Exploring Service Blueprints for Multiple Actors: A Case Study of Car Parking Services

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Summary

Service blueprints are usually included in listings of standard methods within service design. Still, little research has been conducted on service blueprints. The case study at hand explores how blueprints can be applied in a situation with three key actors, all with different motives and wishes. The case study is within the domain of car parking, a service which at a first glance may seem simple, but is rather complex when scrutinized. Three ways of blueprinting the situation are presented and discussed in the paper. Finally issues which arose from the blueprinting process are discussed in regard to implications for people creating blueprints.

Introduction

The use of various types of visualizations, such as service blueprints, is often held forward as one of the key characteristics of service design. However, little research has been done on how visualizations are used in service design (Segelström, 2009). In a joint project between Linköping University and the service design consultancy Transformator it was noted that the key service involved three main actors, which were clearly distinct from each other. As the research was visualized in form a service blueprint, it was found that it did not encompass the complexity of the situation. Explorations into new ways of including various types of data and the layout of the blueprint were made throughout the project. This paper reports on some of these variations on the blueprinting concept, highlighting the pros and cons with the various alternatives.

Background

Blueprinting was introduced as a service development tool in the early 1980's by Shostack (1982, 1984), writing in the field of service management. The creation of the service blueprint technique introduced the possibility to design services and experiences with closer attention to detail than previously. There was a need for methods and quality tests that would ensure that the outcome would be of high quality and the aims for the service reached. Service blueprints are detailed mappings of (all) actions and interaction of a service. Like traditional blueprints they can be used to describe an existing service or to model a new. Service blueprints are created to visualize all actions which are needed for a service to function, those which are visible to the customer as well as those which aren't. In her introduction to the blueprinting technique, Shostack (1982, 1984) emphasises the need to map the aspects which aren't perceived by the customer as well as the ones which are. She split the blueprint into two sections; onstage and backstage. Onstage activities were activities which are perceived by the customer, whereas backstage activities happen out of sight. The two sections were divided by a 'line of visibility'. The methodology was later picked up, and developed, by several authors in the field of service management. Influential writers in various stages of the development of the blueprinting technique have been Jane Kingman-Brundage (Kingman-Brundage, 1991; Kingman-Brundage, George, & Bowen, 1995) and Mary Jo Bitner (Zeithaml & Bitner, 2000; Bitner, Ostrom, & Morgan, 2008).

The 2008 article by Bitner, Ostrom & Morgan can be seen as a summary of the development of the service blueprinting technique up to that point. Their version has evolved substantially from the initial descriptions by Shostack. Figure 1 outlines the sections included in the blueprint suggested by Bitner, Ostrom & Morgan (2008):

Figure 1 - Model of blueprint as suggested by Bitner, Ostrom & Morgan (2008).

From Shostack's original blueprint with two sections (frontstage and backstage), the model has evolved to include five sections, or layers; Physical Evidence, Customer Actions, Onstage, Backstage and Support Processes. Customer action and Onstage are separated by the Line of Interaction, Onstage and the Backstage are separated by the Line of Visibility and, finally, Backstage and Support processes are separated by the Line of Internal Interaction (Bitner, Ostrom & Morgan, 2008).

Bitner, Ostrom & Morgan (2008, p. 70) describe a service as "intangible, variable, and delivered over time and space, people frequently resort to using words alone to specify them, resulting in oversimplification and incompleteness". It's important that roles and responsibilities of both customers and service providers are clarified. The result of a blueprint is a visual representation of the service process that everyone can see, and is therefore very useful in the development of the service. This is probably one of the main

reasons why blueprints were picked up early by the service design community (Segelström, 2009), as the design community became interested in services as a design object (as described in Segelström & Holmlid, 2009). Mager (2008) also describes the development of the blueprint as one of the first, and most important, steps in helping service designers transforming the intangible nature of services to a visible design object in an easy manner.

Blueprints have become one of the basic tools of service design, and features in various listings of methods for service design (Miettinen & Koivisto, 2009; Moritz, 2005; Mager & Gais, 2009; Engine, n.d.). However, little research has been done on blueprints, or visualizations in general (Segelström, 2009), by the service design community.

There has been a recent surge in articles on adaptations of the basic service blueprint to include new dimensions, and to code complex relationships. Spraragen & Chan (2008) investigated ways of integrating an emotional view of the customer's experience and expectations in the blueprint. Lee & Forlizzi (2009), propose a way of showing how the service evolves over time in a blueprint. Polaine (2009) explored ways of expanding the contents of service blueprints into what he calls Blueprint+, including emotional and cost aspects. They also suggest a change from the traditional stages to mapping according to characters.

The case; car parking

This paper reports on the findings from a service design project, which was a collaboration between Linköping University, the design consultancy Transformator and EuroPark, one of the industry leaders in the car parking sector in Sweden.

The research approach of this study was ethnographically inspired, using semi-structured interviews with the various stakeholders in the service offering as well as exploratory observations of several car parks around Sweden. Interviews were held with employees of a car park operator, car park owners and motorists. The services were observed first hand with detail paid to the experiences throughout the customer journey.
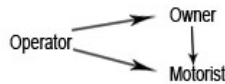
The service offering 'to park a car' consists of three main actors: The car park operator, the owner of the parking facility and the car parking clientele (henceforth referred to as motorists). The owner of the parking facility usually hires a car park operator to manage the car park. This is done because the owner doesn't have the time, the know-how or the interest to efficiently run a car park. Managing the car park involves duties such as fee control, surveillance and providing information signs in the facility. The car park operator's responsibilities also often include cleaning and maintenance of the parking facilities. As a result the car park owner can take on a passive role in the parking service, if he so wishes.

As car parking, in Sweden, to a large extent is a self-service service it is crucial for the success of the business that the motorist wants to and is able to use the service. Providing that little extra might persuade motorists to park at a specific car park instead of at a competitor's. For the car park operator, it is also important, to be able to deliver on their obligations towards the car park owner in such a good way to maintain current and new customers.

What complicates this three-part relationship is the varying degree that car park owners involve themselves with the day to day running of the car parks and whether or not the owners have direct contact with any motorists. Some owners choose to be responsible for certain aspects of the motorists' service experience, such as cleaning or maintenance. As motorists usually are unaware of the business arrangements behind a car parking, the motorists might (possibly erroneously) call the car park owners to file complaints as both the car park operator's and the car park owner's numbers are listed on the contact information.

The relationships behind a car park service is thus rather complex, although the service superficially seems rather trivial; the car park operator provides a service to both the motorists and owner, where the service to each of these have different goals. Further, the owner is, depending on the level of involvement to the car park, also involved in the service experience to the motorists provided by the operator. They could range anywhere from a second service provider down to not being involved at all in the motorists' service experience. Figure 2 below illustrates the relationship between the three main stakeholders in the service offering 'to park a car'.

Figure 2 - The relationships between the stakeholders. Arrows indicate direction of service provided.

With the rather complex relationship between the various stakeholders in mind, we wanted to map the service experience of the existing service. As the service is of a self-serving nature, with much of the work by the service provider(s) being done backstage, service blueprinting was seen as an appropriate tool.
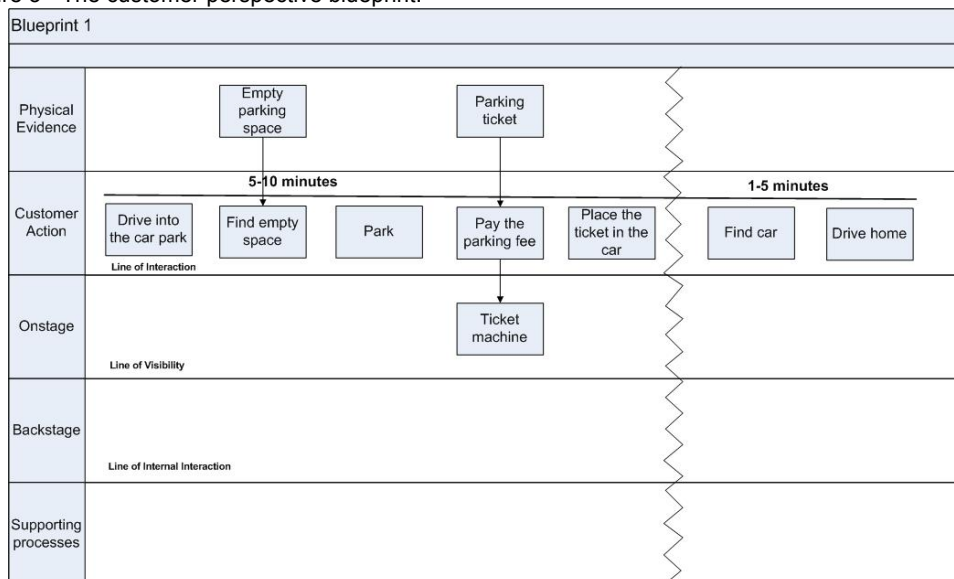
Alternative blueprinting

The blueprints in this paper are based on the blueprint structure described by Bitner, Ostrom & Morgan (2008). All in all three blueprints are presented to explore different ways of showing the service process. They were all created as a way of making sense of the existing service offering.

All the service blueprints were made with a slightly different focus. Here the three blueprints are described and an overview is given of their different strengths and weaknesses.

Blueprint 1: The customer perspective

For the first blueprint we used the customer perspective, and focused on the individual motorist's action. It can be seen in Figure 3 below.

Figure 3 - The customer perspective blueprint.

This blueprint describes the service as being trivial. The customers enters the car park, drives around, finds a parking space and pays, locks and leaves the car, then gets back after a designated time, and drives away. The ticket machine is the only touchpoint that a motorist interacts with inside the car park. Even when introducing fail points, such as "no empty parking space" or "ticket machine does not work", the actions are simple and straightforward. Even more serious fail points such as failing or skipping to pay the fee, causes straightforward actions, and the fact that a ticket inspector checks the car is not caused by the failure to pay the fee. The time spent in the car park by the customer is short and effective.

There are several challenges we gather from this blueprint. One is that the customer perspective taken does not easily allow for introducing some of the events that are going on, such as the ticket inspectors. Many of these events are not meant to be visible to customers, but are still physically performed onstage. Another challenge is that the co-production of the service between the different actors is hard to show. The interaction between the different actors is more complex than the layers presented by the model. There is an assumption behind the creation of this blueprint, e.g., that there are other customers in the car park, that co-produce the service experience of an individual.
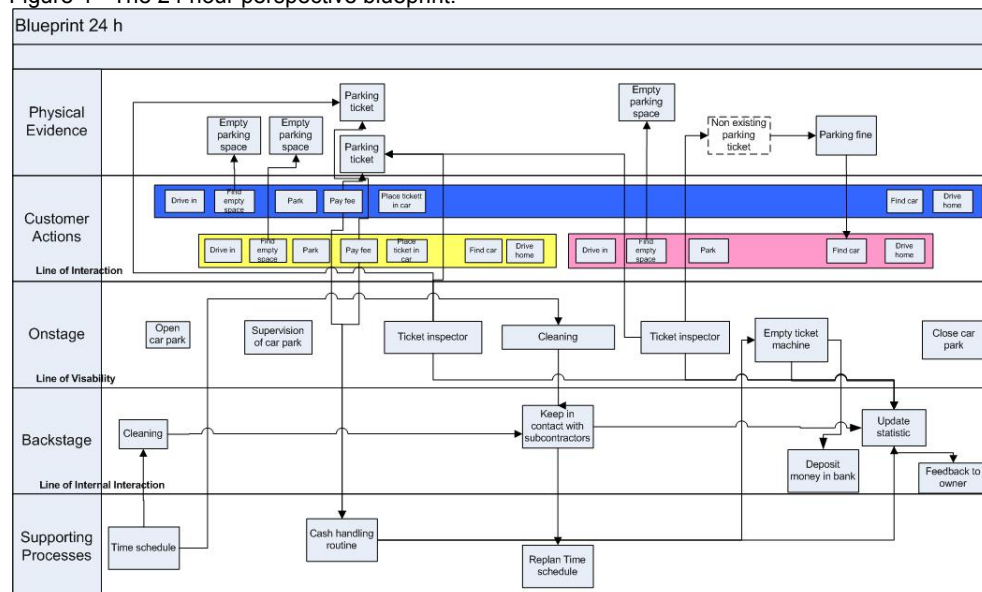
One obvious shortcoming of the blueprint is that the events that construct the service experience actually happen while the customer is away from the car. It could be viewed as a service ellipsis that contains no customer actions (Holmlid, 2006; Holmlid & Hertz 2007; Holmlid, forthcoming).

In order to capture this, we decided to create a blueprint that shows a 24h view of the service events of the car park. This meant that we turned away from the individual customer, and viewed the car park as a resource to be utilized on a "mass" customer basis.

Blueprint 2: The 24h perspective

The second blueprint contains more or less the same customer actions as the first blueprint, but with multiple customers performing at various times, and with different actions and timeframes. This means that some motorists will see and interact with ticket inspectors and cleaning staff, whereas others won't. This means that some actions that are onstage might be perceived as backstage by some motorists. The blueprint is presented in Figure 4 below.

Figure 4 - The 24 hour perspective blueprint.

When modelling the service process from a 24h perspective, the service visualization looks like a kind of mass-market service or a service resource available for usage. In the end this allows for showing differences between parking clients, and the assumption that there are other clients in the car park, become visible. In effect, one might now, through induction, show that the car park might be full, and the assumed fail points of the first blueprint are realities. In this blueprint, it is also possible to introduce the ticket inspectors fully, their schedule and that they are checking whether there are cars that do not have a parking ticket. They are in fact looking for missing service evidence. This highlights the car as a touchpoint, and the two variants of compositions that are possible; one with a ticket, and one without a ticket.
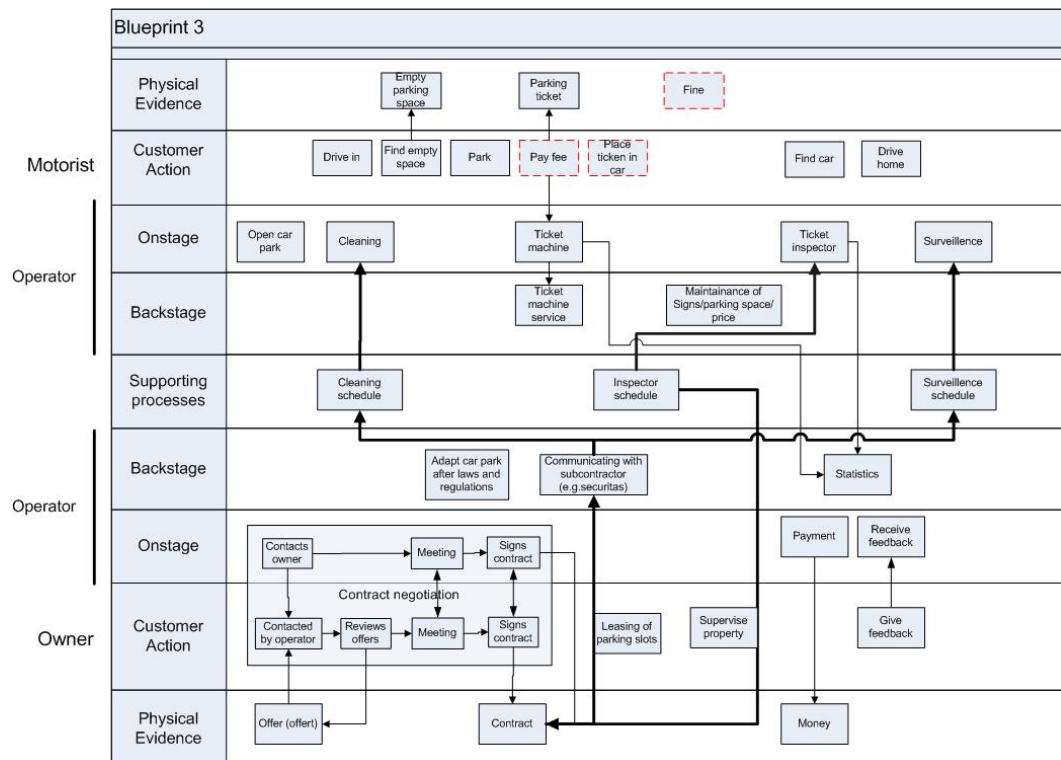
As a consequence of introducing more backstage activities and support processes, the challenge of co-production becomes even more evident. A parking service is often, as we stated earlier, a service co-produced by at least two business partners. A challenge with the 24h blueprint is that there is little support in distinguishing between what the parking operator handles and what the owner handles.

In order to try to deal with this we sketched on yet another blueprint. In the clear cut cases one could use colors, but sometimes actions are performed by several actors, and then a coloring scheme would not work well at all.

Blueprint 3: The multiple front-ends perspective

In the third blueprint we experimented with two front ends. This was an attempt to show all the different actions between all the actors that had been identified earlier. Figure 5 depicts the third blueprint.

Figure 5 - The multiple front-ends perspective.

At the top row are the customer actions. Further down there is the onstage and backstage actions performed by the operator. As we have seen in this service the operator provides a service to the motorist but at the same time there's a business to business relationship with the owner. This relationship is placed at the bottom of the blueprint, which also becomes a front end for the business relationship.

As the car park operator was the partner which initiated the research, it was seen as important to distinguish their and the owners' roles in regard to the customer. In the car park service the responsibilities and distribution between what the owner and the operator does in terms of e.g. cleaning and surveillance vary a lot between cases and depends on the contract between those two.

In the blueprint it is possible to show how actions of the operator as well as actions of the owner directly can influence the onstage experience of the motorist. These actions are marked by bold lines in the blueprint above.

One challenge with using a blueprint in this fashion is that the timelines and sequences are different for the different relationships. It would therefore be good to have a possibility to swap between these timelines. Another challenge is that this blueprint is no solution to showing actions performed by several actors.

It is also a challenge to show the complexity of the parking ticket. Not only is the discovery of missing evidence the cause of actions (issuing parking fines) with effect on the service experience, the parking ticket has two functions. It is a physical evidence for the motorist, that she can park her car until a certain time. It is also a touchpoint (in combination with a parked car) between the motorist and the ticket inspector. The interactive and dynamic nature of the ticket is difficult to capture in a blueprint.

Moreover, the motorist seems to have a subordinate role in both the second and the third blueprint, which feels awkward from a user centred design standpoint. On the other hand, it might be the case that the greatest design challenges lies in the B2B relationships rather than in the C2B layer.

For example, during research we discovered that the feedback between the operator and owners wasn't sufficient. The owners often wanted more feedback on the day to day operations then they received. When feedback was given, it was often explicitly asked for by the owner, or when a service failure had occurred.

Discussion

As we conducted design research to create an understanding of the car parking domain, the need to visualize quickly arose. The initial blueprint helped us analyze and structure the information gathered, but there still remained some problems. As the standard blueprint had been done, we realized that there was more information which needed to be included, such as relationships between actors and events. As a consequence, making blueprints of different kinds, it was required of us to work with the collected material, which in turn developed our understanding of the service further. On the surface, a parking service may look trivial and simple but underneath it all, it is a highly complex structure which makes the service work properly. A three way relationship exists between the car park owner, the car park operator and the motorist using the car park. The three way relationship in this service makes for a more complex service structure with relationships, which are hard to encompass in traditional blueprints.

Five main issues, or challenges, which emerged from our blueprinting work will be discussed here in terms of aspects to consider when creating blueprints.

Invisible on-stage actions

Design decisions on a service could include deciding that some actions that are physically performed onstage in the servicescape should not be visible to customers. In the parking case this can be exemplified with cleaning staff. The modelling tool does not give consistent advice on how to deal with such activities.

One reason for this might be that it is developed as a service management tool, where the intent of modelling is to be able to device an organisation, distribute responsibilities, divide labour to deliver service efficiently and effectively, and that is managed and directed easily and with precision.

Missing service evidence

In the parking case the parking ticket serves two purposes. The first is as physical evidence that one has paid and thus has earned the right to park. The other purpose is carried out when the ticket is combined with the car, to show the parking inspector that the motorist has paid the parking fee. This is fairly straightforward to model. But the role of the parking inspector is to look for "broken" physical evidence. That is, that the parking ticket is missing, or that the time-span has passed. For the customer this equals that she has no physical evidence. And that an important part of the business of the service relies on that parking inspectors are looking for missing physical evidence.

Customer perspective

When stating that one is taking a customer perspective, it is necessary to state how this perspective is constructed. In the blueprints made here we used a single customer perspective, and one kind of mass-customer perspective. Other perspectives that could have been used are the multiple archetypical customers, where blueprints are devised for a set of typical customers and customer scenarios, and a mass-customer perspective where all the customers are viewed as being possible to describe as one.

For different services, different ways of handling the timelines for the variety of customers is necessary, and the chosen perspective will direct this. In the car park a lot of actions are simultaneously happening onstage, and the sequences overlap. Capturing this in a blueprint can be done, but might make the blueprint more complex, especially when the regularity of actions have different time durations.

Complexity

An issue that arose from adding extra motorists, potential fail points and the B2B relationship was complexity. Several solutions could be applied, such as doing several different blueprints or defining blueprint overlays with different foci.

In a parking service, where the customer is away from the onstage most parts of the service performance, the B2B relationship underlying the B2C relationship becomes very important; it is a (B2B)2C service. Blueprinting such a service, might require one time duration from the customer perspective, and another from the business perspective. Doing this for the parking service it was possible to show most of the actions, but not the exact time when they occur,

nor their timing. For the B2B relationship there's a total time duration consisting of months but for the motorists' actions the total time is at most a few hours or a whole day. Disregarding temporal aspects becomes a necessary consequence if we want to incorporate both the motorist and B2B relationship in a single blueprint since the B2B relationship have actions that doesn't happen as often as the motorist actions.

After incorporating the B2B relationship, we were able to map some of the actions made between the owner and the operator and show where it connects with the motorists actions. Even if the different timelines for the owner and operator correlated it was possible to show the underlying structure of the service, especially the B2B relationship. What also contributed to complexity was that some physical evidence was directly connected to different actors in the service performance.

Non-presence

In the second blueprint we tried to show what can (and often happens) when the motorist is not present in the car park. Normally the ticket inspector controls the tickets, but it may also be other motorist actions, cleaning and small maintenance of the car park. With three motorists instead of one, we could cover more actions from different parts. We could also show that some people will see the onstage actions carried out by e.g. the cleaners and the ticket inspector but some won't ever see them. It was even possible to show when the actions occurred and that some of them could take place several times in one day. We also wanted to show that the length of the service (especially the time between when someone leaves the car and comes back) can differ quite a lot, without that being considered a service failure by the customer (compare with Shostack's 1984 article in which temporal limitations were seen as crucial).

Future research

In future research it would be interesting to see how fail points and cases where problems occur, can be integrated into blueprints. E.g. in this case we saw that the communication between the operator and the owners was not at the level and frequency as the owners wanted it to be.

It would also be of interest to see computer software to help in the creating of blueprints being developed. This would also be an opportunity to create interactive blueprints with the possibility to change timelines, switch the perspective and scaling abilities.

Conclusion

Service blueprints are powerful tools in aiding service designers to articulate insights, defining areas of investigation and analyze service processes. However, there are still many aspects which need to be investigated further, which is evident from the research presented here and the recent surge in adaptations of service blueprints. This also indicates that service blueprints are seen as a valid and important tool in a service designer's tool box in the future, although the concept needs to be adapted and improved to fully cater for the complex design situations which service designers face.

There is an assumption in blueprints that a service performance is structured in layers and that the service experience can be modelled as active actions in a partially ordered sequence.

As a design tool this assumption limits the degree of innovation that can be achieved from blueprints to things that might be expressed under these restrictions.

Given that the value of services often are produced in value constellations, it is not given that the relationship between the actors can be represented in clear cut layers, nor that the relationship between the client and the different actors can be layered. This limits the use of blueprints, or demands that there are simplifications made.

There is an assumption in the blueprint structure, that service evidence is something that the client gets or holds as evidence of a service offered to her. Even though it is not impossible, it is not evident how evidence shared by several actors across layers, with different communicative intents and surrounding action structures should be dealt with.

Finally, as has been pointed out elsewhere (Holmlid, 2006; Holmlid & Hertz, 2007), the representation format of a blueprint excludes the representation of e.g. inactivity, even when that might be the part most decisive for the service experience.

Acknowledgements

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