Designing with rather than for: On the relevance, joy and importance of collaborative engaged work in the design process of a home care mobile service

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Abstract. In an open innovation project called “mCity”, the aim is to verify conceptual applications for mobile services including mobile payments and transactions. On such design initiative was designated for the citizen group “seniors”, have home care taking as part of their assistance from the home care organisational system. The design initiative is called Skafferiet, a grocery-shopping application for the home care service. Based on this project, the aim in this article is to identify if and when significant design decisions were influenced by user involvement and contextual understanding detecting whether the applied design method supported the design process or if it lead to redundant activities. The applied approach was a combination of methodological strategies emphasizing co-design and engaged scholarship. The different actors involved were i) politicians, management and staff ii) caretakers iii) designers and iv) researchers. The result indicated numerous beneficial aspects with the iterative collaboration between actors. Apart from the relevance and joy of working together, it was important for the quality of the m-service, a successful implementation process and trigger for organizational improvement. The risk of rejecting one level of involvement, in favor of saving time and reduce complexity, would probably lead to a more narrow solution lacking the empowered process of involvement and engagement of all parties leading the relevance of the design process and its end-product astray.

Keywords. Engaged scholarship, reflective design, levels of user engagement, mobile services, mobile payments, home care organization, organizational development.

1 Introduction

By 2050, the aging society in Sweden will lead to fewer health professionals per caretaker (seniors), more senior citizens and simultaneously, the cost for health care services will increase (Ekholm, 2010). The need for staff is expected to increase 2010-2050 by 24-28 percent in the health care system and a 67-76 percent within the care for the elderly. What needs to be done according to Ekholm (2010) is to increase efficiency of care and perform proper welfare and this will improve outcomes and will reduce costs. Innovation, development and research is needed within the home care system and welfare system to achieve these goals (Ekholm, 2010). The complexity of such general challenges in the welfare system in Sweden calls for in
depth studies of what can be achieved at the local level. Of vital importance in such initiatives are the access to the empirical context, the home care organisation and their users, in order to pinpoint problematic areas that needs to be solved. One such problematic area was identified within the mCity project in Trollhättan, Sweden, and it was linked to grocery shopping. Obviously, people need food and grocery shopping is a part of everyday life but for people with disabilities, diseases, impaired vision, high age or other problems that render them unable to take care of themselves, grocery shopping is excluded. In Sweden, these citizens belong to the home care system and receive help from home care staff that tend to their needs and see to that they get fresh groceries. In Sweden, it is the municipality that is responsible for running the home care organization services. Addressing the home care service organization at a local context, a range of actors became important to incorporate in the study reported upon in this paper. The different actors involved in the project were; i) home care staff (politicians, management and staff); ii) seniors (elderly people taking home care); iii) designers; and iv) researchers.

1.1 The practical problems of grocery shopping

Approaching the problem of grocery shopping within the home care organisation was initiated by the management and politicians responsible for the welfare system in the municipality. The current work scenario for grocery shopping in today situation looks as follows:

In one of the daily visits at the seniors’ homes (one day a week), the staff in the studied home care organization take part in grocery shopping activities. They collect handwritten shopping lists and money that the seniors had prepared. Some of the handwritten notes are difficult to read, which sometimes causes that wrong groceries are brought home to the seniors. To hand money or a payment card over to a member of the home care staff (occasionally a complete stranger to them) is precarious. Besides, the home care staff consider it not optimal to handle money and having the forced responsibility of bringing the right change back to the seniors as well. Additionally, the staff members are educated for caring and nursing and should not be forced to go grocery shopping at all. Consequently, this process has a lot of human factors that can easily go wrong. Nevertheless, it is evident that as long as the money factor is involved in this process, there will be mistrust included.

Our design initiative is called Skafferiet, a mobile service (mobile app) aiming towards enabling those dependent on home care service to shop and pay their groceries and have them delivered home to their doors. Skafferiet is the Swedish word for a pantry. Skafferiet was developed in two steps; first as a functional prototype mainly within the exploration phase, to capture early user experiences and then as a full-scale version, where mobile payments included.

A future scenario for the seniors to go grocery shopping through a digital service via Skafferiet might be illustrated as follows:
Greta (a senior) is sitting together with her home care staff member with the tablet in her knee in order to purchase her weekly groceries. She says she is longing for her specific locally produced bread with raisins in it. She also needs to remember her last weeks groceries, which need to be filled up. A quick look in the weekly page of grocery offers remember her to also include an extra bag of cough drops. The home care staff member also encourage Greta to buy some extra fruits. Together they fulfill the purchase in Skafferiet talking about what to buy and why, clicking and selecting from an easy to follow menus with pictures of groceries, price information and finally the filled up shopping cart. The finalise the purchase via the payment method of her credit card (which is already registred in her profile) and gets her bonus points registrated as well. It is just so wait for the delivery, that will be conducted by the home care staff within a day. Greta can then look at her history of purchases and receipt in another view of Skafferiet - to check that everything is correctly delivered and charged - and she can also see what her neighbours bought looking at the top list of all groceries.

1.2 Related work and design approach

Previous research in design science in the information systems (IS) field has repeatedly emphasized the problem of IS design science being too oriented towards the artifact itself as well as sometimes being preoccupied with issues that lack relevance (Carlsson 2010) calling for engaged scholarship in the IS field (Mathiassen & Nielsen, 2008). This strong focus on the artifact in the recent literature is quite surprising given the so called Scandinavian approaches to collaborative design presented in the 80th and 90th. There the focus of the design process is particularly enhanced by the interplay between technology and organizational work and how these mutually influenced each other (Bødker, Grønbæk and Kyng, 1993) drawing upon the influences from socio-technical design (Mumford 1983). In spite of several attempts to promote design processes to achieve useful, helpful and relevant artifacts for users considering work contexts (Orlikowski 1993; Bannon 1993; Löwgren and Stolterman 2005; Nelson and Stolterman 2012) design processes continues to suffers from problems linked to how design teams understand the context and their ability to involve relevant users. Interesting to note is that also practitioners acknowledge the necessity of understanding context and the involvement of relevant user in the design process in order to design artifacts that will support rather than aggravate work processes (Söderström 2010). Guided by relevance as the main driver for addressing the problem of handling the problematic situation of cash, credit cards and grocery shopping for the home care staff and the senior citizens, the methodological approach actively used is a combination of the following methodological strategies: action research (Avision et al, 1999), action-case research (Braa & Vidgen, 2000), collaborative research (Mathiassen, 2002) as well as engaged research scholarship (Van de Ven, 2007).

Throughout the design process of Skafferiet developers, designers, senior citizens, home care staff, managers, municipality representatives and researchers has been closely and collaboratively connected at different times for different reasons engaged in different activities. Still, even if the collaboration during the design process was
intense, uncertainties remains regarding the effectiveness of the design process and if the process supported the vision of providing relevance for different user groups of Skafferiet.

1.3 Aim and research questions

The aim is to identify if and when user involvement and contextual understanding influenced significant design decisions during the design process of the Pantry App-Skafferiet. This to detect whether the applied design method supported the design process and led to a relevant artifact or if it lead the design process astray causing inefficiency in the design work.

RQ1: In what way were significant design decisions influenced by user involvement and contextual understanding?

RQ2: When in the design process did such decisions take place?

RQ3: Was the design of Skafferiet of such quality that it achieved its purpose of improving grocery shopping?

2 Design method and model

Usually, design processes are quite chaotic and disorganized (Nelson and Stolterman 2012) as designers often are guided by their vision and navigate with that idea in mind when dealing with the unpredictable design process (Löwgren and Stolterman 2005). In order to clarify if and when design decisions was linked to close collaboration with different stakeholder we used the design model presented by Löwgren and Stolterman (2005), identifying certain phases in a design process and typify actions that typically are connected to each identified phase.

2.1 Five identified phases

i) investigation: a phase where the designer/design team focus on understanding the studied situation. The data collection is oriented towards a contextual focus.

ii) exploration: a phase where the designer/design team focuses on what could be in a world with no limitations. The design activities are oriented towards creative thinking and idea generations.

iii) composition: a phase where the designer/design team focus on combining the understanding of contextual prerequisites and creative ideas in order to come up with solutions oriented towards the vision of quality improvements for the users everyday life.

iv) evaluation: a phase when the designer/design team are investigating how the work corresponds to the users, context and vision.
v) **coordination**: an ongoing phase where the different ideas, activities and decisions are linked together as a working process with a vision of keeping track of the process progress over time. The focus of this article will lie within the first four steps.

![Coordination Diagram](image)

*Picture 1: The five identified phases*

### 2.2 Three identified levels of engagement

Apart from these identified phases linked to typified activities, Löwgren and Stolterman (2005) also enhance the need for reflective practice within the design team with a focus on, and interaction with, future users of the artifact as well as the stakeholders involved. They address what they call three levels of engagement. A specific interest lies in revealing in what way these activities and interaction with actors (i.e. stakeholders in the level of engagement model) led to significant design decisions for the ongoing work with Skafferiet.

i) **Core**: the home care staff. Most of the home care staff have a caring education from an auxiliary nurse program, some are uneducated, working for a short time only and some have a full nursing education from a university.

ii) **Periphery**: caretakers. The caretakers have different backgrounds and differ in age and needs, they all have the need for home care in common though.

iii) **Context**: management, politicians and organizational conditions. The context consists of different levels of management. These levels range from the management of the assisted living facility to the elected politicians running the municipality. The levels in between include IT-management, the municipalities’ board of directors and economics department.

![Levels of Engagement Diagram](image)

*Picture 2: The three levels of engagement*
2.3 Data collection activities

A range of different data collection activities were conducted during the development of the Skafferiet. These activities has been systematized linked to phases (i.e when the activities occurred in the design process) and levels of engagement (i.e which stakeholders were engaged). See table 1.

<table>
<thead>
<tr>
<th>Investigation</th>
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</tr>
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<tbody>
<tr>
<td><strong>Caregivers</strong></td>
<td>3 Individual interviews</td>
<td>9 Individual interviews</td>
<td>23 Home visits: 2 caregivers *</td>
</tr>
<tr>
<td>5 Focus group interviews</td>
<td>23 Home visits: 9 caretakers *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Focus groups with mixed teams</td>
<td>20 Home visits: 7 caretakers *</td>
<td></td>
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</tr>
<tr>
<td><strong>Caretakers</strong></td>
<td>25 Individual interviews</td>
<td>9 Individual interviews</td>
<td></td>
</tr>
<tr>
<td>4 Focus group interviews</td>
<td>23 Home visits: 9 caretakers *</td>
<td>7 Status meetings</td>
<td></td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>4 Focus group interviews</td>
<td>3 Status meetings</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>3 Status meetings</td>
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</tbody>
</table>

Table 1: Data gathering activities

* Each home visit involved one caregiver and one caretaker. The visits mentioned in the separate column in the composition phase are the same visits. The same goes for the evaluation phase, those visits are the same visits, mentioned in the category caregiver as well as in the category caretaker. The visits in the composition phase and the evaluation phase, are not the same visits though, making the visits 43 altogether. The interviews conducted in the investigation phase, are not the same as conducted in the exploration phase.

3 Results and Analysis

The design of Skafferiet was reflected by the phases: investigation, exploration, composition and evaluation. Below each step will be described in relation to the kind of activities conducted in the design work and defined as belonging to a particular phase. It is important to remember that the presentation does not mimic the real work process but is merely used as a communicative model for presenting design activities during the elapsed project time for the design and its consequences.

Picture 3: Screenshot from Skafferiet
3.1 Investigation

The investigation included extensive empirical research, accounted for in table 1. As this is a project with user focus, the key-persons in the interview phase were the senior citizens (caretakers), and a group of retired citizens that do not yet belong to the Swedish home care system, in addition to the home care staff. The home care staff have tacit knowledge and were therefore able to, through interviews, distinguish how they perceived their daily work tasks into the tiniest detail. The caretakers have shed light on their specific needs and wants. Leaders from all levels in the municipality in addition to politicians have been involved throughout all phases by giving feedback on the application’s impact on the organizational structure as a whole. They also helped crystallize how the organization works on a higher level.

Most of the caretakers in question are unable to move on their own. Some are bound to a wheelchair or to a hospital bed at home, others to oxygen tanks. Some caretakers are dealing with other difficulties; like mental disabilities. Consequently, in these cases, a home care staff member has to open their front door and let themselves in. This puts weight on the trust between the two.

“The way we have been shopping means we have to keep track of all the shopping lists and the payment card or money that goes with each one. Then we have to shop for five caretakers simultaneously into a big trolley, pack everything and still keep track of which products should be paid for with which money.”

“What we want is a professional practice. Our competence level is higher and we get to use technology as a supporting tool within our profession.”

The home care staff expect, that this way of working with Skafferiet in their routine, might lead to a professional progression. Consequently they could feel more proud of their own work, by evolving from assistants to home care staff.

3.1.1 Significant design decisions

In this phase of the design process some significant understandings triggered decisions that influenced in which order steps were taken. Herein, the caretakers
(periphery) were involved as well as, the home care staff (core) were involved because of the aforementioned problems and regulations about handling money. In order to receive the grocery shopping service, the seniors were forced to attain private payment cards. The problematic situation arises when the caretakers are forced to give away their payment cards and pin-code to a member of the home care staff; occasionally a complete stranger. To understand the complex situations (context) the meetings with the home care staff were of significant importance since the importance of a changing their work practice related to the money factor, was stressed from the very beginning.

3.2 Exploration

Energized by the obtained information in the investigation phase, a sense of possibilities emerged and led to the realization of what can be, rather than putting emphasis on what is (Nelson and Stolterman, 2012). At a certain point there was a shift in focus to how things could be done in the perfect world, full of possibilities. The first draft of this “perfect world” did not correspond to what Skafferiet later evolved into, since aiming for the perfect scenario is neither relevant nor realistic. This was merely a learning process for all parties involved and led to an even closer collaboration among involved stakeholders within the three levels of engagements; the home care staff (core), caretakers (periphery) and responsible leaders in different levels in the municipality (context).

This close cooperation with the stakeholders resulted in a functional, co-produced prototype, which answered the needs of today. However, it requires to be nurtured with careful and continuous collaboration to answer the needs of the future. These improvements resulted in the elimination of the handwritten shopping lists as well as being forced to take on the responsibility that comes with handling cash or payment cards that belong to others. It gives them gratification to focus on care, instead of running around in a grocery shop, seeking products. Consequently, their role should evolve into a more meaningful caretaking and nurturing one and resulting in them having more pride in their profession.

Home care staff: "We want to encourage the dialog between us and the caretakers. In the perfect world, the home care staff and the caretakers can talk and that is what we want to accomplish, an easy discussion without it having to be to personal. Today we function more as assistants and we want to have a more caring role."

“The caretakers regain the control of their own decision making regarding choice of eatables as well as control over their payments. For the staff, it is the relief of not having to shop and being able to focus on care.”

At the same time a member of the management (context), was strongly against a default shopping list. A default shopping list was something that the home care staff previously had desired in order to have the grocery shopping more effective.
3.2.1 Significant design decisions

In this phase the design team worked closely with the involved parties within the three levels of engagements and this close collaboration led to creative co-design activities resulting in a functional prototype. Since the home care staff (core) as well as the caretakers (periphery) become engaged into the iterative prototype design process, the design team could capture early user experience that really energized the design team to move further with Skafferiet. It became evident that Skafferiet itself addressed a range of needs and wishes from both the home care staff and caretakers, practically as well as morally. Practically, since the cash and card handling could become history, and morally since the caretakers are not forced to acquire and give away a card for grocery shopping. In addition, the reason for rejecting the idea of this default shopping list in Skafferiet, derived from both the need for a continuing caring conversation and increased individual freedom of choice for the seniors expressed by the management (context). They should be free to choose to buy whatever they desired.

3.3 Composition

Since there was an expressed need for changes in work practices among the home care staff, such a need was also addressed when looking into how Skafferiet could be a part of such an ambition. In order to have a more efficient grocery shopping process via the Skafferiet, some organisational changes had to be done. For the home care staff, a new work schedule for visiting the caretakers’ homes was developed. In the prototype version, the grocery store involved picks and packs the groceries and sent out an invoice directly to the caretakers. In the full-scale Skafferiet, the caretakers pay directly within the application using mobile payments.

With the implementation of Skafferiet, both in its prototype stage and in the full-scale version, the handwritten shopping lists from the caretakers are history. The caretakers now select their products from within Skafferiet’s selection, which presents all products with pictures and product information. They sit in the comfort of their home alongside a member of the home care staff that help them choose and order selected products.

As one home care staff member expressed: “This is what we want to change. Instead of the staff leaving and running around in grocery shops, we could have a more advisory role when ordering the groceries.”

Senior: “This initiative leads to the home care staff staying for a longer time with me and thus having time to talk to me.”

During the observations in caretakers home in the composition phase, this clearly happened. The caretakers (periphery) sat alongside the home care staff (core) and interacted and shopped for groceries with the application. They sat closer and longer together, each time they met and had an ongoing conversation. It was observed that the caretakers were more excited when the home care staff came into their living room with the tablets in hand than before, when the shopping list scenario was observed. This was important for the caring and the caretaker could make individual
decisions, an activity that can be classified as important for the training of the brain. This can also be considered a major concern for the home care staff as they were able to be professional and consultative in their interactions rather than running around in a grocery store. This has also been expressed by the manager of the home care organization, (context).

A manager from the municipality’s board of directors: “Skafferiet is not just a feasible, neat technological solution to a problem. It is for us, an entirely necessary solution to a vital problem.”

Manager: “When thinking of Sweden in 2050, we have to prepare for the upcoming challenges in welfare and focus on using hands where hands are needed.”

### 3.3.1 Significant design decisions

Spending time in caretakers’ homes during the use of Skafferiet was highly informative for the design process and helped out to get involved in everyday practice. These observations also solidified the conviction to continue with the design of Skafferiet and its importance for the act of grocery shopping. The decision to continue with the product presentation and how to combine the use of the tablet with an organizational chain of activities was triggered in this phase.

### 3.4 Evaluation

The stakeholders have expressed satisfaction towards the new design of the full-scale application of Skafferiet. The anticipation is that a large group of caretakers alongside home care staff will find the artifact facilitating and useful. The implementation of mobile payments in the full-scale application resulted in an even greater impact on the trust-creation factor.

Skafferiet allows the caretakers to regain long lost control over their own economy and purchasing decisions again. Being in need of care, should not mean loss of control.

The implementation has generated further needs and wants such as a guidance role for the home care staff that have been asked to provide nutrition advice. The caretakers have progressed as well. They have expressed curiosity towards what other groceries to buy, so a function that presents the most popular choices amongst all buyers has been implemented. The prototype version was only an android application but the full-scale Skafferiet is platform independent at the request of both user groups. Taking this user-focused perspective has generated these new innovative user ideas continuously and thus made the application richer.

Member of the home care staff: “What we need to remember is the desire to eat. The apatite is something that needs to be promoted. Writing words on a piece of paper, does not make one desire to eat. They should get the chance to desire chips on a Friday or a new tasty type of soup. Many caretakers need to think of their food consumption because of their physical state so the importance of apatite is even higher for those who eat too seldom.”
Senior: “I have not been to the store for eight years, I would like to see what the local grocery store has to offer. I always write the same products, week after week, year after year.”

The close collaboration and their spontaneous reaction to the way Skafferiet evolved led to a range of design decisions the decision to prioritize images with high-resolution for the products presented in the application in order to expose the products as aesthetic as possible. To promote the appetite as well as enriching the experience for the caretakers through images has been a great challenge.

Senior: “The images are so clear! It is wonderful! It would be nice if the photos in the shopping cart on the right side would be bigger. Oh, it is so neat that the price is adjusted immediately when I select the bananas I want to buy. The text needs to be clearer though, I have such a bad eyesight.”

These particular comments led to the design decisions to make the photos of the products placed in the shopping cart bigger. The total price gets higher immediately when placing a product, an option tested with the functional prototype, as it was too difficult for the caretakers to imagine the changes without a visual prototype. The text size was adjusted accordingly and the color changed to a completely black tone. The font was tested amongst the caretakers and carefully selected according to their wishes.

In the early phases they perceived their thoughts as invalid, as they felt they were too old to make a difference. During the evaluation, they felt differently since they now realised the value of their contribution.

Senior: “I have been scared of technology but this is not so terrible. Even we, the old people, can use this, probably because it is partly designed by old people.”

A member of the home care staff: “Those who are mentally underdeveloped as X and Y in the test group, they are unable to read, but were able to use clear icons and the pictures were very important. Besides that, if you do not read everyday anymore, we see that much of that ability disappears.”

Mentally underdeveloped caretaker: “Good with different colors. Very good.”

### 3.4.1 Significant design decisions

The close collaboration and their spontaneous reaction to the way Skafferiet evolved led to a range of design decisions. For example, comments from caretakers regarding how the pictures triggered more active decision making for more varied grocery shopping habits resulted in prioritize images with high-resolution for the products presented in the application in order to expose the products as aesthetic as possible to trigger appetite. Bigger pictures of the products was also decided upon since some asked for such due to bad eyesight. One significant feedback from user involvement when evaluating Skafferiet was when users experienced that the tablet and Skafferiet was so easy to accept and adjust to. This can be linked to the fact that the caretakers were involved from the very beginning.
4 Discussion

The research focused on design issues during the development of Skafferiet, and on how significant information was captured and communicated to the design team as decisions for the application design.

Considering the home care staff as core users of Skafferiet provided us with fundamental information of how to direct focus and ambition in the design process. They have a designated goal of improving their practice in terms of having more face-to-face interaction with the home care takers in order to support and help caretakers in a trustful relationship. Taking the point of departure from their fundamental problems in practice provided us with guiding information on how the Skafferiet could be used. It was important to have their perceptions of what Skafferiet could be in their practice. By the implementation of Skafferiet, the home care staff no longer had to go away for shopping and this increases the comfort of work. Thus, the use of a digital service can strengthen the professional status and enhance professionalism. Therefore, realized Skafferiet as a relevant tool for increased communication between caretaker and home care staff in the very beginning of the process, already in the investigation phase.

The seniors were regarded as periphery users in this case. Maybe this is contradictory to the approaches known as end-user representation and customization. Though the caretakers had vital information about what role Skafferiet might play in the first place, their engagement was mainly oriented towards interface issues, conceptualized in the composition phase in terms of desires for how menus and images should be organized on the screen. However, when a digital artifact such as Skafferiet is designed for a limited audience, it may prove to be revolutionary for other user groups as well. By leveraging design knowledge from senior caretakers, we also recognised solutions to problems that not only address them as a restricted group. Opportunities open to include people with other limited abilities such as low vision were also possible. Here the artifact may be seen as liberating and empowering for such an extended end-user group. Hence, we can say that it is important to include periphery users in order to understand rather small design decisions and their consequences.

Home care organizations will undergo organizational changes due to more pressure on efficiency, cost savings, increased production, quality assurance, and last but not least, information security. Mobile services might serve as a tool to overcome this. For the organization the true value lies in the implementation of such a digital and mobile service, primarily in terms of process efficacy and quality assurance. Hedstrom (2004) says that increasing process efficiency in the shopping process means that the responsibility goes from staff at the assisted living dependency. This became obvious through both the investigation as well as evaluation phase. Of vital importance was the ongoing political debate on what the Swedish home care system will challenge put further pressure and force on this project. The contextual conditions from both government, municipality and the actual work practice of home care organisation were extremely important to understand in order to set the role of the Skafferiet in a holistic context.
By applying relevant, joyful and important strategies throughout the design process we claim the following implications of perceived effects, experienced in the three levels of engagement. These are verified through continuous interaction and participation through the design process. Also, these implications provided relevant and important guiding principles for making progress in the project. See table 2.

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<td>Caregivers</td>
<td>A working tool to facilitate their daily work</td>
<td>Distinct desire to evolve from assistants to caregivers and be more proud of their profession</td>
<td>The caring conversation intertwined with competence development within their daily work combined with them having more pride in their profession</td>
</tr>
<tr>
<td>Caretakers</td>
<td>To avoid having to give away their money to caregivers and skip the handwritten shopping-lists</td>
<td>Getting freedom of deciding back with visual choices and not being forced to hand their card or money to a caregiver</td>
<td>Surprise of recognition: Found out Skafferiet was the answer to their needs</td>
</tr>
<tr>
<td>Management</td>
<td>Favorites found unnecessary and seen as a trigger to the caretakers buying the same products every week. Later requested by the caretakers themselves</td>
<td>Technological problems with their existing systems challenging the organization to evolve</td>
<td>See Skafferiet as a contributor to an increased service. A digital service that is not only neat and new but necessary to deal with the growing number of seniors and the future of care</td>
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</table>

Table 2. Significant design imprints within each phase, on the three levels of engagement

By applying a combination of methodological strategies, through the above, two-dimensional approach (Table 2), we answer our research questions accordingly:

RQ1: In what way were significant design decisions influenced by user involvement and contextual understanding?

Through the close collaboration with the home care organisation and the nuanced understanding of the context, we realise Skafferiet as playing an appropriate role in every level of engagement. The design decisions were continuously legitimated through the iterative process. Also, the design team working with Skafferiet was energized by this close collaboration with the distinguished stakeholders on all levels of engagement. This pushed the process further even when obstacles seemed greater than benefits.

RQ2: When in the design process did such decisions take place?

Analysing our approach in retrospect, no one specific phase was identified as more important than another. Rather, we discovered that significant decisions were made in every phase in order to have Skafferiet as relevant as possible.

RQ3: Was the design of Skafferiet of such quality that it achieved its purpose of improving grocery shopping?
At this particular point of time, the answer is yes. Over time, there is a need to follow what effects Skafferiet has on the organisation as a whole. Further research is needed.

5 Conclusion

Trying to find an acceptable level of rigor and structure in that process, the concepts used from the three level of engagement and the typified phases in the design process has been appropriate for the purpose. Involving users representing actors from different levels became one major aspect of the drive for and development of the Skafferiet. The way actors became involved also made an impact such as the combinations of interviews, group meetings and home visits. In spite of the fact that the collected data was not as systematically analysed as if it had been a research project, it was still highly relevant to involve the people as they contributed to both contextual understanding and provided feedback on the ideas and questions given to them. It was evident that the data collection activities in each phase for each level of abstraction provided insightful information the became drivers and energizers for the design project as a whole. The actual meetings became significant activities in the collaborative process of mutual understanding on what the new application could be, what kind of problems that could be solved and what kind of work practice and organizational change would be possible and awaited by involved stakeholders. This generated knowledge and understanding, that otherwise could have been lost. The risk of rejecting one level of involvement, in favor of saving time and reduce complexity, could have resulted in a narrower solution. Such narrow solution lacking the empowered process of involvement and engagement of all parties might lead the relevance of the design process and product astray. Hence, the applied design approach was appropriate in order to encourage and support empowered learning processes.

In general, from a scientific level, these implications might be restricted to the current instance of a design. The rigour of the design process was lacking. However, relevance has been achieved. Therefore, when techno-organizational aspects are involved and ethical considerations regarding for whom the design is aimed for, we suggest that there is an increased importance to involve people in the process. Designing with people rather than for, becomes a quality-enhancing property in design decision making.

Acknowledgment

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References


