VISUAL INQUIRY: A TOOL FOR PRESENTING AND SHARING CONTEXTUAL KNOWLEDGE

FREDRIK SANDBERG

LINNAEUS UNIVERSITY, SCHOOL OF DESIGN

FREDRIK.SANDBERG@LNU.SE

ABSTRACT

This paper presents an inquiry method where the participants create a visual presentation of their experiential knowledge of working. As an example the paper describes experiences from using the inquiry method together with small local food producers. The owners use the visual inquiry tool to present their small company's activities, the stakeholders involved, problems, strengths, changes and dreams for the future. Although the food producers never had described their knowledge as one picture before, they had no problem mapping out and visually presenting complex information about their production. The method uses sticky notes as mapping tools, which enables the participants to rearrange information, point at related information, jump in time and also include the research group in the knowledge creation. The use of the visual inquiry method increases the participants' involvement and community building. The paper also describes how the visual presentations, created at several inquiry sessions, are used in a workshop on collaborative services.

INTRODUCTION

In this paper we present a method in which the participants make use of sticky notes as tools to visualize activities, actors, problems, strengths, changes, and dreams. We focus on the practicalities of using the method and our experiences using it in the Digital Service Markets (DSM) project. Finding a good method for creating knowledge about participants' work contexts is complicated, as different methods elicit different types of information and different types of reactions. During the DSM project we learned, through experience, that a traditional questionnaire with predetermined questions could not sufficiently support or include the participating food producers in the process of knowledge creation. This approach to acquiring contextual information created an inquiry session, which could not show the connections and details quickly enough. In response to these issues, we developed a workshop with tools and exercises drawn from generative techniques (Sanders 2000), human-centered design (Krippendorff 2006), actor network mapping (Morelli & Tollestrup 2007), and critical incident techniques (Edvardsson & Roos 2001). We begin by describing the project background, and then describe the visual inquiry activities and our experiences using the method in a research project. We conclude by suggesting how others can use the method and describing how we hope to use it in the future.

PROJECT BACKGROUND

The Digital Service Markets project is a collaboration project between an interdisciplinary group of researchers at Linnaeus University, a group of food producers from the surrounding province, and food buyers from the municipality in Kalmar. The project has two aims; one is to create new services that will help the municipality to buy locally produced food. The other is to create services that will increase communication between the involved food producers.

The group of researchers includes participants from three areas: Computer science, Computer supported

cooperative work, Informatics, and Service design. The food producers are a scattered group of 25 small companies, each with 2 to 10 employees.

In order to create knowledge about the food companies' work context, the research group visited the food producers in their work environments and interviewed the employees. The interview questionnaire included prepared questions, such as, what hours the producers work, who they work with, and what kinds of new services they think would help them in their future work. The answers were very helpful for the research group, but it was difficult to understand how the different answers were connected. It was also difficult for the designers to use the interview session and the analysis of the interviews as inspiration for developing new service concepts. Therefore, we clustered the questions and developed themes that could be mapped. During the rest of the inquiry sessions, the contextual knowledge was created and shared both verbally and visually.

THE VISUAL INQUIRY METHOD

Visual inquiry is a co-operative design method used to co-create knowledge about context, connections, and possible future service opportunities. The method is used during an activity where everyday material, such as sheets of A2 paper, sticky notes in various colours, stickers, and pencils are available to help the participants talk about and build their own presentation of their context. The workshop consists of six coherent parts. Each part has a specific colour and a theme that the workshop participants are to map out. The themes are: activities, actors, problems, strengths, changes, and dreams.

Figure 1: Toolkit

ACTIVITIES

- Inquiry assignment: Map out all the activities happening within a specific time-frame.
- Purpose: To create knowledge about when people are active, what people do, where the people are represented, and how the people value their activities.

ACTORS

- Inquiry assignment: Map out actors tied to all the activities.
- Purpose: To create knowledge about stakeholders, partners, and customers.

PROBLEMATIC EVENTS

- Inquiry assignment: Use stickers to map out problems.
- Purpose: To create knowledge about new product opportunities.

STRENGTHS

- Inquiry assignment: Use stickers to map out strengths.
- Purpose: To create knowledge about new product opportunities.

CHANGES

- Inquiry assignment: Map out how the end result of the proposed research project affects the document created using sticky notes.
- Purpose: To create knowledge about hopes and fears.

DREAMS FOR THE FUTURE

- Inquiry assignment: Map out dreams for the future.
- Purpose: To create knowledge about new product opportunities and future changes.

EXAMPLE: THE HERB GARDEN

The activity was tested with two employees at a small company that grows and sells herbs. The inquiry activity took place in the company's lunch; it was managed by three researchers from the research group. One researcher was in charge of the mapping activities; the other two listened and asked related and prepared questions. The inquiry activity lasted approximately two hours and was videotaped.

Figure 2: Employees

At the beginning of the activity the employees explained that they were a bit unsure about what they should do. To help them get started, we began a discussion about the starting date of their business year and what kind of activity they normally engage in at the start of the year.

During the dialog the employees began to share and compare their knowledge of past years' activities. Their dialog about common and uncommon activities revealed that they usually start the year by producing products for the coming season. Therefore they chose to start the activity theme with producing products. We asked them to write the activity down on a yellow sticky note and place it at the A2 paper in front of them.

The first sticky note triggered a discussion among the employees about other related activities. They were so eager to describe their next activities that we had to remind them to write them down on the sticky notes. They soon learned to divide the work between them; one described the activity whilst the other was writing and mapping. Halfway through the session they realized that they had forgotten a couple of activities, but they solved that by moving the older notes a few steps ahead on the paper and then they had room for the new ones.

When the employees started to map out the actors, they chose not to write down the actors' real names, as they thought that was sensitive information. Thus they assembled most of the actors under descriptive names such as customers or companies.

Even before we asked the participants to map out their problems, they had already talked a lot about them during the activity mapping. So when they were asked to put red stickers on problem spots, they didn't have to think for long. They put the first red dot on January, which is when they have to order products for the whole year. They never know if the ordered products will arrive on time or be late and delay everything else. When we asked them where things were going well or what they felt positive about, they had to think hard. Finally they chose to put the green stickers on places where they are close to the customers.
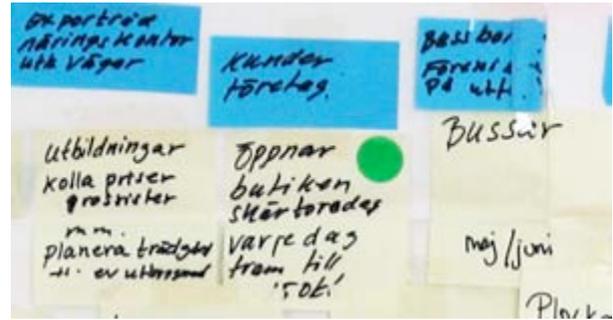
Figure 4: A section

When the researcher introduced the questions about changes and dreams the participants become very uncertain. They said they were not sure about the meaning of the research project. And they started to ask questions of both the researchers and each other. The discussion then led to insights about how the results from the research project could affect their visual presentation. They said that the project would create more co-operation with other companies. They also said that they would like to share their knowledge and become a mentor for new companies. When the workshop was over the participants said that it was very useful for them to do this workshop. It made them realize how much work they do and they wanted to keep it as a schedule for the next year.

REFLECTIONS ABOUT THE HERB GARDEN ACTIVITY

During the first stage of the inquiry session the participants' memories played a major role. They shared their memories with each other so that they could fill in the gaps on the paper. And the procedure of moving sticky notes back and forth helped them to connect and create other memories. Every memory that they placed on the paper also created a small detailed story.
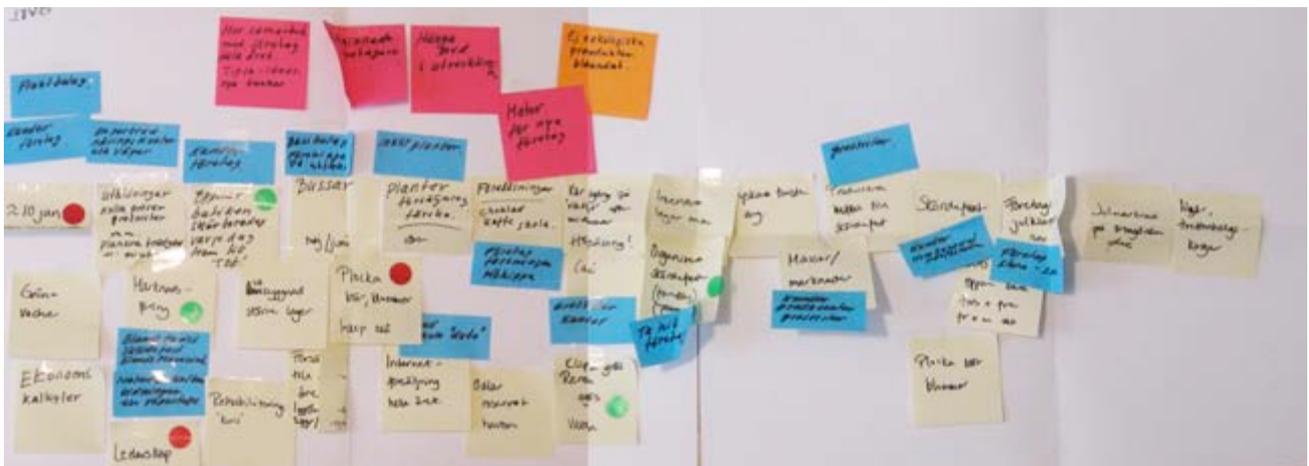
Figure 3: The visual presentation from the Herb Garden

They often co-created related stories. This procedure of placing memories and telling stories eventually became self-sustaining and the researchers only had to break the flow when it was time to introduce new themes or when the discussion drifted to far away from the topic.

During the inquiry the participants used the material in a very playful way and the method supported their process of placing and replacing information. The finished presentation became a document that shows both details and an overview. It is possible to see problems they have in January and their activities in July at the same time.

The participants chose to place activities that occur inside or close to the herb shop along a central horizontal line. Further down on the paper they placed activities such as individual fairs and year-round internet sales. The most exciting aspect of the workshop was how much information the participants managed to share with the researchers. In only two hours the researchers learned a great deal about an entire business year.

INTRODUCING THE METHOD AND THE RESULT TO THE INTERDISCIPLINARY RESEARCH GROUP

The visual inquiry was developed by the design researcher i.e. the author. The first time the whole research group tested the method was during the herb garden activity. After the session the participating researchers compared the visual inquiry to the earlier questionnaire activities.

Figure 5: Discussion within the research group

Their experience was that when the visual inquiry method was used it was easier for the food producers to talk about their work activity and context. The research group also noticed that the food producers were more engaged in producing knowledge when the visual inquiry was used. One important change from the earlier questionnaire activities was the visual presentation. When the visual inquiry method is used the information can be read in many different directions. That enables the researchers to think and ask questions in a non-linear way. The researchers also think that the visual presentation is a good basis for later discussions within the research group. It is easy to hang the presentation on the wall and use it as a reminder of the actual activity. The researchers also appreciated that the visual presentation makes it possible to see connections over time and space, which was not possible with the questionnaire method.

USING THE VISUAL PRESENTATIONS IN THE FUTURE FOOD SERVICES WORKSHOP

During the DSM project, the result of the visual inquiry session i.e. the visual presentation was used in two different settings. It was introduced directly to the research group, and it was used again in a new workshop named Future food services workshop.

Three companies were invited to the future food service workshop. They had all participated and created a visual presentation during the visual inquiry activity. The mission of the workshop was to introduce the companies to each other and to co-create new food service concepts.

Figure 6: Food producers sharing their knowledge

During the workshop the food producers used their visual presentations as tools to introduce their work context to the others. They used the visual presentation as a starting point for discussing problems, future trends and their dreams for the future. The final workshop activity was to analyse all the produced material and create a vision for themselves and for future food communities.

DISCUSSION

When we started to develop a new method for a contextual inquiry we wanted to create a meeting format that made it possible for experienced food producers to share their complex work knowledge with designers or researchers who have no experience of that work. It was also important that the inquiry session and the result would inspire designers. In order to do that we changed our existing inquiry method and complemented it with moveable artifacts and themes to map out.

We have now tested the method with seven different food producing companies. Our experience from using the method is that good dialogues emerged because it was possible to move around the sticky notes with information written on them. It was an open dialog with

no prepared script and that brought the food producers and the researchers closer together.

We also noted that both the researchers and the food producers learned something during the visual inquiry. The food producers said they had never structured their work in this way before. So for them the visual inquiry outcome was a new visual understanding of the work they do and of ways they could change.

As design researchers we learned that the visual inquiry works well in an interdisciplinary research project. The method created an artefact that all the researchers in the project could gather around. Also, the combination of artefact and video recordings makes it possible to reflect later on both the verbal and visual result.

Using sticky notes in research or idea creation is nothing new. The visual inquiry fits well into the strong tradition of using design games to facilitate interdisciplinary groups (Brandt, 2004). Similarities exist between visual inquiry and other game-storming activities such as SWOT analysis and AT-ONE (Tollestrup, 2009). Compared to the SWOT analysis the visual inquiry is more of an opening game without a desired end state. During the opening game the food producers try to create and share their world's boundaries, rules, and agreements (Gray, 2010). But later on in the future food service workshop the participants created and explored different desired end states together. The similarities between AT-ONE and the visual inquiry are that the visual presentation also contains actors. AT-ONE develops new service concepts by combining or replacing actors inside a service. The visual inquiry can be used in the same way. It is possible to extract actors from the visual presentation and to rearrange or replace them in order to inspire the process of designing new food services.

During the tests of the visual inquiry method, some participants added other tasks to complement the initial ones. For example, they drew extra figures, talked about other related themes, and decided not to follow the suggested map. But what is important in this process is creating one's own picture. Doing so gives the food producers an emotional attachment that makes them want to continue the collaboration. So even though that the method has rules, it is not a bad thing to break them.

CONCLUSION

In this paper we have presented an inquiry method in which participants create a visual presentation of their company's relationship to stakeholders, problems, strengths, changes, and dreams. This new way allows the participants to understand and describe their knowledge as one picture, and it makes it easier for both participants and researchers to see the frames and rules inside the context being explored. The outcome of the method is not only propositional but also presentational knowledge (Heron 1996) about new opportunities for collaboration and product development. The visual inquiry outcome has not yet resulted in any new functional services. However, based on the experiences gained in this research project we propose that the method can be used to increase co-creation and context awareness in new service development projects.

FUTURE WORK

During the visual inquiry activities we learned that the method supports small food producers in remembering and visually explaining their complex work context. Our next steps were to test the method in other areas. In one case we tested the method with people who attended a rock concert and found that the method could successfully create knowledge about their experience of safety. Another step is to see if the food producers can continue to use the method with new members of the food producing community.

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