

Supporting Rapid Ethnography for HCI Field Research with Pair Writing

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Abstract

The paper describes our fieldwork in the Danish retail industry. In our work, stakeholders' pattern recognition provided an insight to the existence of gaps in domain knowledge among the stakeholders. The challenge of bridging these gaps in an information system design has inspired the development of a light-weight technique that can augment the rapid ethnographic methods in our fieldwork, i.e. Pair Writing. Through several Pair Writing workshop sessions, we validated our fieldwork findings. In addition, the results of our workshop sessions have shown the potential of Pair Writing in validating our rapid ethnographic fieldwork findings.

1 Introduction

Conventional ethnographic approaches attempt to provide a description of human societies, activities and issues based on a personal investment of an ethnographer immersing into a community for a significant duration of time. Furthermore, a description that involves empirical works is usually elaborated in an ethnographic account. This account records the experience of an ethnographer based on subjective and personal observation, interpretation and reflection during the immersion in informants' culture.

Nevertheless, the meaning of ethnography itself has been extended and practiced in some other disciplines other than anthropology. Savage points out that any small-scale study carried out in everyday setting that focuses on the individual's meaning and qualifications than quantification and uses several methods that evolves in the design through study is categorized by many ethnographers nowadays as ethnography (Savage 2000). In the field of human computer interaction (HCI), the use of ethnographic approaches has been mostly focused to understand work practice in order to inform the design of information system through an ethnographic account. In employing some ethnographic approaches, the time-consuming fieldwork activities have to precede any information system design activities and can result in a significant delay in some projects with limited time allocation.

Tackling this shortcoming, Millen has proposed a "rapid ethnography" approach that aims to provide a reasonable understanding of users and their activities given significant time pressures and limited time in the field (Millen 2000). By constraining research focus and scope, using key informants, capturing rich field data by using multiple observers and interactive observation techniques, and collaborative qualitative data analysis, his collection of field methods emphasize on the reduction of time to employ fieldwork.

During our work, the Millen's rapid ethnography was insufficient to support our limited resources. We had only approximately a month of fieldwork spanning in a six-month time frame beside limited funding, logistics, opportunities and human resources. Tackling these issues, we have framed our work within Iterative Phase Model™ (IPM™) (see Figure 1)(Tedjasaputra & Sari 2005a). As an element of IPM, Pair Writing (Tedjasaputra, Sari, & Strom 2004, Tedjasaputra & Sari 2004) has provided a significant support for Millen's rapid ethnography. In this paper, we will focus our discussion on Pair Writing's role in supporting Millen's rapid ethnography for HCI field research.

2 The Issues in Fieldwork

The iterative rapid ethnographic fieldwork was conducted in the Danish retail industry for the adoption of Radio Frequency Identification (RFID) technology. The focus of the fieldwork was to understand the stakeholders and their work practice in the Danish retail industry. The results from the fieldwork were passed on to the next phase, the Reflection phase, in the IPM model (see Figure 1) (Tedjasaputra and Sari 2005a). We mostly employed stakeholder observation, fly-on-the-wall observation, open-ended interview and semi-structured interview during our fieldwork. The settings of the fieldwork were a retail store in Germany that has been implementing RFID technology in their

supply chain system, some retail stores, some warehouses, some retail offices, a couple of transportation companies, and some shoppers' homes in Denmark. The fieldwork was conducted regularly within a six-month time frame. The length of each fieldwork ranged from two hours to fourteen days with approximately one month time allocation spanning in the six-month time frame.

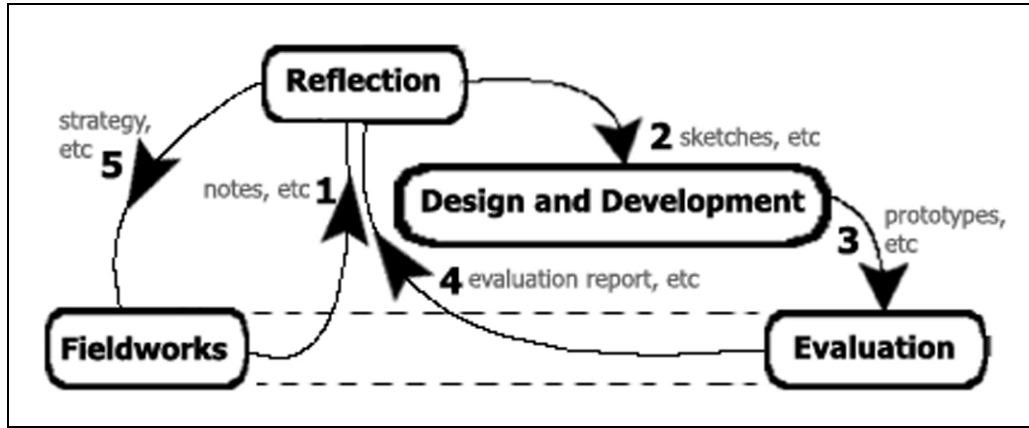


Figure 1: The Iterative Phase Model™ (IPM™)

From our fieldwork, we observed that retail industry is an environment with a very high work pace and tight space. The mobility of the retail workers is usually very high as they have to serve customers and do their daily tasks at the same time. Time is very limited for them to take care some other tasks beside their assigned tasks. A retail warehouse is usually full of goods. The mobility of these goods is very high as they have to be arranged and distributed. Depending on the size of a warehouse, the day and the number of goods in the warehouse, there is usually a limited free space for the movement of transporting vehicles in the warehouse. Shoppers, that are usually busy concentrating with their shopping activities, are rarely willing to be disturbed with questions especially during busy hours. Being presence in the field with video, camera, note books, pencils and camera; interviewing people in the store; sitting on a particular corner and observing can be annoying, raising suspicion and inconvenience for many.

During our fieldwork, being granted an access to observe the people and their environment closely and overtly was a challenge and a privilege. It was easier to conduct a covert research by being a shopper or observing the shoppers, the retail workers, their activities and environments than to conduct an overt research by asking for an access to conduct a fieldwork in the stores or warehouses. One of our successful approaches was to ask for an access through work as a trainee or apprentice, and subsequently conducted a semi-covert research. It took, however, quite a while to get that short-period access because of bureaucracy, personal attributes and company policy issues.

Even though access had been granted, some other problems still occurred during our field research. Being a newcomer, it was not always easy to be a part of the groups and build a personal relationship with the informants in a very short time. The lack of trust, great anxiety, curiosity and suspicion of the informants were some of the responses that we observed and analyzed during the fieldwork. In most cases, we kept our research semi-covert, where only our key persons, who usually people with high status and position knew the purpose of our research, while the others only understood that the purpose of our presence there was to work as trainee, contractors, consultants, visitors or surveyors.

Conducting some thorough interviews with the stakeholders in the retail industry was also challenging. A couple of main difficulties were the limited time allocated by some stakeholders in their work and the limited time to make a personal relationship with them and acquire their “languages”. Many stakeholders usually gave some peripheral answers for the questions we asked them. It was a problem to understand the local terms and slang they use within a short period. Another challenge was the difficulty to communicate with the stakeholders while conducting their

daily tasks. We tackle this issue by augmenting our interviews and then confirming our observation results with the stakeholders.

Finding a key person in the retail industry was very beneficial during our time-limited fieldwork. Key persons usually could give us more flexible access to acquire more information and meet with more informants. Nevertheless, finding a key person was also time and resources-consuming activity.

3 Pair Writing

In contrast to the in-situ rapid ethnographic fieldwork in the Danish retail industry, Pair Writing workshop sessions brought us back to a more controlled environment that provided some opportunities to conduct several collective reflections throughout the workshop sessions. These opportunities were useful to validate the fieldwork findings.

The results of our workshops have shown the potential of Pair Writing in validating our early rapid ethnographic fieldwork. The translation of written notes, video tapes, audio recordings, artifact collections and sketches into a variety of personas was the first stage of bridging our early fieldwork results to Pair Writing (Tedjasaputra et. al 2004, Tedjasaputra & Sari, 2004).

In each workshop, at least two key stakeholders from different areas in the retail industry worked together to create a context scenario based on a persona of a stakeholder in the retail industry. The personas were created and interpreted based on the results of our ethnographic study (Tedjasaputra, Sari & Strom 2004, Tedjasaputra & Sari 2004). The personas serve as some boundary objects for the stakeholders from different object worlds (Bucciarelli 2002). In our case, the stakeholders considered the personas as some archetypes of stakeholders in the Danish retail industry. The stakeholders interpreted a persona based on their own domain knowledge, cultural background and personal experience. Within the game of writing, the persona facilitated the process of meeting the language games (Ehn 1988, Wittgenstein 1965). The discussions of the personas that occurred during the Pair Writing workshop sessions confronted the participating stakeholders with our fieldwork findings about the stakeholders in the Danish retail industry. These discussions and context scenarios confirmed, revised, augmented and enriched our persona description of the stakeholders.

In some cases, when the stakeholders were familiar with the personas presented, they often spontaneously criticized and corrected the information of the personas if there were any incorrect or inaccurate descriptions. Their feedbacks were very useful to provide a reflection of our fieldwork results. Some stakeholders who were not familiar with the personas had a chance to learn from their Pair Writing pair or the Facilitator (Tedjasaputra & Sari 2005a) who might be more familiar with some particular issues, for example: a designer who did not have any idea about an export-import entrepreneur who supplies goods to a retail store had his own ideas and perspectives about the persona of an entrepreneur. His ideas and perceptions were later confronted with the facts from our ethnographic account and the discussion in Pair Writing workshop sessions.

4 Analysis and Discussion

Rapid ethnography proposed by Millen mostly focuses on the time reduction of the conventional ethnographic practices. Time, on the other hand, is a crucial matter in an ethnographic research. More time means more opportunity to build a relationships with stakeholders and more opportunity to observe and experience the changes over the time and the events that happen in different period of time (O' Reilly 2005).

Reflecting on the issues that we faced, during our iterative rapid ethnographic fieldwork, we have shifted the focus of **time reduction** in the early rapid ethnographic fieldwork to **resource-effective** fieldwork. This shift of focus originated from our limited funding, logistics, opportunities, time and human resources. In addition, the experience during our early fieldwork has shown that time-effective ethnographic methods were no longer adequate to support stakeholders' participation in our fieldwork. We needed a strategic change that can augment our rapid ethnographic fieldwork.

In addition to our effort to shift the focus of the fieldwork, we also iteratively analyzed our fieldwork findings and conducted several discussions in a Reflection phase (Tedjasaputra & Sari 2005a) to find a significant pattern of our

stakeholders in the Danish retail industry. Later, we found a pattern that describes most of the stakeholders in Danish retail industry who extremely focused with their activity domain. A pivotal implication of this situation was the existence of gaps in domain knowledge among the stakeholders. We needed a technique that can bridge these gaps in our information system design project.

The game of writing in Pair Writing allows each stakeholder to have an equal chance and contribute in the discussion and scenario writing process. During the writing process, there is a chance that stakeholder A may disagree with the scenario written by stakeholder B. There is nothing stakeholder A can do if stakeholder B disagrees to change the scenario written by stakeholder B after a negotiation. However, stakeholder A can still have a chance to explain or influence stakeholder B through the scenario written in the next turn based on the scenario written by stakeholder B.

We observed that Pair Writing workshop sessions provided a controlled environment for peripheral interaction among stakeholders, while in-situ participant observant activities, interviews and contextual inquiries did not provide the similar opportunity. In addition, during a short period between thirty and ninety minutes, the Pair Writing workshop sessions could facilitate the process of knowledge sharing (Tedjasaputra, Sari & Strom 2004), supporting stakeholder participation in the design process (Tedjasaputra & Sari 2004), beside validating the ethnographic study results, analysing the requirements for the design process and generating ideas for design potentials.

We have also identified several shortcomings in our Pair Writing workshop sessions, such as: the importance of skills in writing a narrative scenario, limited access to contextual in-situ artifacts and the importance of skills and habit of writing documentation that were not mastered by all the stakeholders. During the Pair Writing workshop sessions we have anticipated these shortcomings by providing Facilitator (Tedjasaputra & Sari 2005a) to guide the process and furnishing information regarding the contextual description of current practice and environment when needed. Another shortcoming was that the workshop sessions were conducted mostly in a controlled setting, so sometimes it was difficult for the stakeholders to communicate domain-specific artifacts.

5 Conclusion

The Pair Writing does not replace the practice of rapid ethnographic research. The results of Pair Writing workshop sessions (Tedjasaputra & Sari 2005b) validated and filled the gaps of the rapid ethnographic research results. In addition, a comparative analysis of context scenarios with the actual fieldwork findings did not only validate the findings, but also provided a further translation of fieldwork findings into several strategic and tactical deliverables in the process.

6 References

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