believe that this approach is critical, considering that the aim of the research is studying systems for supporting complex innovation practices instead of simple routine tasks.

EMERGING MEANINGS

Various interpretations for the idea tool emerged from the data collected in the interviews and the process simulation. Regardless of the efforts of the organization management to construct a single innovation process, the innovation tool gives rise to different meanings in its different users. Given its inherent complexity, it would be foolish to expect a clear cut meaning for a complex social system such as an innovation process in a large organization. People have different ways of being creative, that are highly context-dependent. Even though these processes can be very similar, differences emerge even with people working closely together. While some prefer creating ideas while traveling, some might schedule a specific time for ideation. Some are at their brightest when brainstorming with their team and some choose to work alone and emerge with a detailed plan for the innovation. Others might have a specified technology to focus development work on while others look for new concepts based on emerging user needs. Some choose to operate in their familiar field and delve into highly specified topics while others courageously experiment in unfamiliar territory thinking about themes that are rather foreign to them. Given the multiple meanings for innovation, it then is no surprise that an innovation-support tool is put to use with various different expectations.

In the process of creating the personas and scenarios for the simulation, special attention was paid to incorporating these different ways of comprehending and using the system. This was done in order to enable the participants to become aware of the various perceptions and to elicit further discussion for sharing and expanding views. When analyzing the material we noted that most of the meanings that people assigned to the system supported each other and built a somewhat integrated image of the tool but some were also in clear conflict with each other. We also observed that similarities in the meanings assist the building of communities of practice around the tool, but contrasting ones slow the adoption process.

VALUABLE IDEAS

"You know, when I have a good idea, or if somebody has a good idea, they always think about protecting that idea to the point where they can patent it, and, just because at the beginning you put it out there, you know, half-baked, and a lot of people comment on it, now all of a sudden you may have a patent, and may have 50 different people claiming responsibility for it." - male, user role.

It became clear from some interviews that ideas can be viewed as a valuable commodity that one comes rarely by. Following this view, early front-end innovation becomes activity that aims as pruning and protecting the idea until it is ready to be presented to others. If one releases the idea too soon, it becomes exposed to dangers such as loss of ownership, damages to professional identity or leaks to competitors. In a way, this view assumes that an idea only has value if it is protected and carefully constructed and only shared once it has been developed enough.

The roots of this meaning for ideas can be seen as stemming from the patenting processes of new technological innovations, which already are strongly reified within the organization. The firm has established processes and dedicated departments for evaluating ideas for possible patents. In addition, the company has historically tied these processes together with incentives such as monetary rewards for awarded patents. Together these systems support the meaning of "rare and valuable ideas" that on the other hand can also cause significant damage to the employee and the company.

This meaning is to a great extent in conflict with the underlying assumptions of the new innovation tool, in which ideas are only seen valuable once shared with other users for comments and evaluations. The tool represents a view in which a certain quantity of ideas is required before quality can emerge. New value can be found in ideas through exposing them to different users with different backgrounds. If they are kept hidden until one is certain of some of their value, all these varying viewpoints are lost. Also importantly, how can one be sure that no-one else is secretly developing exactly the same idea?

IDEA WAREHOUSE AND
PROBLEM BANK

"I think that the tool is really great, because it means that now at least I can let go of the idea." - female, user role.

Many users thought of the tool as a memory extension, which is used to write down ideas, problems or user needs that one has found at work. Some viewed it as a place for all those ideas that one could not implement in one's own work, but that could still

have value in some other context. On the other hand, some others saw value in it for storing ideas that one should come back to. Some users extended the meaning of an idea to include technical problems and user needs that they have found in the field.

In a way, many of these views are in opposition to the valuable ideas meaning in a sense that the users felt that they get too many ideas to keep in their heads at the same time. These meanings exemplify a view of the tool as a static database and a process in which work is "thrown over the fence" for the next person to process. Some of the interviewees pointed out that they haven't really been using the system for communicating or collaborating with other users. The conflicts between the database view and assumptions of collaboration become apparent when interviewing owners that express their frustration at the system being a "wishing well" in which users throw half-baked ideas or problems that need solving.

Through these interviews one builds a view of the system as a place in which ideas are dumped and where no-one ever goes to see them. One interviewee, a user, female, noted: "*Is there anyone who would go and look at [ideas]? In a way they are left lying there like in a graveyard.*" This interpretation is also linked to the experience of lack of feedback. Many interviewees brought up that they had entered an idea to the system but even after six months they had not received a response either from another user or a champion. This caused them to feel frustrated and doubtful about the usefulness of the system for ideation. Based on the data it seems that for many bringing own ideas out and under discussion is a demanding personal investment and if the ideas do not elicit a response from others it feels hurtful.

How could the conflict between the database and collaborative meanings be solved? Many interviewees expressed that they are motivated by problems that need to be solved. In addition to ideas, could the system have a category for problems or needs that one can use as an inspiration for innovative products or services?

IDEAS AS WORKLOAD

In the interviews it became apparent that for the champions new ideas entered into the system mean additional workload. The current structuring and division of work proposed by the system clearly puts strain on champions since they are the ones that screen the ideas and present them to the owner for decision making. Together with the owner they resolve whether to reject or further the idea. For the champion reading through and commenting the ideas in a constructive way takes time and energy. As one of the interviewed champion, female noted: "*At the back of my mind I have 34 ideas that I'll just start roughly going through.*" The words that the champions used for describing what the system means for them included 'burden' and 'load'. These meanings carried with them a sense of guilt for the ideas that were not yet processed. For some champions the processing of ideas happens in addition to other work, while for others there was time put aside for this activity. The present role description of the champion leaves little room for supporting the user who created the idea in elaborating, redefining, connecting to other similar ideas or in contacting knowledgeable subject matter experts. Even now as the user base covers approximately 800 employees, it is hard for the champions and owners to keep up with pace of ideas entered into the system. As the user base of the system grows it will eventually become impossible for the champions to go through every idea entered.

COLLABORATION IN THE WILD

"*Virtual teamwork and team sports are always better than solitary work in these environments. It's because the more comments and viewpoints you can gather for ideas the better the end result becomes.*" - male, owner.

Many users expressed hopes for increasing collaboration within the system through active commenting. Comments were seen as contributing positive encouragement for the idea creator or constructive feedback that builds ideas forward. Interviewees who shared this meaning also shared the belief that the best ideas are created through collaboration of experts. What differed somewhat is the extent to how much and at what point this collaboration should take place in the open. Some viewed that ideas should

be entered in the system regardless of their stage of development. In this way they would be exposed for comments and collaboration from the start on. Others mentioned the need for closed work spaces for a groups of experts in which ideas could receive feedback from trusted colleagues before publishing it in the open. One interviewee stated that this is an existing practice in the organization. There is a strong tradition of working in teams and innovating in small groups. An owner, male describes "Here we have people working together in a certain project. They can toss around ideas with each other because they have an internally formed network. It can be bad in a sense that no influences come from outside." One interviewee, male, user, compared innovation activities to building a snowball: "*Start with a small ball of snow, and as they roll it, it becomes bigger and bigger.*"

The need for closed working spaces also connects with the wish of some interviewees to have the possibility to present themselves as anonymous in the system. This is true especially when evaluating others' ideas using the up/down arrow functionality, that loosely corresponds to "thumbing" in other collaborative and social media applications. Many said they only use the positive arrow-up feature of the system to avoid hurting the feelings of the idea creator.

This view presents a more dynamic view of innovation activities. It recognizes ideas as something that can and should be developed in collaboration and that are not dependent on the original intentions of their inventors. Through collaboration ideas can change and combine with others to create entirely new meanings. Participants are motivated through responses from other users and they give out encouraging comments for other users as well. However, many interviewees expressed frustration at the static state of collaboration in the system or non-constructive communication either in the form of evaluations or critical comments to ideas. On the other hand, the wish for anonymity highlights the difficulty of giving or receiving negative feedback. In addition to features that aim at constructing ideas, the system should more clearly encourage emo-

tional communication such as statements of support and encouragement or constructive feedback.

CONNECTIONS AND PROFESSIONAL IDENTITY

In the interviews we found a case in which one user had connected with another user working in another location through the system. The users had been tossing ideas in the system around a common topic for some time and when the other user had visited the other's country, albeit in errands unrelated to the actual idea, they had arranged to meet. The interviewee said that without the system it would have been improbable that they would have met or even known about each other. The system seems to have potential for connecting people working in geographically distant units of the company and bringing together the skill and expertise of these people. This possibility was brought to the fore by many interviewees. The fact that the system can be used to connect with employees from different units was seen as positive, even if still challenging.

Some interviewees found that the system enables connecting with people that have similar interests and that work on tasks alike. A user, female stated: *"I discovered that you can actually find people that have an interest similar to what I'm doing. I think that I will actually look much more in detail [into that]."* She found it motivating to notice other like-minded people using the system. Clearly, the system has the potential for fostering the building of a professional identity, in communicating one's expertise to other users and through these creating an arena for meaningful professional collaboration. The tool expands in meaning from a mere collaborative work space into a forum in which social contacts can be made and in which identity as an expert in a certain field can be built.

ACCESS AND OWNERSHIP

Even though in this research we were particularly interested in those people's perceptions that were actual users of the system we acknowledge that the ones that did not yet have access to it were also affected by the system's presence. In the data we saw that the gradual introduction of the system raised thoughts of exclusion and inclusion in some interviewees. The ones that

were interviewed were all included in the user base but they brought up that the phase-by-phase introduction of the tool has given rise to practices that allow access for selected few. One interviewee acknowledged that some people working close to the customer do not have admission to the tool, or that they do not necessarily have access to a computer. Another interviewee told about a practice that had evolved around a challenge. In this case a project manager who was also a champion collected ideas outside the system through e-mails, workshops and in the office corridors and eventually entered the ideas in the tool on behalf of the employees who did not have access to the tool. Introducing a technology in an organization brings about a process of meaning negotiation and emergence of new practices and this process may evidently also touch on non-users.

These differences in job descriptions and conditions brings to light a critical challenge for organizing participatory innovation. If ideas are to be generated in and collected through an ICT system a possibility for using a computer connected to the Internet should be organized. Also providing these people with the necessary technical and communication skills should be taken into account. These issues are not trivial from the point of view of innovation since many interviewees thought that the employees that have the closest connection to the needs of the customer are a valuable resource for new product and service ideas. Keeping this in mind it is not only the R&D department of the organization that should be viewed as capable of innovation.

FUTURE DIRECTIONS

The multiplicity of interpretations opens up an interesting arena for research into emerging practices forming around an innovation tool introduced in an organizational context. The meanings described in the chapter above represent a part of the findings from our study. While it cannot be stated that they are fully representative, they constitute a picture of the current situation the organization finds itself in. As they exist currently, the tool and innovation process do not take most of these emerging meanings into account which significantly harms

the efforts for developing new innovation practices. What is taking place is a renegotiation between the meanings originally reified by the management and the meanings emerging from the contact of the new tool with existing innovation practices.

The first simulation project aimed at creating an understanding of the as-is situation of the front-end innovation process. In the current research phase the purpose is to grasp the future in the form of a to-be situation. At the time of writing, as part of an action research-oriented approach, we are organizing a series of three *tangible innovation workshops.* While the SimLab method centered on modeling existing processes, the aim of these workshops is to bring the identified meanings under discussion and elaboration. We intend to support the reification/participation process by providing a facilitated co-design setting in which the participants reflect on their innovation practices and construct various artifacts embedded with meanings, values and practices. The designed artifacts include personas, process models and interface concepts for new tools or features. We assume that through these activities the participants can explore possible futures for their innovation activities which are based on their own input. Furthermore, through participating in the workshops the management is able to create a more thorough understanding on which future decisions can be based. Although the workshops are still ongoing, the initial feedback is very positive and the participants seem motivated and committed to the solutions. We will report the results of these workshops in later research papers.

Possible future research directions can be the study of actual work practices: collaborative workshop settings, use of digital communication tools and other activities that can be observed in context. By conducting these studies, it becomes possible to describe how current meanings actualize in practices. Another research direction could be the study of social groups and communities of practice that share meanings and practices. These research results could contribute towards the design of better tools that take in regard different understandings of innovation and

allow for it to be connected to various practices found at the work place.

CONCLUSION

In this paper we have described results from a research project into an organizational change project. We have identified several meanings that participants have given to the innovation tool and process. The world of meanings in our data is intricate in its composition. We observe a complexity of quality, quantity and direction. It seems that certain meanings are more reified than others. But we also see that there are opposite interpretations. There is potential that the opposite meanings may create disruptions if they are not taken into account in the design of the tool and planning of the innovation process, and even more so if they are seen as false interpretations. If the polarities are not recognized and collaboratively negotiated the tool may become marginalized in the daily working practices. It could cause a gradual fading out and eventual abandonment of the tool. The way the system is currently constructed and which practices it currently supports is in conflict with the meanings that have emerged from actual work practice. This discrepancy between the rigid system that is guided by a strongly reified linear innovation process and the different innovation practices of the employees is reflected in the critical views of many users of the system, whether it is the burden experienced by the champions or lack of constructive feedback of the users. Here, we identify connections to the notion of interpretative flexibility (c.f. Orlikowski 1992) as the distance between the design and the use of technology seemed to have an effect on the way the tool was experienced. In this case management implemented a tool that was a commercial off-the-shelf product purchased from outside, and even if the tool was modified somewhat to meet the needs of the organization, it was received with reservation and taken into use somewhat hesitantly. This would indicate that the interpretative flexibility of the technology was affected negatively by the distance between the design and actual use of the tool; in other words, the technology allowed only for certain kinds of enactment or appropriation of the technology-in-use (c.f. Orlikowski 2000). Furthermore, the identified discrepancies between the technology-in-use and the idea creation practices of the users could explain the inconsistent meanings attached to the tool. Knowing what the meanings are that employees base their activities on should assist the redesign and reification of the tool and its related work processes.

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REFERENCING

Brown, J.S. & Duguid, P. (2001) Knowledge and Organization: A Social-Practice Perspective. Organization Science, Vol. 12, No. 2 Marc-April 2001, pp. 198-213.

Chesbrough, H.W. (2003). Open Innovation: The new imperative for creating and profiting from technology. Boston: Harvard Business School Press

Eisenhardt, K.M. (1989) Building Theories from Case Study Research. The Academy of Management Review, Vol. 14, No. 4, pp. 532-550.

Lukka, K., Kasanen, E. & Siitonen, A. (1993) The Constructive Approach in Management Accounting Research. Journal of Management Accounting Research, 1993:5, Fall, pp. 241-264.

Orlikowski, W.J. (1992) The Duality of Technology: Rethinking the Concept of Technology in Organizations. Organization Science, vol. 3, No 3, August 1992, pp. 398-427.

Orlikowski, W.J. (2000) Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations. Organization Science, Vol. 11, No. 4, July-August 2000, pp. 404-428.

Orlikowski, W.J. (2002) Knowing in Practice: Enacting a Collective Capability in Distributed Organizing. Organization Science, Vol. 13, No. 3, May-June 2002, pp. 249-273.

Piller, F.T. & Walcher, D. (2006) Toolkits for idea competitions: A novel method to integrate users in new product development. R&D Management, Vol. 36, No. 3: pp. 307-318

Rittel, H. & Webber, M. (1973) Dilemmas in a General Theory of Planning. Policy Sciences, Vol. 4, pp. 155–169. Elsevier Scientific Publishing Company, Inc. Amsterdam.

Salmi A., Kronqvist, J., Pöyry-Lassila, P. (2010) Supporting Empathy in Business Process Simulations with Scenarios. Proceedings of Academic MindTrek Conference, 6th-8th October. Tampere, Finland.

Smeds, R., (1997) Organizational Learning and Innovation through Tailored Simulation Games: Two Process Reengineering Case Studies. Knowledge and Process Management, Vol. 4, No. 1, pp. 22–33.

Smeds, R. and Alvesalo, J. (2003) Global business process development in a virtual community of practice. Production Planning and Control. Vol. 14 No. 4, pp. 361-371

Stringer, E.T. (1999) Action research : a handbook for practitioners. Thousand Oaks (CA): Sage.

Wenger, E. (1998) Communities of practice, Learning, Meaning and Identity. Cambridge University Press. USA: NY

Yin, R.K. (2003) Case study research : design and methods. Thousand Oaks (CA): Sage.