

# A Service Walkthrough in Astrid Lindgren's Footsteps

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## Abstract

How can service prototypes be created and evaluated? This paper describes how methods like bodystorming and experience prototyping can be used in combination with pluralistic walkthrough in an evaluation method we call 'service walkthrough'. We put the method to test in the development of augmented tourism services at the author Astrid Lindgren's childhood home. After initial design work, a mock-up and roleplay of a treasure hunt in the garden of the childhood home was made. It was evaluated using the service walkthrough method. The most important lesson learned was that a service walkthrough can be used to evaluate service prototypes and that it reveals information about practical as well as experiential issues for users.

**Keywords:** service prototyping, evaluation, bodystorming, experience prototyping, pluralistic usability walkthrough, service walkthrough

## Introduction

How service prototypes can be created and evaluated is one important area of research within service design. Prototyping services is different from prototyping physical products (e.g. Blomkvist & Holmlid, 2010; Parker, 2009; Nesta & thinkpublic, 2011, Holmlid & Evenson, 2007) and an area that requires more research (Ostrom, et al., 2010). One aspect of our research agenda is to explore what a service prototype might be, and how service prototypes can be evaluated. To understand service experiences, designers need to capture both physical and immaterial qualities in service representations. In addition, a sequence of interactions between a service provider and customer, mediated by different artefacts, need to be taken into account. The challenge of doing this lies at the heart of the service prototyping challenge, and to make realistic predictions based on service prototypes, designers arguably need to understand services in an embodied and holistic way that emphasise empathy for the experience of the intended customers and other stakeholders in the service.

In the following section a background to prototyping in service design is described. Following that, a case study of using what we have called a service walkthrough as a method for evaluating service design prototypes is presented. Finally some lessons learned are given and discussed.

## Background

When dealing with service that can be described or understood as a journey, with a clear temporal and sequential nature, there are some interesting ways to approach prototyping. For this type of service we have seen much knowledge about visualisations generated within service design (Segelström, 2010; Parker & Heapy, 2006), and representing service as journeys is one of the ways in which service designers' work distinguishes itself (Kimbell; 2009). How these journeys can be prototyped and tested, as whole service experiences, is an area that still requires further investigation (Blomkvist & Holmlid, 2010). A number of approaches that increase designers' ability to empathise with target groups have however been suggested in other design fields.

Prototypes in service design can focus on one touchpoint or service moment, or it can describe in detail what kind of information should flow through it, and what behaviours or interactions should occur at various service moments. The fidelity of prototypes can range from rough sketches to prototypes carried out with the actual customers in the actual implementation context (Blomkvist, 2011). In this paper the focus is on the level of a walkthrough of the service.

A service walkthrough is performed with a physical representation of how a service unfolds over time. It allows designers to explore, evaluate, and communicate service concepts in an embodied and holistic way. By embodied we mean that actual people take part in the service representation and understand the service by being physically and emotionally present. By holistic we mean that the service parts, the service moments and touchpoints – when understood and experienced as a

whole sequence – will reveal something about the service that cannot be accessed through the individual service constituents. A service walkthrough should thus be understood as a way of increasing empathy with the potential customer group.

A number of techniques with a similar purpose have been suggested before. The techniques Bodystorming and Experience prototyping advocate embodied prototyping that allow designers to get an understanding of experiences. These techniques have usually not been used to understand whole service experiences, but rather focus on single touchpoints. Bodystorming as a technique was termed by Burns et al. (1994), as a part of their Informance design approach. Informance is an approach quite similar to service walkthroughs where scenarios are acted out using low fidelity prototypes as props. The idea is that these sessions open up “informed dialogues” (p. 119) between designers and audiences (Burns et al., 1994). Bodystorming and its application in Ubiquitous Computing have been more thoroughly explored and reconfigured by Oulasvirta, Kurvinen, & Kankainen (2003). Bodystorming is a contextual way of exploring and understanding design problems. A session is carried out by gathering a group of people that explore a number of design problems related to a specific situation. The problems should be based on user research and the location in which the problem is explored should in some way resemble the intended use context to provide useful and reliable results (Oulasvirta, Kurvinen, & Kankainen, 2003).

Experience prototyping is an approach that attempts to understand the experience of interacting with an artefact, system, or a service (Buchenau & Fulton Suri, 2000). This approach is similar to bodystorming in that it tries to replicate an existing situation or construct a new one, in which participants can understand, in an embodied way, what it feels like to interact with something. Buchenau & Fulton Suri (2000) also showed how information about goals and needs were introduced to the participants of the prototype to produce certain behaviours and test certain aspects of the experience. This requires a measure of roleplaying from the participants, something that is not always experienced as easy or natural (Oulasvirta, Kurvinen, & Kankainen, 2003; Brandt & Grunnet, 2000). Roleplaying, drama and design games are popular techniques in design used to explore interactions and facilitate communication between stakeholders (see e.g. Brandt & Grunnet (2000)). A key in roleplaying situations is the props and setting, affecting the possibility for the participants to understand the situation and make relevant choices and actions.

Another technique with similar objectives and motives is pluralistic walkthrough (Bias, 1994). The technique was initially intended for usability inspections of user interfaces. This kind of walkthrough includes three types of participants: representative users, developers, and human factors professionals. Each participant takes the role of a user. The walkthrough starts with a brief overview followed by all participants going through the interface, represented with hard copy scenarios, and writing down their actions. After each scenario the participants have a semi-formalised discussion. A session administrator facilitates and moderates the session to keep users’ willingness to comment the actions and avoiding developers biasing users.

The common theme in these techniques is that they are all concerned with empathy for target user or customer groups, and how a design contributes to an experience. In the case of bodystorming this is achieved by going through the service in an embodied way, and experience prototyping also increases the understanding of what kinds of experiences can be associated with interactive elements. In the case of pluralistic walkthrough, empathy is increased by including potential users together with the developers and human factors professionals, who are asked to put themselves in the shoes of the users. According to Bias (1994) this was a way of increasing “inspector empathy” (p. 64). In addition, in the case of bodystorming the situated experience is emphasised – only by exploring prototypes in contexts that resemble the intended implementation context can we understand the end-users or customers. This is an important aspect of service prototyping as well, since a service experience cannot be separated from its location and contextual factors (Bitner, 1992).

We suggest that in service prototyping, a combination of these three techniques, where the whole service is walked through using “props” and “real people”, is a useful approach. In the case described below we will use an instance of a service walkthrough technique with props in the form of mock-ups of all the touchpoints that were considered meaningful for the prototyped service.

## The Case of Astrid Lindgren’s Näs

The case is built on the development of augmented tourism services at the author Astrid Lindgren's childhood home. The term ‘augmented’ refers to ‘augmented reality’ (AR), which we explore in the context of tourism services. We use smartphones that allow us to create mobile AR-applications. Such applications “superimpose virtual information over the real world (as seen through the camera and display of the phone)” (Nilsson, 2010, p. 1). As a start participatory design workshops were held where concept ideas were developed. Personas were created and bodystorming sessions were held, after which detailed storyboards for a treasure hunt was developed. Based on this work, props for all touchpoints and a storyboard for the role-play of a treasure hunt in the garden of childhood home were created (figure 1).



Figure 1 Some of the props for the service walkthrough.

## The Pluralistic Walkthrough Adapted to Service Design

This section of the paper describes how we performed the pluralistic walkthrough, what kind of results it provided, and a validation of the methodology.

### Participants

One of our designers facilitated the walkthrough together with two assistants. There were also one human factors specialist, two developers and two user participants. The user participants were married and had two children together (2 and 5 years old).



Figure 2. Figuring out what should happen during the walkthrough.

### Procedure

The facilitator and the two assistants met before the workshop to set up all the props in a physical environment, the garden outside our offices, that was similar to the garden outside Astrid Lindgren's childhood home Näs (figure 2). Key places were identified according to the spatial relations between important places in the garden of Näs. The distances between places

were not completely correct, but the overall positions of the important places were represented in our mock-up service walkthrough.

The walkthrough started when all props were set up. The facilitator then introduced the participants to the project. He asked them to fill in a screener questionnaire to gather general information about them (age, gender, children, education, experience with mobile technology etc.). Permission to record the session on video was also asked for and granted.

The participants were then given printed instructions that explained the scenario they were to go through, with all the important places, objects and buildings to keep in mind during the walkthrough. They also read the introduction to the treasure hunt, as they would have done in the reception of Astrid Lindgren's Näs. They were given the treasure map and a mock-up of a mobile phone, as they would have received it in the reception. The mock-up of the phone was made in transparent plastic and you could slide panels into it. Transparent panels were used to represent objects in the augmented reality world, and white paper panels were used to represent application screens.

During the service walkthrough the facilitator introduced the participants to the steps that were to be performed in the treasure hunt. He tried to get their comments and opinions, managed the session and made sure it progressed. The human factors specialist managed a detailed description of where to present the participants with what props, including what panels to insert into the mobile phone mock-up. One assistant kept track of all props and made sure the human factors specialist had the right props ready at the right time and the right place. The other assistant recorded the session on video.

The participants walked through the treasure hunt step by step. In the original pluralistic walkthrough method it is specified that the first to execute the steps always should be the users, followed by the developers, and finally the human factors specialist. In this case, the human factors specialist also managed the props, and this made us divert slightly from the specified method.

After each step of the treasure hunt, a short briefing was performed with each participant individually in order to investigate ideas, comments, problems and misunderstandings. Users were also encouraged to explain during the session why they took certain decisions or behaved in certain ways. When everybody had completed a step, a group discussion was held to highlight problems, raise criticism, and suggest improvements. At this stage it was important that the users got their say before anyone else. A cooperative atmosphere was essential at this stage, and the developers and designers were not allowed to become defensive. In order not to miss details of importance the participants were asked to take notes during their own performance of the steps. These notes were also used in this group discussion.

A final group discussion was held when all steps had been performed in the walkthrough of the treasure hunt, and concluding evaluative questionnaire was handed out. The walkthrough was over after one hour and forty-five minutes, and the facilitator and the assistants then thanked the participants and removed all the props that had been placed in the garden.

## Results

The main results of the service walkthrough were related to a set of different areas.

There were several occasions during the treasure hunt, where users were unclear about what they were supposed to do. This pointed towards the design of the touchpoints of the treasure hunt, which needed redesign, in terms of content as well as form. Moreover, there was a clear need to develop better posters and information for the guides at the reception, to better explain the steps and sequences and to manage the expectations and structure of the treasure hunt.

As the treasure hunt is an immersive self service to learn about Astrid Lindgren, there is a distribution of co-creation of the experience that leans towards the visitor. In this case, the managing the complexity of co-creation, with a map, a cell-phone, children and parents, was perceived as difficult to the participants.

During the treasure hunt we were made aware that better use of media such as audio and video might be useful in addition to text. In turn this gave us guidance to more clearly specify content development.

There was also discovered some needs to redesign the technological user interface.

## Validation

In order to validate the procedure of the method, we later asked the participants in the walkthrough a few questions about their experiences. The questions included what they thought about the test in general, if they had any issues with the test, and what they got out of participating.

One of the developers stated:

Actually we saw a lot of problems with the interface when he took us on the little test tour. Made us think about how to solve different issues that we had not really thought about before.

The other developer agreed that they found mistakes in the design during the pluralistic walkthrough. They also got suggestions from the other participants on how to include audio. The walkthrough contributed with things to add (especially sound) to make people more immersed in the treasure hunt.

The walkthrough was also experienced as slow compared to what the developers wanted to do on the mobile phone. Since all transparencies for the mock-up had to be managed the process became sluggish and participants could get the concept, but not the experience. One of the developers suggested that video and audio could be used during the pluralistic walkthrough to increase the understanding of what the final experience would be.

The user participants in the walkthrough expressed similar issues. One of them said:

It was rather fun to do something practical, but I was surprised that it wasn't a real mobile phone I was testing with. I think it would have been a different effect if you had seen what happens on the phone.

Another problem experienced by one of the user participants was that you overheard what the others were talking about. This may have influenced the ideas that came up.

For the user participants the most rewarding part was to learn that you could augment the real world using a mobile phone, and that a treasure hunt would be a really fun game for both children and adults.

## Lessons learned

The service walkthrough gave us feedback on the design that was important for the project. Having the developers participate in the walkthrough gave them first-hand understanding of the experience they should contribute to. This was critical for the future development of the service, including the required technology.

One of our designers facilitated the walkthrough together with two assistants. The amount of panels that was needed for the AR-application required order of all props and very clear descriptions of the steps involved. A service without these detailed interaction steps would perhaps not require two assistants.

The walkthrough was conducted in a location similar to the real servicescape. It was important to represent the spatial relations of the important places for the service. That is, the fidelity of the servicescape was kept, while validity was not.

The results of the walkthrough prompted us to avoid text and make better use of video and audio. This contributed to a more clear specification for content production. Here we see how the service walkthrough can tie the service design activities to other design domains like media design and interaction design.

We could also see that it was difficult to manage both phone and map, while also keeping track of your kids. This is an example of how a service walkthrough can help designers feel empathy for the users and contextualize their design decisions in relation to the physical, the social, and the technological context.

Overall we realised that there were several places in the treasure hunt where it was unclear what people were supposed to do, and this made us make many changes to printed media, video, audio and guide instructions.

We also noted some problems in the way in which we made the walkthrough. Despite having two assistants it was sluggish to manage all the props. This meant that participants got the concept, but not the experience. This means that the service walkthrough as we carried it out tested the logics behind all the steps of our treasure hunt, but it did not really convey how it would feel like to go through the gardens at Astrid Lindgren's Näs hunting for hidden treasures.

## Discussion

Designers need to capture both physical and immaterial qualities in service representations to understand service experiences. They also need to take a sequence of mediated interactions between service provider and customer into account. To accomplish this in a service prototype is a challenge. We set out to find ways of evaluating service prototypes using what we call service walkthroughs. We found the inspiration for the method in bodystorming, experience prototyping, and pluralistic walkthrough. Combining methods like this seemed a viable way to make a contextual, experiential, and empathic evaluation of the proposed service design.

Bodystorming aims at opening up informed dialogues between designers and audiences. It provides a contextual way of exploring design problems since you conduct the session in the situation of use. This idea was brought into the service

walkthrough evaluation method. We did however, not situate it at the real location, but used a similar location. From the results we collected it is not possible to say anything definite about the effects of not using the real location. However, in the setup we used, it seems not to have affected the participants of the walkthrough. Exploring these effects is an important area for future research.

Experience prototyping aims at getting designers to understand, in an embodied way, what it feels like to interact with something. This is also an important part of our service walkthrough. The pluralistic walkthrough also have the goal of including designers and developers in evaluation to give them inspector empathy (Bias, 1994). This method also gave us a protocol to follow for the evaluation.

All these methods require roleplaying from the participants and this does not always come naturally. This was also the case in our service walkthrough. Our props were not the real thing, and it was difficult to get the feel for how a customer journey would be experienced. Films and sound could perhaps be used in the walkthrough for this purpose. On the other hand we got feedback on sequencing and evidencing within the journey. The trade off between fidelity, media and evaluation results is also an interesting venue for future research.

## Conclusions

This paper has described an evaluation of a service prototype where the ideas of bodystorming, experience prototyping and pluralistic walkthrough were combined in an evaluation technique we call service walkthrough. The bodystorming and the experience prototyping methods bring with them a focus on the context and experience of a customer journey, and the pluralistic walkthrough method gave us a protocol to follow. We observed that the complexity of the props can impede on the evaluation of the experiential aspects, while still giving good feedback on the logics of the steps involved in the journey through a service.

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