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DESIGN GAMES AS A PART OF SOCIAL PRACTICE DESIGN: A CASE OF EMPLOYEES ELABORATING ON ORGANIZATIONAL PROBLEMS

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Abstract

This paper describes the experiences of practicing ‘social practice design’ with two user groups in a small company producing virtual electronic components. Based on an ethnographic study of ongoing production work and meetings in this company we identified several core problems which were expressed in terms of ‘how can we overcome this problem’ questions, among them: ‘How to acquire a business management culture’ and ‘How to change from being sophisticated contractors to a profitable brand’. These questions were addressed by the two user groups in the form of two design games – the organizational game kit and the creative product design game. The paper describes how these design games facilitated vision creation, enabling participants to act as change agents. The design games helped them voice their concern and get a common understanding. The physical objects that served as game elements supported their engagement. Image cards and organization building blocks served as thinking tools – we could observe participants selecting, picking up, moving, labelling these elements, thereby enacting ideas whilst talking. The playful and fun aspect of a game activated participants to engage, explore options, and enter the realm of the imaginary. They helped establish a situation of trust and confidentiality.

Keywords: design games, participatory design, organizational change, modelling

1 INTRODUCTION

As described elsewhere (Jacucci 2007), social practice design (SPD) seeks to ensure that the potential benefits of envisioned novel technologies can be realised. It is well known that social practices cannot be ‘engineered’ (see e.g., Ciborra 2002; Bodker et al. 2004; Wulf & Rohde 1995) but that they are evolving as part of people’s activities of integrating a new technology into their ways of doing. This is a process that requires a transformation of organisational and work practices and sometimes even of the formal framework in which they are embedded. We consider SPD a methodological extension of Participatory Design (PD) to the implementation phase of information systems (see also Jacucci 2007; Cattani and Jacucci 2007). It pays attention to the concept-based and participative introduction of new things to do or of new ways of doing things.

This paper describes the experiences of practicing parts of SPD in a small company. More precisely, this paper provides an example of use of design games to support social practice design. It focuses on providing tools to members of an organization to build a better understanding of the organization and to identify problems and potentials solutions that could lead to a change in the organizational practices. It describes the experience of using two of such games with two user groups at VCP, a small producer of virtual electronic components, with two branches (VCP1 and VCP2) located in different cities. We show some of the feedback obtained in the process and reflect around the value of games to inform the design of practices.

This experiment took place within the context of EU project MAPPER (Model-based Adaptive Product and Process Engineering) (IST-016527). Its focus is on the development of tools that allow users to model their own organization or work processes. Being committed to participatory design we visited VCP, one of the user companies within the project, altogether three times. The first time, which

was dedicated to ethnographic work (observations and interviews), we mainly observed ongoing production work but we also participated in several face-to-face and distributed meetings. Engineers at VCP work in co-located project teams – four to five in one room – and they cooperate with a series of external distributed partners. They are engaged in four different types of activity – they provide design services to other companies, they produce different types of virtual components, and they provide pre-sales and post-sales support for their customers. We found a strong engineering culture at VCP, with engineers' coordination, communication and interaction, internally and with distributed sites, being extremely effective. One of the main problems we identified was the lack of a business management culture, which may be explained by the fact that their core activity – virtual components – is almost completely controlled by an US-based distributor. Again and again we came across the question of how VCP may build their own identity on the international market (Jacucci, Tellioglu, Wagner 2006). While our second visit to the company was dedicated to cooperative prototyping, we returned a third time to work with users on the task to identify problems and constraints in their organization and in rethinking it. They also were invited to invent a profitable 'niche product' for their company.

This paper provides an account of this event from the point of view of social practice design. It first describes our approach, including the design games we had prepared for facilitating users' work, analyzes our observations and arrives at a set of conclusions concerning the use of design games as part of SPD.

2 DESIGN GAMES AS PART OF SOCIAL PRACTICE DESIGN (SPD)

The Participatory Design (PD) approach consists of a conceptual framework and a diversity of methods in support of participation in design (Bodker et al. 2004). The methods are grounded in intense participation with users and they combine the use of ethnographic techniques with creative design and intervention. PD research has over the last 20 years developed activities in support of a stepwise decision-making process in the overall design process. What practitioners of PD have less focused on is the implementation phase of IT, when users have to integrate the technology in their work, in many cases changing work practices (focus on implementation can be found in the MUST approach (Bodker et al. 2004), and in the OTD approach (Wulf & Rohde 1995). They also, with some exceptions, have not looked systematically into the organizational environment probing together with users how to support the potential of IT through organizational measures.

Ciborra (2002) strongly argued in favour of an organizational view onto IT implementation and stated that the unveiling of real world organisational forms requires a different analytical approach from the one especially common in industrial organisation research: "The gap between what theoretical, *ex post* explanations and models can deliver and the actual garbage-can style of managerial choice is considered to be a fact of life by practitioners, and an unavoidable result of the limitations of any modelling approach by scholars" (p. 174). Weick and Quinn (1999) speak of 'episodic change' as being contemplated, when adaptation, e.g. to IT implementation, begins to lag. Episodic change tends to be dramatic change, as Lewin made clear: "To break open the shell of complacency and self-righteousness it is sometimes necessary to bring about deliberately an emotional stir-up" (Lewin 1951, quoted in Marshak 1993:400). With reference to Prochaska et al (1992) who distinguish four patterns of change - precontemplation, contemplation, action, and maintenance - Weick and Quinn stress that the episodic change process is not linear but rather follows a spiral pattern. They also contend that organizational change requires changing the meaning system – to speak differently, communicate alternative schemata, build coordination and commitment.

The notion of social practice design springs from reflections such as these. SPD makes room, in the implementation phase of PD, for the design of social practice and for the social design of practice in the organisation, in general to 'make place' for IT (Ehn et al. 2007). SPD is a form of intervention research or action research. It recognises the epistemological postulate that we can learn about the real world only by trying to change it (Lewin, 1946). When implementing IT within an organization often concerns beyond making the technology work come to the fore, such as the necessity of interventions to solve organisational problems. These interventions and the solutions they support may or may not entail the implementation of IT, or they may, but not as a central ingredient. In fact, SPD can be rooted

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in visions of technology as 'inscription' (Latour 1992), so that reflexivity on this issue is the key to good implementation of social practice. We advocate making place for IT by designing social practice to achieve sustainable design of people computers and work. It is a necessary analysis and design activity in designing sustainable IT usage.

How does SPD proceed? Here again we recur to Ciborra, who wrote: "I suggest that the information systems field, with its rational views of knowledge, decision making, strategy, and orderly systems development, is based on a narrow model of rational, ideal actors. In this book, by focusing on the mundane and the existential, I want to contribute to a transition of the field towards ...passion and improvisation; moods and bricolage; emotions and workaday chores; existence and procedures will become integral to systems design and use, casting new shadows and lights on the unfolding world of technology (in its deployment and management in organisations and society)" (2002, p. 9) This echoes a trend in theories of organizational change that emphasizes improvisation, as a characteristics of successful firms that "had well-defined managerial responsibilities and clear project priorities while also allowing the design processes to be highly flexible, improvisational, and continuously changing" (Weick and Quinn 1999, p. 371). Orlikowski (1996), in her study of changes in an incident tracking system, found repeated improvisation in work practices that then led to restructuring. Moorman and Miner (1998) argue that "the more improvisational an act, the narrower the time gap between composing and performing, designing and producing, or planning and implementing".

SPD reflects this vision, advocating for a design oriented approach, with researchers preparing the grounds through ethnographic work, defining key issues around which to organize change processes around IT implementation, and participants analyzing, co-constructing, and performing, and this more in an improvisational than a 'rational' mode. It can roughly be described as proceeding in a series of steps:

- Interviews opening the process of interaction with users to understand their *declared objectives*
- Ethnographic *field study*, analysis of the data in terms of ethnography based concept development *expression* of resulting problem areas in terms of '*how can we overcome this problem*' questions
- Invocation of appropriate *social science theories* – action research, CSCW, theories of organizational change, group dynamics, ANT, PD and the host of literature on creative design (e.g. Gaver et al. 2002), identification of appropriate *principles* to leverage for the 'how' questions above
- Conception of a *vision* for the solution of the problem at hand – including instructions to people, additional work processes and supporting technologies – to be captured by *training modules* and *technology mock-ups*
- Elaboration of strategies, by *mixing* visions with results of interviews, for designing further meeting sessions with the people concerned - workshops for co-construction of the social practices solution of the problems identified, as well as *training sessions* for the managers that will plan for and moderate change.

As already mentioned, in our first field visit to VCP we had carried out an ethnographic study of work practices, including interviews with key persons in the company. Based on this material we developed a set of 'How questions', which translate the major observations in the field into questions requiring action. They reflect some of the central findings and they were selected because of their change potential for the company. Each of these 'How questions' was detailed, based on the findings of our previous field study on the one hand, on concepts taken from different social science theories on the other hand. Instead of addressing these questions directly, we, in the spirit of PD and creative design, designed a set of design games. Eva Brandt (2006) among others argues that exploratory design games are a valuable framework for organising participation: „Participants in exploratory design games often have different interests and preferences but instead of utilizing this by competing the aim is to take advantage of the various skills and expertise's represented and jointly explore various design possibilities within a game setting“. In our context, we use design games to facilitate productive and imaginative responses to 'How questions'.

3 THE SCENARIO

Our main mission for the VCP workshop we had to make employees experience that they can develop into change agents in their company. This perspective clearly contrasted with the view of top management that experts from outside should be hired to solve the company's problems. We had aimed at two different groups: the first group was formed of the four product line managers, including the head of development at the VCP1 branch of the company; the second group consisted of the new head of marketing, the marketing specialist, and two designers. For the workshop we had chosen three of the 'How questions': *How to change from being sophisticated contractors to a profitable brand? How to acquire a business management culture (and construct a community of practice (Lave & Wenger 1991))? How to transfer knowledge and design to the market by translating technical descriptions into marketing-oriented documents with which to present our products and services to customers?*

3.1 The Organizational Game Kit

The Kit consists of building blocks of different colours and shapes, figurines, stickers, and pencils.



Figure 1: Organizational Game Kit

The Kit game was used for addressing the first 'How question' about how to acquire a business management culture in the company. The instructions to participants were to first use these building blocks for creating a shared representation of the company as they see it now: „Use these building blocks to represent your organisation in a creative way. You have little people for that. You can give them names. You have places. These places can be in this building or somewhere else. The round objects stand for artefacts, machines, documents, whatever” (IW). The second step was to represent constraints in the organization. Participants were given small image cards symbolizing a wide range of possible issues. As a final step, users were asked to think about what they would like to change and to 'act out' these changes with the building blocks of the Kit.

3.2 The Creative Product Design Game

This game was used for addressing the second and third 'How question' of how to change from being sophisticated contractors to a profitable brand and how to translate technical descriptions of VCP's products and services into marketing-oriented documents. Here the idea was to creatively use a 'How question', which allows for many different interpretations in ways that would lead to an open and creative dialogue about these questions. The dice, on whose sides the various sub-questions were written, was used for the case that participants could not decide themselves what question to address first and to avoid a particular sequence of sub-questions.



Figure 2: Dice and image cards

This element of chance focuses on how to get out of habits and experience new aspects. For this game another set of image cards had been prepared, with images that may act as a source of inspiration, evoke novel, creative, and surprising ideas. While some of these images referred to technical devices and symbols, others were taken from the arts. Instructions were to throw the dice, take up the question on top, and to select images that may help find creative answers to the question, with participants sharing their associations and ideas, and finally selecting a common representation of the 'profitable brand'.

On the first day both groups used the Organizational Game Kit for a critical discussion of their organization and for envisioning change. On the second day, which was opened with feedback from the research team for each group, they addressed the question of how to create a profitable brand. The workshop concluded with feedback from all participants concerning the method. As participants' command of English is limited, we offered them the possibility of talking their own language while working together – freer to comment among themselves alone - to then give us a presentation after each step and the opportunity for questions.

These sharing and discussion parts of all four sessions were tape recorded. In parallel we observed the groups' work and recorded their game moves on the table with a digital camera. This helped us understand and reconstruct the groups' negotiations even without understanding what they were talking. While the language problem posed clear limitations to our documentation, it was amazing to experience how much one can grasp through observing participants' interactions, the game configurations and moves they created, their engagement, points of dissent or debate, as accessible through their body language, tone of voice, laughter.

4 THE ORGANIZATIONAL GAME KIT

At the beginning of each session participants were given an introduction to the background of this workshop, the SPD approach, its focus on creating visions, as well as the method of design games as inspirational activities that should help participants come up with ideas, concentrating on 'How questions'. We also described the particular sets of 'How questions' to them and formulated as the aim of the workshop to 'test' with participants design games as a specific method of practicing SPD and to help them create their own visions.

4.1 The view of product line managers on their organization

The first group was formed of the four product line managers and the head of development at VCP1. Before VCP1 had had a flat hierarchy, and this was a step to formalize product management tasks, with core teams being formed around product lines. While project managers are nominated for particular projects – "this is a dynamic position" - product line managers should be planning the overall work, supervising, and managing critical situations. They are also responsible for the

marketing side, promotional material and so forth – “engineers are not interested in that – but customers are not to satisfy the designer’s ambition”.

The ‘How question’ this group was asked to address was: *How to acquire a business management culture (and construct a community of practice)?*, with the three steps: represent your organization, identify constraints, re-design. The group immediately started building a representation of their organization and they did this very fast. They were focused on the VCP1 branch, with its units and president (one of two), while the VCP2 branch was somewhat floating at the side.

The discussion focused first on the need to improve communication between the two branches and one of the product line managers, while talking, moved the head of development into a position between the two sites: “We need to analyze real problems in product life ... and improve communication with VCP2, move towards the coordination of requests from the product line to VCP2; somebody should coordinate and prioritize in VCP2”. The group quickly found images representing problems in the organization or constraints and they agreed on a series of problems, of which we here only describe a selected few.

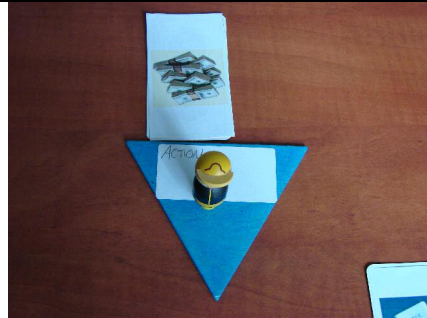


Figure 3: The most pressing problem of the president - lack of resources

The president was described as facing a mountain of problems:

- There are so many ‘messed up’ products and wasted effort - “someone has to coordinate the set of priorities between product lines”.
- Faster decisions – “sometimes we have good ideas how to solve problems, but the decision is not taken fast enough, as the president is taking care of everything”.
- The responsibilities are not clear – “who is in charge”; “we need a more fixed structure”



Figure 4: Further issues: motivation systems, human resource allocation, scheduling

- Improve motivation system – “after internship, people they fly away to other companies” because of low salaries and lack of interesting work.
- No strict allocation of human resources to product lines – “it is difficult to schedule anything, hard today I am a manager, without a fixed budget for a while.
- Project managers do not like to track schedules, because there are a lot of changes in schedule of product life -
- We need a list of redundant tasks, more precise goals for each product for each quarter.



Figure 5: Depending on a US-based distributor

The most difficult problem is DUS (the US based distribution company):

- It stands between VCP and customers - "last time I had experience of a direct interaction with customer, it is unbelievable how much we can learn from customers".
- DUS has not enough technical knowledge, sometimes very small details are essential for engineers – "we lose customers, and we do not know why, it is essential that we are aware why we lose a customer.
- "We are tied to them by a contract, we are very limited in making our own sales, is not possible for us to develop new things and go to the market".

4.2 The view of marketing and designers on their organization

Marketing and product lines are not well connected and cooperating at VCP1. One of the consequences is that marketing finds it difficult to express a marketing perspective in the way product information is conveyed. The website contains data sheets, which are written from a purely technical point of view. In particular the core asset – customizing at low cost – is not expressed in a way, someone who is not an expert in the design of virtual components can understand. The website contains a quite general description of the customer-oriented process, while explanations about configurability of the products are hidden in technical details.

Recently, a designer who had been sent to courses teaching marketing skills has been nominated head of marketing. He had joined the second group. This is how the marketing specialist describes the organization:

"This line is the IP Core department in Industry_site2(BB), and this line is the same department located in Industry_site1. This is the development department of Industry_site1, headed by M. This is the embedded systems and software department located in BB, which is headed by SF. And these two departments, maybe sub-departments, make the electronic department in total. This is marketing and sales in BB, and this is in Industry_site1. Here we have sales and marketing manager M, and here we have the sales manager S. Here we have the administration department in Industry_site1 headed by I. and this is administration and finance in BB and the chief financial officer, chief bookkeeper in BB Mrs. J. This in the middle, our core products, which are IP cores, virtual components. And they have influence on the whole activity in the company. Here we have also the IT department. It is in the middle because the people who work in this department work for both, Industry_site1 and BB. As artefacts, servers, but not as a hardware, but the whole system IT. Here we have some artefacts: This is 'Dollars', which means the money because most of the cores are sold in the United States. Here some promotion products and marketing products. They have both influences on marketing and development department. So they are in the middle of it ..."

While the first group was more focused on their own work organization, this group looked at both sites – VCP1 and BB - and their relationships.

The next step, again, was to visualize constraints:

- The group identifies as one of their main problems the failing communication with top management: "This 'Aladdin's lamp' illustrates some problems, which comes from our boss. He expects and we should know what he thinks about different things. He thinks and we should do in a way how he thinks it should be done ... Which just means that ... it is not properly explained. we don't just know and he thinks we should know. ... It should be explained better... he gives orders, but he doesn't ask whether it has been understood correctly. He doesn't know how we understand it. There is no feedback from our side".

- The picture of a road sign symbolizes that “the company is under permanent construction” which they think is due to the lack of “real management skills”.
- The cable illustrates the communication problems between various units of the company, between the electronic departments in Industry_site1 and BB, between marketing and development, between the board and lower management level and employees.
- The clock illustrates the problem of time pressure, which interrupts the flow of work: “Our projects are interrupted by other more important projects and so on. This causes frustration in the team.
- Associated with this are high work loads overloaded work – people have several tasks in parallel and when they move to another position, they still have to take care of their previous job.
- And, finally, the lack of resources and, as they see it, sound financial management: “Before the salary payment it is always a rush in the bookkeeping department that money is needed”.

Also this group has lots of ideas for organizational change:

- Improve management skills so as to be able to re-design products, enter new segments of the market, and so forth
- Establish a financial office
- Restructure the company: divide it into two independent entities, extract some IP Core activities, which are done at BB, and put integrated IP cores into Industry_site1, integrate marketing and sales in one place (Industry_place1)
- Strengthen sales – “to sharpen our sales channels” - so that the company becomes more independent from the US-based distributor; change the contract step-by-step: They have just the exclusive right to our representatives in the USA, in Far East. That causes problems. Our shares are different. It is very unfair for us. It is now 40%, it should be 10 or 5%. That is a company with just 7 people and all play golf.”

As the topic of management skills came up again and again, we asked them to select some image cards that help them describe “good management skills”. Here is their list:

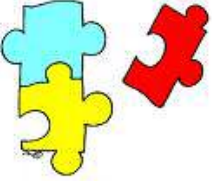


- Hard skills, hard knowledge
- Authority and leadership - “authority in terms of respect” - “leadership – being sort of a person who represents goals, identity in a convincing way”
- Communication – listening, explaining, acknowledging different opinions, taking time, fostering creativity
- The ability to delegate, trusting in the capability of others
- The ability to organize one’s own work, because this effects how other people work

This discussion was summed up: “This management problem does not concern only our boss, it concerns also the lower teams of the company, the product line managers, and we have other managers. All should have all these skills. And they should do only this and not some other functions.”

5 THE CREATIVE PRODUCT DESIGN GAME

5.1 Product line managers inventing a profitable ‘niche product’



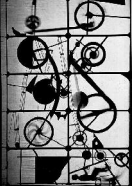
The first question that came up with throwing the dice was: How does one create a brand? The first group had no difficulties in thinking about *how to invent a profitable ‘niche product’*. This is their competence and it appeared that they had thought about this before. Here is their story:

 <p>The puzzle is connected with the product - we should have many products, then we can offer our customers complete solutions.</p>	 <p>We interpret this as a measuring wheel – the new product must be best in some field: smallest area in terms of gates, lowest in power consumption, etc. If we have the best product compare to our competition, we can easier fight for customers</p>	 <p>As a general idea of creating a brand - to find the combination of well-known things. This could be initially strange but if it is attractive for customers, and if customers find in this combination an added value, then they pay for it, it is good for promotion and for general idea for creating a product.</p>
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The second question that came up was: *How do we identify a market niche?*

 <p>A hand, which needs help, which needs our product. I think that all the time.</p> <p>Abstract object - this is just finding the blank fields in the market for our products, finding where we can put our products and sell them.</p>	 <p>Fishing boat - another possibility to create a market: fishing is like trying to introduce a new product, which becomes popular and create a market.</p> <p>There are some customers that need our product but we couldn't find them, we have to keep our eyes wide open and look for customers.</p>	 <p>Gadget - you sometimes produce imaginary things, things that are not really needed. But people like to buy these imaginary things.</p> <p>Maybe you can get the gadget as an inspiration and then in a next step then you come to a product that is more ordinary product.</p>
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The third question the group addressed, throwing the dice, was: *How to move forward once a niche product has been identified?*

 <p>To start just from the beginning to think on whole bunch of products and not on one product for a market niche which we would but we can start to think on a whole bunch of products to fill that whole in the market.</p>	 <p>The eagle - once you identify your product, spread your wings and think the wind and fly, try to be faster than the others, be the first and cover as much of market as you can.</p>	 <p>We have to run this machine, we have to start the production, to be ready on time, when everybody on the market is ready. This requires close cooperation of marketing with production.</p>
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This last point led back to the previous discussion about organizational change. The group spontaneously took the Organizational Game Kit and a long and intense debate started, with participants taking up building blocks to represent their ideas, talking while moving and rearranging

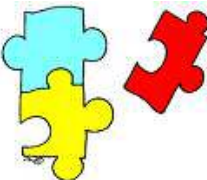


organisational units, and people, writing on post-its, and so forth. After a while they stopped and explained their debate to us:

“It is directly connected with the customer. It is the structure of marketing. First ... we were talking about splitting the company into two different separated parts: design and production, sales and marketing But this solution has skilled engineers on the marketing side, to have skilled engineers to have contact with customers. After the discussion we moved the skilled engineers, these product line leaders and the final statement is: We should have three product lines with separated groups of people and the product line leader is the main manager, who takes responsibility for direct connection to the customer and he is responsible for current design projects. This is more or less in line with how we have changed the organisation, but it is too slow. Last year we started this idea, and it doesn't work perfectly. ... we want to change.”

5.2 Marketing and designers thinking about how to present products and services to customers

The second group, with two participants from marketing, found it difficult to think about a strategy in support of how to produce *marketing-oriented documents with which to present our products and services to customers*. They started with a general conversation about their problems as marketing department. Their initial statement can be summarized as follows:

- Our products are no different from other products from the market but there is something that distinguishes us: “We have people that follow clients post sales, this is good in our business, we are not too expensive, but not the cheapest ones, not the highest quality, but have these particular strength”.
- Another strength is customizability of products – we need to better communicate this, express it more directly.
- Apart from configurability and the focus on service – technologically we are always behind: “Video codex is not new, ... we are talking about wireless products, it takes one or two years to develop a new product, and when we are ready the market is already full of it; we are just starting with dr2, but the market is already receiving dr3 ... “.
- Product line managers do not have the skills to become real product manager and they don't have the time to develop these skills.

 <p>Puzzle - exemplifies fractals. It is recognised by engineers. It can be used for advertisement to show you can put all this algorithm together and make an art object; our motto: turn engineering into an art.</p>	 <p>We have a wide offer, but some products are not finished, and not all in good condition.</p>	 <p>Gadget - we have added value to our products.</p>
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Measuring instrument - our products can be configured.



Diagram – flat structure of the company: the client can have direct contact with the engineers, this is important in our business.

6 DISCUSSION

6.1 The value of design games

The relevance of the ‘How questions’ we had prepared was confirmed by the fact that participants seem to discuss exactly these questions amongst themselves. Both groups – from marketing and development - basically agreed in their analysis of problems at VCP and they have lots of ideas on how to change the company. Still, the design games helped them in several ways: First of all, employees at VCP are rarely in a situation of being encouraged to have an open debate, without censorship, and with full acknowledgement of their competence. Usually their conversations remain ‘private’. The design games helped them voice their concerns, get a common understanding, and even go a step further beyond ideas they had already addressed amongst themselves. The physical objects that served as game elements supported their engagement. Image cards and organization building blocks served as thinking tools – we could observe participants selecting, picking up, moving, labelling these elements, thereby enacting ideas whilst talking. The playful and fun aspect of a game activated participants to engage, explore options, and enter the realm of the imaginary. The design games also helped establish a situation of trust and confidentiality, We observed that participants not only closed the door but also locked it with a key, keeping the key inside while they were engaged in a session. This clearly shows to what degree any shared workspace should support privacy.

With regard to the organizational change question both groups felt supported by the *Organizational Game Kit* – they immediately adopted it and were amazingly productive. Cooperatively probing options confirmed their competence as change agents in their own company. The creative product design game resonated well with the first group – they quickly selected images and had no difficulty producing ideas. Some of them had problems, however, to work with inspirational material – they were already fixed on an idea and then looked for a fitting image. The second group had considerable problems with responding creatively to questions related to their own task as marketing people (supported by two designers) – describing products, comparing them with those of the company’s competitors, creating a ‘brand’. The design game brought these difficulties to the fore and this created a lot of frustration which would otherwise not have become as apparent. It also made the low involvement of engineering in marketing questions, as well as the lack of time of product line managers for planning new products visible.

Donald Schön is probably the researcher that through his books on *the reflective designer* (Schön 1983, 1987) has offered the most influential account of design practice. Classical are his descriptions of how designers learn and conduct professional artistry through processes of *reflection-in-action*. From this he distinguishes *reflection on action*, pausing to think back over what one has done in a project, exploring the understanding that one has brought to the handling of the task. In a third kind of reflection, *reflection on practice*, the designer may surface and may criticize tacit understandings that have grown up around repetitive experiences of designing. In Schön’s language we can look at participants’ use of the design game as *reflection on practice*. The design games facilitated vision creation, acting as change agents. This is in contrast to the top down approach of top management, whose vision is that outsiders will be needed to rescue the company. The design games clearly enabled participation – they supported participants in engaging in social practice design. As part of

SPD, design games form important part of a cycle of ethnographic fieldwork – formulating ‘How questions’ - probing solutions, finding new solutions – feedback.

7 CONCLUSION

We have experimented with design games as one of the possibilities of practicing SPD. This was of course only a modest intervention of what in reality should be a series of workshops helping participants to co-construct new organizational forms and practices. Also, in this case, participants’ focus was not on IT implementation but on issues that seemed (to us but also to them) crucial for the survival of the company.

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