SERVICE-SCAPE AND WHITE SPACE: WHITE SPACE AS A STRUCTURING PRINCIPLE IN SERVICE DESIGN
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Abstract
In design a lot of attention is given the material design object. In the traditional rhetoric of design where function meets form, it is often instrumental functionality and the form of the material/content that is referred to.
In some design fields, such as graphic design, the material design object incorporates the white space, the space between the content. For graphics design white space has been appropriated as an important part of the design process, and can be used to as one factor to distinguish between genres of, e.g., newspapers. Implicitly graphic designers use white space to create readability, structure, as well as aesthetics to their designs.
In service design, a concept similar to white space have not been acknowledged and used as an aspect of design. Service design comprises a set of methods supporting the modelling of service experiences, such as service-scape, service portraits, service interface, etc. These focus on the content of the service experience, without especially highlighting the importance of white space for designers.
In this paper we suggest that white space can be used as a structuring principle in service design. We exemplify the concept and how white space is conveyed with service design modelling techniques.
The case, a package delivery service, has undergone a change process where some parts of the delivery chain have been pushed towards self service, and simultaneously transformed into a more mass-customized genre of service. Moreover, the contact with delivery personnel has been even more limited than it is today. The new package delivery service thus restructures white space of the service, and highlights design aspects of the service.
We conclude that white space can be used as a concept for service designers to use as a structuring principle in designing service experiences, and that the challenges for future research lie in finding relevant modelling and analytic techniques for designers to enable them to actively work with white space in their designs.

Introduction
In design a lot of attention is given the material design object. In the traditional rhetoric of design where function meets form, it is often instrumental functionality and the form of the material/content that is referred to. Attention is forced away from the intangible issues of non-use or the form of non-content.
In some design fields, such as graphic design, the material design object incorporates the white space, the space between the content. For graphics design white space has been appropriated as an important part of the design process, and can be used to as one factor to distinguish between genres of, e.g., newspapers. Implicitly graphic designers use white space to create readability, structure, as well as aesthetics to their designs.
In other design disciplines, such as service design, a concept similar to white space have not been acknowledged and used as a conscious aspect of design. In these design disciplines the methods focus on the design content, without especially highlighting the importance of white space for designers.
In this paper we will present aspects of white space in service design through an example case that suggests that white space can be used as a structuring principle in service design.

Framework

A service most of the time is described as being intangible, heterogeneous, and perishable. Moreover, it is considered that there is inseparability between production and consumption when it comes to services. Edvardsson, Gustafsson & Roos (2005) argues that this is an outdated definition, and that services rather are characterized by performance, processes and deeds. Lovelock & Gummesson (2004), e.g., agree partly with this and argue that for a specific service in a specific context, individual characteristics are more important than others, but they should not be viewed as a compulsory whole. When talking about service organizations, the term product-service system, PSS, is often used, to point towards a systemic point of view (Edvardsson, Gustafsson, Johnson & Sandén 2000). With that perspective the term servuction is often used, to differentiate from production. Even though these definitions are criticisable there is a consensus that services are processes over time carried out in space by people with the help of technology and objects.

Buchanan (2001) defines four orders of design. They are distinguished by their design object. The design objects are signs, products, actions and thought. The corresponding design disciplines are graphic design, industrial design, interaction design, and environmental design. In classical Swedish design theory the classification finds support from Paulsson & Paulsson (1957), as well as Hård af Segerstad (1957). Service design primarily deals with actions, the service milieux and the mindset of people.

Service design is, in contrast to service development, described as a human-centered approach and an outside-in perspective (Mager, 2005; Holmlid & Evenson, 2006; Holmlid, 2005). It is concerned with systematically applying design methodology and principles to the design of services (Evenson, 2005; Holmlid & Evenson, 2006). Service design integrates the possibilities and means to perform a service with such qualities, within the economy and strategic development of an organization. A service designer can “visualise, express and choreograph what other people can’t see, envisage solutions that do not yet exist, observe and interpret needs and behaviours and transform them into possible service futures, and express and evaluate, in the language of experiences, the quality of design” (Service Design Network, 2005).

As a discipline, service design should not be viewed in isolation, but in the context of service development, management, operations and marketing (Edvardsson, Gustafsson & Roos, 2005; Mager, 2005; Edvardsson, Gustafsson, Johnson & Sandén, 2000). Together these form the provisions for good service performance. User orientation, contextualization and other service development challenges are at the heart of service design (Edvardsson, Gustafsson, Johnson & Sandén, 2000; Kristensson, Gustafsson & Archer, 2004; SVID, Bruce & Bessant, 2002).

Service design activities appear throughout a service development process (see e.g. (Holmlid & Evenson, 2007; Moritz, 2005; Evenson, 2005; Mager & Evenson, 2006; Grönroos, 1990; Scheuing & Johnson, 1989). In these processes service design
contribute with a set of modelling techniques for service experiences. Among these modelling techniques can be mentioned service-scape, customer journeys, service interface, etc (Bitner, 1992; Evenson, 2005; Zeithaml, Parasuraman & Berry, 1990; Shostack, 1984; Moritz 2005; Mager, 2005; Holmlid & Evenson, 2005). These focus on the content of the service experience, without especially highlighting the importance of white space for designers. Tschumi (1990), in e.g. his Manhattan transcripts (Tschumi, 1994), highlights space, movement and event, in order to transcribe things not normally include in architectural representation in the 70’s. In the Manhattan transcripts he directed a small set of representations to present the complex relationship between space and its use. In representations of services similar conceptual representations can be made, given that services are usage of space over periods of time deliberately directed by actors with certain objectives.

Modeling and prototyping are central in service design as in many other design disciplines. These activities are closely related to service development activities, such as documenting the servicescape (Bitner, 1992), performing blueprinting (Shostack, 1984), and defining touchpoints (Zeithaml, Parasuraman & Berry, 1990). Modeling techniques from other design disciplines can be used, such as personas, scenarios, enactments, etc.

Given the nature of services as being processes over time carried out in space, two tentative categories of white space would be physical white space and time white space. If we also consider that actions are carried out within these processes, we could anticipate that non-activity could be regarded as white space. In service design one important focus for design work is the service evidence and the service interface. For these we can anticipate that specific aspects of white space will be important. For example, for a form or a receipt the white space of graphical design is crucial.

Example case

The case takes as its starting point the delivery of postal packages to non-company clients. We used three modeling techniques, an action model, a physical model and an actor model, to understand the role of white space in the service performance. The modeling techniques were used for a traditional package delivery service and a delivery service with a higher degree of self-service.

Traditional package delivery service

There are several different ways that traditional postal package delivery services function. We will base our description of a typical process from Sweden. Figure 1 approx here

Action model

The action model, when taking into account only the steps in the procedure, indicates three white spaces (see figure 2). The grey areas are the action related white-spaces. Figure 2. approx here

When introducing a time-aspect the white-spaces remain, but we are given a possibility to understand the amount of time of the white-spaces (see figure 3). Figure 3. approx here
Physical model
In the physical model (see figure 4) the service points and white spaces are defined by the layout of the office space. In the figure the bright green area are the desks where a customer meets the service personnel and the green ellipsis around these areas are pre- and post-service areas. These areas are seldom occupied by waiting customers, and are thus regarded as white spaces. The marked red areas are white spaces due to the placement of doors. The green area overlapping the two red circles defines the space where the cueing ticket is picked up. This area is also regarded as a pre-service area, and as a white space; you are not standing there unless you are getting your cueing-ticket.
Figure 4. approx here

Actor model
The actor model for a traditional package delivery service shows that there is both direct and mediated contact with employees of the delivery service (see figure 5). The mediated contact consists of a mail sent to the recipient. The form in this mail is used when picking up the package at the post office, as a token of identification.
Figure 5. approx here

Packstation package delivery service
In Germany an innovative delivery system recently was developed and implemented, with an increased degree of self-service. Instead of picking your package up at a post office, packages are delivered to a self-service station, a Packstation. The Packstations are available around the clock. When the package is delivered to the Packstation the customer receives an SMS/Email. With the registered chip-card the customer identifies herself and is allowed to retrieve her package from the Packstation. If the particular Packstation the customer have registered for delivery is full, the postal service will decide a new delivery point for the package. This could be a Packstation nearby, or a post-office. The customer is informed about this change.
Figure 6 approx here

Action model
The action model for the Packstation shows some features of the service-process (see figure 7). The action and time-related white space is visible as grey areas in the model.
Figure 7 approx here
The white space indicated consists of periods of waiting for the customer. The first period of waiting ends when the customer receives the text message (SMS or email). Until then the customer does not know all the steps of the logistics chain.

Physical model
The physical model for the Packstation shows some features of the service-scape (see figure 8). The dark green area indicates the customer-active area, where the chip-card is inserted, payment is made etc. The light green area on the Packstation indicates the pick-up area, which also can be viewed as the final step in the delivery process. The light green area on the ground is the area where a customer moves in and out of the self-service situation, this is a pre- and post-service area. The red area on the ground indicates a possible trail for a line of customers.
Figure 8 approx here
The main physical white spaces are the pre- and post-service area and the trail for a line of customers. In this example the open angle of the Packstation allows for both a line of customers and a restricted space of service action. The pre- and post-service area will be used only by the customer picking up a package.

**Actor model**
The actor model for the Packstation puts the customer at the centre (see figure 9). There is no direct contact between any individual of the postal service and the customer. All contact is mediated through technological means.

**Discussion**
The tentative definition of white space for services comprising physical and time aspects, is not enough to capture important aspects of white space for service design. In comparison between the two examples there is a difference in social content of the service performance. The actor models capture these social aspects to a certain degree. That is, the increased degree of self-service introduces a *social white space*. As a consequence service designers need to rely more on the design of infrastructure and self-service terminals for service performance as well as brand value management. In the traditional delivery service, the brand values and the service performance was upheld, and adapted, by employees in direct contact with customers. As a consequence service designers here need to rely on personnel resources, such as service mindedness, situated adaptability of service performance, etc. In the transition between service systems, the decreased social contact with employees of the service organization will be experienced as a social white space. Similar development can be found in the banking sector, where bank offices have been totally restructured as a way of demanding more usage of self-service technologies as well as an effect of the increased self-service possibilities.

There can also be noted a qualitative difference between white spaces in the two examples. One distinguishing factor is who has *control* of the white space. In the action model this can be distinguished in the following manner (see Figure 10)

Figure 10 approx here

The model shows that the amount of customer control over white space is larger when using the Packstation delivery, than using a traditional delivery system. In the Packstation example, at the precise moment the customer receives notice that the package have arrived through the text message, she is in control over the period of waiting before picking up the package. In the traditional package service this is not the case. When the customer receives the notice, when picking up the mail at home after work, she might be *required* to wait over night before the post-office is open again. During this period of waiting she is in no control over the white space. Similarly, she is in no control of the waiting period due to locating the package at the post-office, which is performed by the service personnel. Moreover, in the traditional package service delivery process the overall time span from arrival of the package to the post-office consists of delivering the mail message to the customer and the period of waiting between that and the opening hours of the post-offices. A conceptual comparison of the two different delivery methods shows
that with the Packstation the customer can pick her package up before she would know that the package had arrived at the post-office in the traditional delivery process.

Working with the white space of the traditional package delivery system as a focus for design we suggest two possible ways. One could 1) focus on shortening the time before customers getting notice of the arrival of the package, through an SMS, or 2) finding ways to increase the opening hours for offices where packages could be picked up.

In the design field that deals with graphic as a design object the white space is a natural part of the design representations and expressions, which is not the case for service design. In service design representations, such as blueprints, the white space can sometimes be identified, but there is not necessarily any relationship between amount of represented white space and the white space in actual service performance. Some of the modeling techniques used above can be developed to integrate white space as part of the representation and design expressions.

**Conclusion**

Based on the white space concept presented and the case, white space should be considered as an integral part of the design object of services. Based on the discussion we conclude that deliberate design work with appropriate methods and tools treating white space as an integral part of the service design object, provide new means for finding structuring principles for specific design challenges. The challenges for future research lie in finding relevant modelling and analytic techniques for designers to enable them to actively work with white space in their expressive design work.

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Figure 1. Traditional package service delivery. Photo: Mats Ramkvist. Source posten.se
Figure 2. Traditional package delivery, action model

Figure 3. Traditional package delivery, action model with time-aspect
Figure 4. Traditional package delivery, physical model

Figure 5. Traditional package delivery, actor model
Figure 6. The packstation (source: Siemens press picture)

Figure 7. The action model for the Packstation delivery
Figure 8. The physical model for the packstation. Dark green indicates an active service contact point, light green indicates a service area, and red indicates white space.

Figure 9. Actor model for the Packstation
Figure 10. White-space and control. Packstation example to the left, traditional delivery to the right. Blue indicates that the customer has control, green that the customer have shared control, and red that the customer have no control.