

## 4 — Service Design

### Summary

This chapter provides an overview of service design as a human-centric approach for creating, describing, and operationalizing new or improved services. It outlines how service design relates to topics such as service innovation and new service development, as well as the key characteristics associated with the concept today. The service design process including a selection of specific methods is introduced and illustrated.

### Learning Objectives

1. Explain how service design relates to service innovation and new service development.
2. Examine the meaning of service design over the past three decades.
3. Understand the key characteristics of service design and the specific perspective designers contributed to the creation and improvement of services.
4. Explain what a typical service design process looks like and what specific methods are used by service designers.
5. Apply core methods such as stakeholder maps, personas, customer journey maps, and blueprints in practice.

**Opening Case** Accommodation Services**SLEEPLESS IN ICELAND – WHY PARTIES ARE NOT EVERYBODY'S PIECE OF CAKE**

“I love Iceland! I adore it for its geological uniqueness, for the beauty of its nature, its literature and music scene and, in general, its people. Upon arrival of my last trip to the country, my spouse and I checked into a pleasant four – star hotel in Reykjavik’s city center to be close to the domestic airport for an early morning departure to northern Iceland the next day. The friendly receptionist gave us a nice room on one of the upper floors. So, all was good and we went out for dinner in town.

Around 10 pm, back in our hotel room, we realized loud music coming from somewhere nearby. “Just some young people out on the street enjoying Reykjavik at night and playing music in their car; they will be gone soon”, we thought. But not so. Over time the noise level rose and by 11 pm we could feel the vibrations of the music’s constant beat in our room. I decided to explore where the music came from. So, I left our room and walked along the hallway. The closer I got to the staircases, the louder it got. Level by level, I went down the stairs until I stood right in front of the backdoors of the hotel’s conference venue. Obviously, this evening our hotel was the place to be for Reykjavik’s nightlife scene.

Down in the lobby, a group of sleepless hotel guests had already gathered and the receptionist confirmed everybody that she would take care of the situation. The music would be turned down soon. Hoping for the best, I headed back to our room, only, to return back to the reception 30 minutes later due to unchanged loudness and vibrations. This time the receptionist told everybody, there was nothing she can do about the noise. The event department of the hotel had rented out the venue to a large party until later that night. But we could feel free to complain to the hotel’s management the next morning.

Most people left upset, yet, I did not want to yield and asked whether they were fully booked. The lady denied. So, I asked whether there are still some rooms available in the building’s wing that was most distant from the venue and if she would be entitled to change us into another room if we are not satisfied with the one we’ve got. She confirmed all of these points. Lucky me! And, off I went with a new room key, ready for a good night of sleep. However, most of the other disappointed guests probably stayed sleepless for another couple of hours.

Stories like this are common. Nevertheless, it is worth having a closer look at what happened in the opening case. Services lead to experiences on the customer side [1] and service providers aim to optimize this experience. The traveler is looking forward to a great vacation experience starting with a quiet night in a pleasant hotel. The other customers, the participants of the party, are looking for a

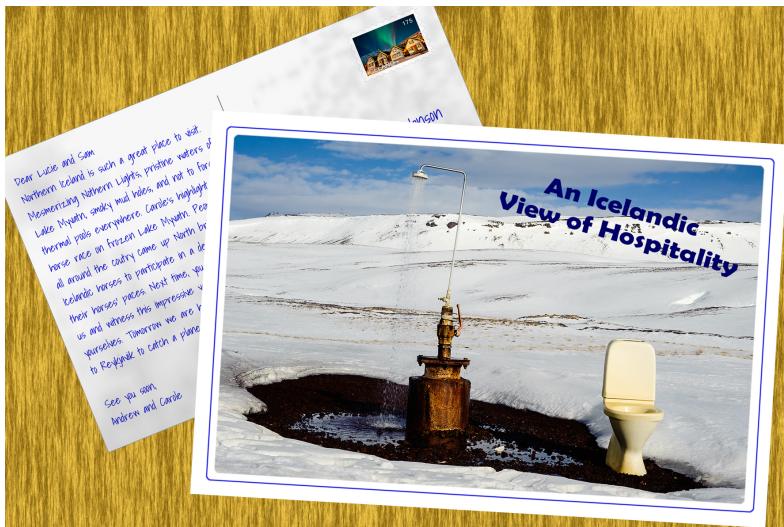


Figure 4.1: Rustic Icelandic hotel

great experience as well, namely a great, loud party until late at night. However, the night ended with both customer groups being unhappy, i.e. the hotel guests being sleepless and the party guests probably having to finish their party sooner than expected. How could this happen? The hotel serves as two service providers, a lodging provider and an event provider, and potentially runs two corresponding business units which operate rather independently. While both units are experienced in providing good services within their own domain, the trouble began when the event department contracted for a service that interfered with the service of the other unit. In other words:

- The business units operated in silos.
- They designed their services from their perspective instead from the customers.
- They did not put a proper mechanism in place to handle exceptions.

As an old consultants' wisdom says "perception is reality", i.e., the customer's perception of a service determines the level of experience gained from a service rather than the imagination of the service provider. Correspondingly, in this chapter we will discuss methods to deeply understand customers' needs and design services from their perspective aiming for an optimized service experience.

### Opening Case



## 4.1 Introduction

Based on the opening case and its analysis it can be conjectured that *service design* is about making (new) services work as properly and smoothly as possible, i.e. to operationalize them by laying out processes, defining roles, responsibilities, permissions, and prerequisites for the provision of a service. And in fact, as discussed later, this is an essential part of service design [2]. However, the concept of service design as it is used and researched today goes far beyond the operational aspect. So far, the story has emphasized aspects such as meeting customers' expectations, handling exceptions, and avoiding disappointments. But, designing a service to provide positive experiences includes the opportunity to delight customers, e.g. to offer more than they expected, or conduct a service in a more convenient way. Nowadays, the term service design is often used with a broader meaning. But, if service design is about improving or even creating new services in order to positively surprise customers, the terms *service design*, *new service development*, and *service innovation* start to conceptually overlap.

Hence, this section will shed some light on the definitions and key characteristics of service design and discuss its relation to the other two concepts. The following sections of this chapter will then introduce methods used for service design and tools that help applying these methods in projects.

### 4.1.1 Service Design

Service design consists of the two rather broadly defined terms *service* and *design*. Chapter 1 of this book already reflected on the various types of services and what people have in mind when talking about services. This leaves the second term, design, for discussion. Design is used in a broad variety of contexts such as the design of products, communication design, web design, software or IT-system design, and even (design) methods themselves. Furthermore, design is a verb describing a creative process as well as a noun describing the result of this process. Surprisingly or perhaps not surprisingly, given the variety of contexts, scholars struggle to agree on a shared definition for the term [3]. Hence, due to the context-bound nature of the term, subsequent focus lays on how the service community defines and uses the term service design.

Early publications on the topic of service design focus on the modeling and *description of services*, e.g., blueprinting of services [2]. Correspondingly, and similar to our discussion in the opening case, their definitions of the term service design emphasize the description of a service concept primarily through visualizations. Further definitions are broader and refer to the process of creating a concept for a (new) service including the early creative steps to come up with an idea for a new service [4]. Some authors from the late 1990s and early 2000s specify what a *service concept* should look like (e.g., [5, 6]). According to them the service concept ranges from customers' needs to operationalized action on how to address them.

**Definition — Service Concept.** The service concept describes in detail the needs of the targeted customers, what actions to take to meet these needs, and how to operationally implement these actions.

Since the first service design researchers originated from various design backgrounds, service design was influenced by a wide range of design disciplines. Therefore, the concept of service design became broader and recent publications define service design as the process of “systematically applying design methods and principles to the design of services” [7].

In an overview on service design as a field of research, Blomkvist et al. [8] point out that academics initially focused on putting service design in relation to their home disciplines and establishing service design as an own field of research. Meanwhile, research became much wider and deeper and now deals with service design itself, e.g., reflecting on underlying theories, exploring new design techniques, analyzing case studies, or moving towards product-service systems.

Given the diversity of the research field of service design, synonyms and variations to the term service design have emerged and are worth highlighting. Building on the close relation of service design and *design thinking* [9, 10] – a similar approach originating from product innovation – some authors have framed the term *service design thinking* [11]. Moreover, other researchers emphasize that investigating the needs of customers as well as provider-customer interactions may lead to more than just a good service process. It may also lead to insights about the physical environment, the service employees, the service delivery process, fellow customers, and back office support [12]. Thus, these authors framed the term design for services rather than service design [13]. However, this chapter uses the term service design.

**Definition — Service Design.** The systematic application of design methods and principles to the creation of service concepts for new or improved services (following [7]).

#### 4.1.2 New Service Development and Service Innovation

As the definition and current understanding of research imply, service design is about creating new or improving existing services. This raises the question how service design differs from the concepts of service innovation as well as *new service development* (NSD) - another term found in scientific literature addressing the creation of new services. Johnson ([14], p. 5) defines new service development as the “overall process of developing new service offerings”. To delimit the term NSD, the author refers to service design as specifying “the detailed structure, infrastructure, and integration content of a service operations strategy”.

**Definition — New Service Development.** Addresses the “overall process of developing new service offerings” ([14], p. 5).

Looking more closely at the NSD process shows that it covers all the steps of a classical innovation process, from idea generation to market introduction [15]. Service design on the contrary aims for a service concept and therefore overlaps only partly with the NSD process. What is more, service design primarily “contributes to service development in areas such as user orientation, contextualization, and design as a strategic instrument” ([7], p.342). While service innovation was initially seen as a process of service development [16], and therefore was highly overlapping with NSD, today service innovation has become more of a management discipline. As seen in the Chapter 3, recent service innovation literature covers a wide range of topics such as service specific challenges of innovation management, capabilities to sustainably innovate services or processes, and methods and tools for developing new services.

**R** Service innovation is the overall discipline dealing with the service specifics of innovation management. It includes new service development as the process of creating and establishing new services. Service design covers part of this new service development process and adds the specific perspective of designers to it (Figure 4.2).

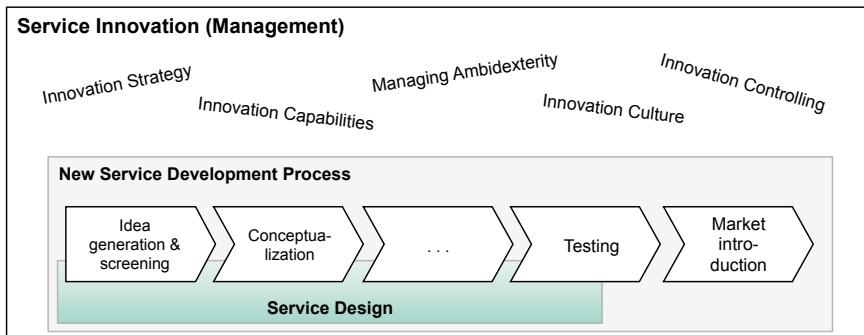


Figure 4.2: Schematic overview of service innovation, new service development, and service design

#### 4.1.3 Service Design Characteristics

The previous section introduced the three terms: service innovation, new service development and service design. One key differentiator between the new service development process and service design was the application of design methods and principles to the creation of services. This raises the question why the perspective of a (service) designer is so valuable for the development of new services.

*Service designers* aim to understand and improve service experiences by focusing on customers and their interactions with a service provider. In more detail, professionals agree on the following cornerstones ([11, 13, 17, 18]):

- Human-centric
- Interactive
- Holistic
- Iterative
- Prototype-based

Some experts emphasize further characteristics of service design which support and complement these five cornerstones. For instance, they point out the importance of working in interdisciplinary teams to accommodate a multi-perspective understanding of a service and its environment as well as receive a broader range of ideas for possible solutions. Furthermore, a visual description of the interactions between parties involved in a service, for instance, to ensure the right speed of service provision is considered to be a key element of service design.

### **Human-centric**

In companies R&D traditionally approaches innovation projects from a technology point of view and innovation departments apply a management perspective focusing on market niches, key resources of an organization, revenue models or whole business models. In terms of customers, it is common practice to define customer segments which are then used in the innovation process. Service design takes a slightly different but complementary approach: It looks at customers on an individual level rather than on a segment level. This means, service designers put themselves into the shoes of a customer or other stakeholders when creating new or improving existing services. Hence, if there is a “true north” of service design it is this paradigm of *human centricity*. Everything else feeds into this notion.

### **Interactive**

To put themselves into the shoes of other humans, service designers have a strong motivation for going out and working as *interactively* as possible with customers. As the subsequent sections will show, service designers leverage several techniques and tools to interact with and learn from people. The aim of this strong interaction is to understand how individuals perceive a service as comprehensively as possible. Asking and observing customers and engaging in their actions lead to valuable insights.

### **Holistic**

Furthermore, service designers want to understand customers or other stakeholders *holistically*. This takes place on two levels: first, the designers strive to go far beyond the typical demographics used for customer or stakeholder segments and see their representatives as individuals. Actors try to get an almost tangible picture

of the role they shall slip in. Designers want to reach a similarly deep understanding of the customers or stakeholders they look at, including their personality, their social environment and many more. Secondly, service designers try to understand the system a service takes place in as comprehensively as possible. Hence, they try to get a grip on all relevant settings, e.g., environment, service employees, or service delivery. With regards to the stakeholders, as discussed above, they are again seen from an individual point of view with their goals and driving forces.

### **Iterative**

Understanding humans on an individual level as well as systems a service takes place in can be complex. To address this complexity, service designers consider their work to be highly *iterative*, i.e., as an ever-learning cycle. The steps of understanding people and systems, ideating over new solutions, prototyping solutions, testing them with different stakeholders to gain feedback and learn from it, and again better understand people and systems are all applied from the very beginning of a project. Steps can be short and cycles can be extremely fast at the beginning, slowing down with the increasing maturity of the project.

### **Prototype-based**

Service designers use *prototypes* throughout the service design process. In fact, research shows [19] that they perceive prototyping as a core activity and use it for a range of purposes such as visualizing services, communicating about them, collaborating with users to explore important needs and the wider context of services, as well as evaluating ideas. Thus, service designers use prototypes for problem understanding at the beginning of the project to almost final prototypes for new services at the end. Throughout the process, the number and granularity of prototypes vary. At the beginning, many simple prototypes are used to gain more concrete input from stakeholders. Towards the end, less prototypes are used but with far more details to demonstrate a potential final service.

Prototypes are mostly thought of as physical drafts of ideas. Typical prototypes in service design often appear in the form of scripted stories, comic-like visualizations, or role plays. For many service designers, these kinds of prototypes pose many challenges. Among others, they report on difficulties with intangibility when prototyping social interactions, inconsistency between instances of role play, or unauthentic behavior of participants [19]. Researchers addressed to these challenges by building conceptual frameworks to gain a deeper understanding of the exact shortcomings of service prototyping and contribute to their enhancement [20].

#### **4.1.4 Designers' Skills**

Human-centricity and understanding customers (stakeholders) in a holistic way are two cornerstones of service design. The application of design principles and methods enables service designers to follow cornerstones. This raises the question why design principles and methods help us to take human-centric and holistic

perspectives. Recently, an increasing number of companies started to open design centers, even if they are not in a typical design business. What do they try to achieve?



Figure 4.3: IBM announces new design studio in Austin, TX

Having a closer look at the *curriculum* of a design study unveils that up-and-coming designers get trained in various disciplines to acquire *skills* that help them to better understand humans as individuals. As expected, and in line with the outlined cornerstones, the curriculum includes subjects like holistic thinking, interdisciplinary thinking, and various artistic methods. What is more, aspects of human sciences, social sciences, and psychology and related methods are taught. For instance, Meroni and Sangiorgi [13], amongst others, stress the importance of education in empathic design, experience design, and methods derived from ethnology, a branch of anthropology that studies people and the relationship between. Related methods include the observation of people, the documentation of their behavior, and their social structures. Based on these disciplines and their methods, designers develop capabilities to have a closer look at humans, to document their observations and retrieve interesting findings from them. While not all of those various disciplines and their methods can be covered in detail in this chapter, a selection of popular approaches will be introduced in the following section.

## 4.2 Design Process

The literature provides several *service design processes* which differ in terms of number of steps as well as wording. However, on a higher level the processes show many similarities. This book builds on the four high-level steps of the service design process by Mager and Gais [18]. With regards to the detailed activities taking place in each of these phases, input from several authors is considered to ensure a more comprehensive picture. Thus, as shown in Figure 4.4, the service design process consists of the four iterative and highly interconnected phases *exploration*, *creation*, *reflection*, and *implementation*. Each of these phases, their key steps as well as the interaction between them is described in detail below. Additionally, Table 4.1 provides a schematic summary of the service design process including an overview

of typical activities for all phases and steps as well as common methods.

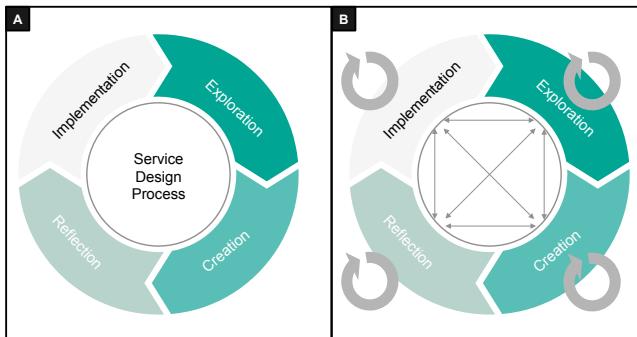


Figure 4.4: The high-level service design process (adapted from Mager and Gais [18])

### Exploration Phase

Service design projects typically start with an extensive *exploration phase*, during which the designers focus on: (1) better understanding and (re-)framing the challenge they have been given; (2) investigating the perspectives of the involved humans in detail; (3) deciding which of the gained information needs to be considered in the subsequent phases; and (4) optimizing their team and methods to solve the challenge. While the last two are fairly straightforward, there is a strong emphasis on the first and second step, i.e., identifying the real challenge and better understanding the humans with their emotions and needs. For the first, design teams often create a so-called design space map as well as a stakeholder map. The design space map is a visual representation of the challenge depicting everything related that might be relevant throughout the project. The stakeholder map as well as some of the methods applied to address the second step will be explained in detail in this section. In fact, these initial steps are one of the key differentiators of the service design approach from classical new service development (NSD) processes, such as the one of Scheuing & Johnson [21]. While their NSD process starts with the formulation of objectives, reflecting on a given strategy, and then generating ideas for solutions, the designers question the actual challenge and put a lot of effort into understanding it more deeply before starting with the creation of ideas [11].

### Creation Phase

After the exploration of the challenge and the humans involved, the *creation phase* starts and involves the generation of ideas for solving the identified challenge is due. This means to (1) ideate on solutions for the challenge, to (2) conceptualize those ideas, as well as to (3) assess and select ideas to pursue on. With regards to ideating, designers apply a mix of classical brainstorming methods, foresight

methods – to go beyond the obvious and design for the future – for examples see the Chapter 3 on Service Innovation), and role-play like approaches to maintain the human centric perspective during their creative phase. Conceptualizing the ideas is almost inseparably bound to the first step. Since service design aims to make concepts as tangible as possible, the creation of prototypes during as well as after the ideating step becomes critically important. Typical kinds of prototypes generated during the ideation and conceptualizing steps include mock-ups (often made of paper), comic-like story boards, or role plays. In fact, and as a side note, service designers often already employ simple prototypes in the exploration phase engage in more concrete discussions with stakeholders and to gain richer insights. Assessing and selecting ideas involves the identification of complementary ideas and their aggregation into bundles. The film industry may serve as an analogy for this: ideas for characters, actions, stage scenery, etc. get compiled to film sequences which then get integrated into an overall storyline. Similarly, service designers form alternative service episodes out of the many ideas they have created and conceptualized earlier on. Using intensive feedback from customers and other stakeholders, these alternatives then get evaluated and prioritized. The most convincing sequences are pursued.

### **Reflection Phase**

So far, all steps have been undertaken from a customer experience and perception point of view without considering the feasibility of ideas generated. Hence, in the *reflection phase* the feasibility and fit lenses are applied. This involves an assessment of the technical, legal, and financial feasibility as well as the fit to the service provider's strategy and potential other service offerings. For this, classical instruments such as business cases or SWOT analysis are typically applied. Therefore, the reflection phase has a filter function. However, amongst service designers it is a common practice to take some of the ideas considered to be “totally unrealistic yet very persuasive if implementable” and elaborate more deeply on them. Sometimes these types of ideas are referred to as dark-horse prototypes due to their mystic and unpredictable character.

### **Implementation Phase**

While the previous phases have primarily dealt with generating ideas for services from a customer perspective and evaluating their general feasibility, the service is yet to be implemented in detail – in particular from an operational perspective. This is done within the *implementation phase*. This means, the service provider has to conceptualize the service including all aspects from the targeted service experience on the customer side to the organizational and technical processes inside the organization that ensure the service experience. One of the most frequently used methods for this is service blueprinting.

### Process execution

Although the outlined process looks linear, professionals from academia and practice emphasize its highly iterative character – if not to say sometimes chaotic. Within each phase the steps are conducted iteratively. Likewise, the phases are implemented iteratively and, what is more, jumps between steps of the various phases are common practice (Figure 4.4.B). For instance, the findings derived from identifying customers' needs in detail may change the formulation of the challenge, or the discussion of the prototypes with customers during the creation phase may uncover needs that require to go back to the exploration phase.

 Service design processes are highly iterative – within each of its phases as well as across the various phases.

In service design projects the initial exploration phase receives a strong focus and takes a significant amount of time. Also, this is where the service design approach differs the most from more classical service innovation or new service development processes which often start with idea generation.

## 4.3 Design Methods

This chapter introduces key *design methods* primarily used in the exploration phase of the service design process, namely, the *stakeholder map*, the *persona* concept, and the *customer journey map*. These methods will demonstrate how to better observe and interpret humans' needs, visualize, and choreograph what others cannot see, and observe services from the perspective of experiences. In addition, *service blueprinting*, one of the founding methods of service design from the early 1980s, is explained to address the objective of operationalization the service provision. Notably, many of the presented methods can be tailored to a specific project context. According to Hollins and Hollins [22], who call service design a *practical craft*, the methods can be tailored to the specific project situation, i.e., they are themselves subject to prototyping.

### 4.3.1 The Stakeholder Map

At the beginning of a project, service designers aim to get a grip on the issue to solve. For this, they visualize all information and questions they perceive as relevant to approach the given project in a map. As a team, the designers strive for a common understanding of the overall challenge, its related sub-challenges, main impact factors, etc. Gray et al. [23] call this type of visualization a *context map* and give instructions on how to create it in a workshop-like setup. Amongst practitioners this map is sometimes also called a *design space map*. Notably, this map is maintained throughout the whole design project, i.e., the team regularly uses it to reflect on a given challenge, to question it, and potentially redefine it. One key

Table 4.1: Characteristics of the phases of a service design process

Phase	Step	Objective	Typical activities	Methods (examples)
Exploration	Understand challenge	Understand and (re-)frame the challenge	Frame the actual challenge or problem Identify impact factors and stakeholders	Design space map Stakeholder map Janus Cones, Context Map Customer System Persona A day in a life
	Investigate humans	Understand the customers, further stakeholders and the service environment	Identify customers' needs, requirements, and demands Identify touchpoints between provider and customer Assess the overall experiences made by customers as well as their development over time Assess the service from the perspective of the provider and other stakeholders	Shadowing Observe, interview, engage with customer Empathy map Customer journey maps
	Set focus	Synthesize the findings from the discovery phase in order to facilitate the subsequent creation phase	Analyse the environment Identify initial options for improvement Aggregate and abstract the data points found Identify core findings and room of further action	
Setup Project	Setup the project for success		Form the right teams Create or tailor methods/tools	
Creation	Ideate	Enable radical and outside the box thinking & ideas	Conduct divergent activities oriented towards the far future Open approaches: Involve employees and customer	Creativity methods Value curve methods Co-operation model Service theater (enacting)
	Conceptualize	Detail out a service concept from an experience perspective	Create low-resolution prototypes (often made of paper) to discuss functionality with customers / stakeholders rather than graphics	Mock-ups Prototypes Storyboards
	Assess & Select	Reduce the amount of ideas to follow up with	Compile alternative service episodes based on ideas and test them with customers and stakeholders	Story-telling Request customer feedback
Reflection	Explore feasibility and fit of the service		Compare to existing portfolios and strategies	SWOT analyses Business cases Customer acceptance tests
Implementation		Detail out a service concept from an operational perspective	Organization-, process-, and (IT-)technology-specific competencies	Service Blueprint High-resolution prototype Graphical design Business Model Canvas

aspect of the context map is the identification of critical stakeholders that need to be taken into consideration.

**Definition — Stakeholder.** “A stakeholder [...] is [...] any group or individual who can affect or is affected by the achievement of the firm’s objectives” [24].

Freeman ([24], p. 46 & 54) refers to a stakeholder map as a (visual) representation of groups or individuals who either affect or are affected by an organization’s objectives.

**Definition — Stakeholder Map.** A stakeholder map for a service design project is a visual representation of groups or individuals who either affect or are affected by an organization’s objectives naming the stakeholders and showing essential relations between them (based on Freeman [24]).

Hence, to create a stakeholder map, service designers need to undertake two essential steps:

**Identify stakeholders** Initially, relevant stakeholders need to be identified, if necessary grouped, and positioned onto the map. Naming stakeholders is a rather challenging task. Stakeholders can be classified into primary stakeholder, i.e., those groups without whose participation an organization cannot survive, and secondary stakeholders, i.e., those groups who have mutual influence with the organization but are neither critical for the survival of the organization nor do they engage in transactions with it [25]. At a high level, many stakeholder groups, in particular the primary stakeholder groups, might be named quite easily, e.g., customer, suppliers, and investors. However, for the service design process a more detailed level of granularity is needed. Hence, service designer spend significant effort on uncovering important yet not obvious stakeholders. For instance, they think of experts, skeptics, extreme users, misusers, early adopters, and many more. In Chapter 3 (Service Innovation), the customer system tool introduced can help service designers to think of different customer roles, i.e., buyer, user, and influencer.

**Draw relations** To complete the stakeholder map, relations – or *mutual stakes* – between the various parties (stakeholders) need to be visualized as well. There are many perspectives on what a stake is and how to categorize stakes, e.g., owning equity, economic impact, and political influence. In practice, for the sake of simplicity and overview, service designers tend to represent all types of stakes between stakeholders as arrows in the map and simply label arrows in natural language rather than category names.

Similar to a context map, the stakeholder map is created at the beginning of a service design project and is maintained throughout its whole lifecycle.

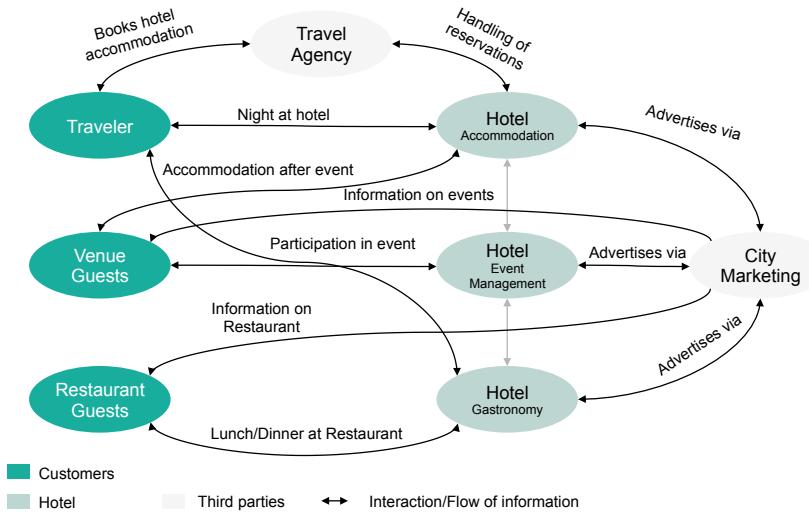


Figure 4.5: An example of a stakeholder map for the opening case

### 4.3.2 The Persona

The stakeholder map provides an overview of the most critical groups to consider during a service design project. Nonetheless, the names of the groups and their most essential relations to other domain players do not yet allow designers to step into the “shoes” of individuals of these groups and view the world as they would do it, i.e., to act human-centric.

The *persona concept* stems from Human-Computer Interaction (HCI) research [26, 27, 28] and helps to bridge the gap between more abstract customer segments and the aim to design from the perspective of an individual. For each stakeholder group of the stakeholder map, one or more archetypical representations are created. Rather than simply aggregating the typical requirements and characteristics of a stakeholder group, a persona is an almost real, typical yet individual description created to represent a group.

**Definition — Persona.** A persona is a “fictitious, specific, concrete representations of target users” that puts “a face on the user - a memorable, engaging, and actionable image that serves as a design target.” [27, p.11].

One can think of a persona as a role in a theatre play. Similar to an actor, service designers can slip into this role or can engage in dialog with it. In terms of creating a persona, Cooper [26, p.123] emphasizes that they are rather discovered by thorough investigation than being made-up. To make the persona more “relatable”,

it gets a fictional name, personal information, and a picture, though. Regarding the information retrieved from investigation, demographic information, e.g., age, gender, marital status, children, relationships, level of (available) income, and level of education provide a factual basis.

Furthermore, context-oriented information related to the service design challenge needs to be added to the persona. This, for instance, includes requirements, needs or wishes the persona typically expresses. To gain an even more personal and holistic picture, softer information is added such as a description of the persona's personality including character, beliefs, life mottos as well as feelings and mood. This type of information may help to uncover less obvious needs or underlying motivations of the persona. Creating an empathy map [23] helps to generate some of this information. This approach suggests reflecting on how a person perceives a certain situation, i.e., what the person thinks, sees, says, does, feels, and hears [28].

**R** The objective of using a persona in a service design project is to: (1) understand behavior, needs, and preferences of typical representatives of stakeholder groups; (2) make the underlying motivations clearer; and (3) enable service designers to put themselves into the personas' shoes when analyzing situations and creating solutions.

Persona: Andrew Thompson	
 <p>Nationality: British Residence: Brighton, UK Age: 47 Marital status: engaged Children: none Occupation: IT Project manager at a bank Hobbies: Travelling, Photography Income: £ 75,000+ Education: MBA from LBS</p>	<p><b>Needs, Requirements &amp; Wishes</b></p> <ul style="list-style-type: none"> <li>Holiday in pristine nature</li> <li>Great scenery to take photos</li> <li>Contact to the locals to learn about culture &amp; heritage</li> <li>Quiet nights in hotels to seize as much as possible of every day</li> <li>Indulges a bit of luxury to relax from work</li> <li>Values good food</li> <li>Loves reading</li> <li>Wants to spend time with his spouse away from masses of people</li> <li>As organizer of the trip things should work as planned</li> <li>The holiday was a present for his spouse</li> </ul> <p><b>Personality, Character, Beliefs, Life Motto</b></p> <ul style="list-style-type: none"> <li>Hard working</li> <li>Generally friendly, as long as common sense is not violated</li> <li>Seeks new, inspiring experiences that encourage to question the status quo</li> <li>Slightly extroverted</li> <li>Value for money: Happy to spend money if the value is promising</li> <li>Reliable person who expects reliability from others</li> <li>His opinion is heard and valued by others</li> <li>Beliefs: People are good, friendly, and honest but sometimes just not clever enough</li> <li>Life Motto: "I seek inspiration everywhere"</li> </ul>

Image courtesy of stockimages / FreeDigitalPhotos.net

Figure 4.6: An example of a persona from the opening case

Notably, templates for personas vary dramatically based on the project they are applied to and the preferences and experiences of the designers. Three critical success factors for the implementation of the persona concept emerge:

- The customization of the template to use in a service design project is crucial. Depending on how a project develops, additional or different information which was not expected at the beginning, is required.
- Over the course of a project a persona will mature in terms of its description. The information gained over time needs to be reflected and incorporated into the persona. This will make it more real and complete. Hence, creating a persona is an iterative, evolving process.
- Practitioners report about the importance of treating a persona like a project team member. The physical representations of the persona, such as posters in the project room, role plays or even dolls at the meeting table, support the designers endeavor to put themselves into the shoes of the personas.

### 4.3.3 The Customer Journey Map

The methods outlined so far enabled service designers to step into a persona's shoes. Now, an approach is needed to help the service designer to walk in those shoes and capture what they see with the persona's eyes. For this, the idea of a *customer journey map* — a visual representation of a service customer's experience — is used.

**Definition — Customer Journey Map.** “A customer journey map provides a vivid but structured visualization of a service user's experience” [11].

According to Zomerdijk and Voss ([29], p.74), it “involves all activities and events related to the delivery of a service from the customer's perspective”, and – as nicely phrased by one of their interviewees – it is used to understand the behavior, feelings, motivations, and attitudes of customers throughout the journey.

Structurally, customer journey maps are closely linked to the key concepts service episodes and service encounters (see also the Chapter 8 – Service Co-creation). Services comprise several episodes with a defined start and end points, and consist of several encounters, i.e., interactions between a service provider and a service customer [30]. In our hotel opening case, “booking a hotel room” or “staying at the hotel” are examples of episodes of the service “hotel visit”. Check-in, ordering a drink at the bar, or check-out are typical encounters of the episode “staying at the hotel”. A customer journey visualizes a service with its episodes (also referred to as *phases*) and encounters (often called *touchpoints*).

There are no standards in terms of what a customer journey looks like and thus, as Figure 4.7 shows, many different templates are used. Nonetheless, based on the analysis of several case studies, Voss and Zomerdijk [12] identify the following commonalities of the various customer journey maps:

**Perspective** The customer and customer's experience play the central role in a customer journey. The focus is on the customer perspective. Operational aspects of the service provider beyond the direct interaction with the customer

are not displayed in the map.

**Touchpoints** The elements and actions depicted in the customer journey map are touchpoints between the customer and the provider, i.e., every situation where a customer gets in touch with the provider. Touchpoints range from hearing the provider's name (e.g., by word of mouth) to interactions during the actual service provision.

**Timeframe** As the variety of touchpoints suggests, customer journeys start long before the service takes place and end after it is provided. Thus, the timespan to consider for service design is questioned and, most likely, extended compared to the limited perspective on direct interactions between customers and service providers.

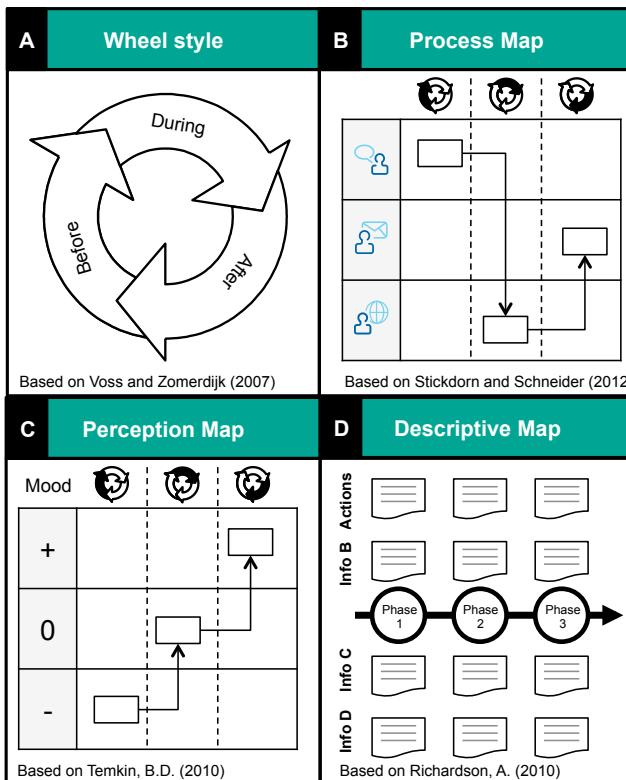


Figure 4.7: Schematic representations of customer journey maps

However, until today, the customer journey map is subject to experimentation and further development by many professionals from academia, consulting, and

industry. The development and usage of a customer journey map involves: *identify persona*, *frame the timespan*, *envision journey*, and *evaluate journey map*.

### **Identify Persona**

A customer journey map is the visual representation of a specific service customer's experience. Thus, determining one of the previously defined personas as the customer whose perspective to take is the initial step to create a map.

### **Frame the Timespan**

Voss and Zomerdijk [12] pointed out that the timeframe covered by a journey exceeds the duration from sales to provision of a service. Hence, when is a journey supposed to start and when is it supposed to end? As the journey incorporates all touchpoints between the customer and provider, one might start the journey with the customer recognizing the provider or its name for the first time. However, this would still be a provider-centric mindset to a certain extent. In fact, following this idea, important steps might be missed. The guiding question should rather be when does the customer recognize a requirement for the first time that may result in demand for a service? This may be long before a provider's name even crosses the customer's mind.

To give an example, people who consider buying a house or an apartment typically get motivated by events such as moving to a new location or seeing friends buying a house. They probably start asking themselves whether buying a property is a good idea. Walking around looking at other people's houses more reflectively might be the next step before they start screening the Internet for real estate prices in their region and comparing them to their personal financial situation. From the perspective of a real-estate agent or a bank most of the steps may have taken place long before the customer comes across their names or offers. However, supporting people in early phases and providing guidance might be an opportunity for extending their business. These opportunities can be seen as potential touchpoints for a provider. To summarize, the intention of a customer, when it starts and ends, is what should determine the timeframe of a customer journey rather than existing touchpoints with a provider. Once the timeframe is determined, it is recommended to split it into phases to further develop the journey.

### **Envision Journey**

With a persona, a timeframe, and phases at hand, the service designer can conduct the mapping of the customer journey, i.e., walking in the persona's shoes and visualizing its experiences. In line with the service design cornerstones, this process is of iterative nature. Designers alter between:

1. Anticipating the persona's steps, behavior, and emotions.
2. Observing, interviewing or engaging with real customers who are similar to their persona to gain additional information.

### 3. Abstracting from the gathered real-world data.

For the second step in particular, learning from real customers, service designers draw from a broad set of tools. *Shadowing* customers in terms of immersing into their world, documenting their behavior on video, photo, recordings, notes, etc. to learn from them is one of those tools. Another popular tool is called *a day in a life*. It is quite similar to the shadowing tool and works with the same recording devices. However, the focus is a typical day in the life of a person rather than how a person experiences and behaves with a particular service. Thus, this tool is particularly strong in enabling designers to understand a typical day in the life of a person as an environment for the service. For instance, if service designers want to find out when a particular service is least disturbing for a customer, knowing the typical patterns in his daily life can be crucial.

All gathered data is then mapped onto a canvas, the customer journey map. Since all services with humans as customers entail an experience on their side, keeping track of the emotions that contribute to the overall service experience of the customer are worth recording. Thus, the perception map (see Figure 4.7.c) showing the mood level associated with each touchpoint is a strong visualization. Connecting the touchpoints sequentially supports the impression of a journey. Additional text on aspects such as *obstacles to continuation* or *motivation to proceed* may complement the map (Figure 4.8).

### Evaluate the Journey

By building a persona, the service designer learned a lot about its personality and needs. Generating a journey map as outlined in Figure 4.8, from the perspective of this persona, uncovered the persona's emotions and overall experience based on its needs. From analyzing the emotions and further information provided by the journey map, the persona's needs, motivations, etc. can be better understood and prioritized. For this, a framework like Kano's model of customer satisfaction (Figure 4.9) comes in handy [31, 32, 33]. Concrete representations of needs are requirements. While needs are relatively stable, requirements, i.e., how and to what extend a need should be satisfied, may vary.

Kano et al. suggest there are requirements which customers express explicitly – subsequently called type 1 requirements. With regards to the tourist from the opening case, this would be “a hotel room for x nights including breakfast”. However, there are also requirements that typically are not expressed explicitly but considered to be obvious: requirements of type 2 in Figure 4.9. For the traveler, this would have been – for instance - a clean and quiet room. A customer cannot be positively excited by fulfilling these requirements since they constitute what was taken for granted. However, as seen in the opening case, if any of these requirements are not met, satisfaction drops dramatically.

Finally, there are requirements of type 3, which a customer does not expect to be fulfilled. However, they provide an opportunity to delight a customer. In hotels,

complementary upgrades, free pralines in the room, an invitation to a get-together, etc. belong to this category. Notably, no matter how well a provider serves type 3 requirements, if he misses out on type 1 or – in particular – type 2, the overall experience will suffer dramatically. As a side note, type 1, 2, and 3 have received several names in literature such as one-dimensional, or key (type 1), must-be or hygiene requirements (type 2), and delighters, motivators, or attractive requirements (type 3). This chapter stays with the neutral terms type 1 to 3.

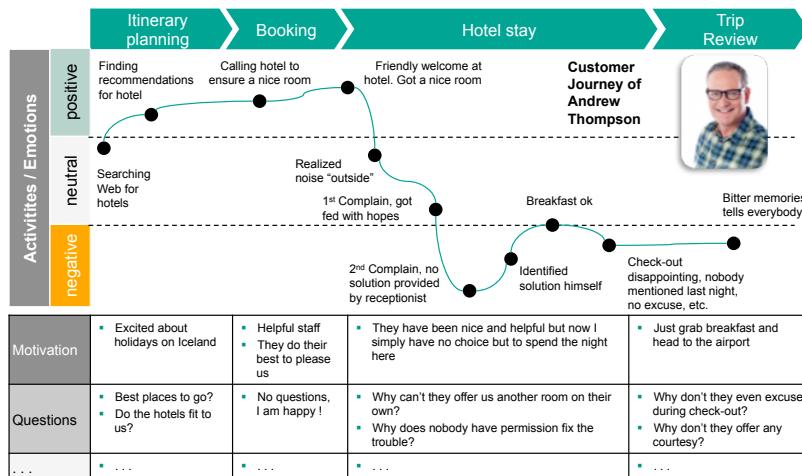


Image courtesy of stockimages / FreeDigitalPhotos.net

Figure 4.8: An example of a customer journey map for the opening case

With regards to evaluating the customer journey map, service designers reflect on the shape of the journey, i.e., what it looks like overall, how many touchpoints are positioned in the negative emotions zone, what types of requirements were violated that made the persona perceive a given touchpoint negatively. In addition, designers question what it would take to change the shape of the curve, to move up the experience made at specific touchpoints from a neutral to a positive level. In a nutshell, each touchpoint as well as the journey's shape provide opportunities for innovation [12].

Remarkably, the customer journey approach can be applied to a given situation as well as – hypothetically – to an idea for a new or changed service. In the latter case, it can facilitate a comparison of the original state of the service with the expected impact of a design change.

As seen, the customer journey map enables to visualize the customer experience when interacting with a service. Taking the inspiration from the journey, possibly reframing the project's challenges based on the findings from the journey, and then ideating on how to improve or overturn the service are the next logical steps.

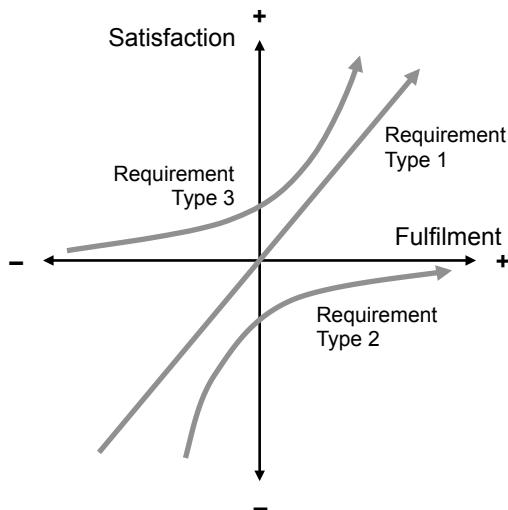


Figure 4.9: A model of customer satisfaction (based on Kano et al. [31])

However, the steps outlined primarily cover the customer perspective. No matter how compelling ideas for a new service experience might be, feasibility needs to be ensured, i.e., the service needs to be operationalized on the provider side. For this, service blueprinting comes into play.

#### 4.3.4 Service Blueprinting

*Service blueprinting* is a simple method to identify and describe the processes that support services. While the Karni and Kaner approach presented in Chapter 1 looked into a service as a system composed of many components (e.g., inputs, outputs, environment, and resources), blueprinting looks mainly at service processes and their activities.

**Definition — Service Blueprinting.** A technique to help organizations understanding their service offerings and delivery processes by enabling to examine service processes from a customers point of view.

The output of service blueprinting consists of a graphical representation of a service process as shown in Figure 4.10. This example corresponds to the service blueprint of a typical hotel stay. It identifies process activities, the interaction points between the customer and the service provider, and the roles of customers and employees. In more details, the process describes the management of the life cycle of a overnight stay, which includes activities such as check in, registration, food

delivery, and check out.

**R** Service blueprinting was introduced by Shostack in 1984 ([34]) and has its origin in service quality, customer experience, and customer satisfaction research.

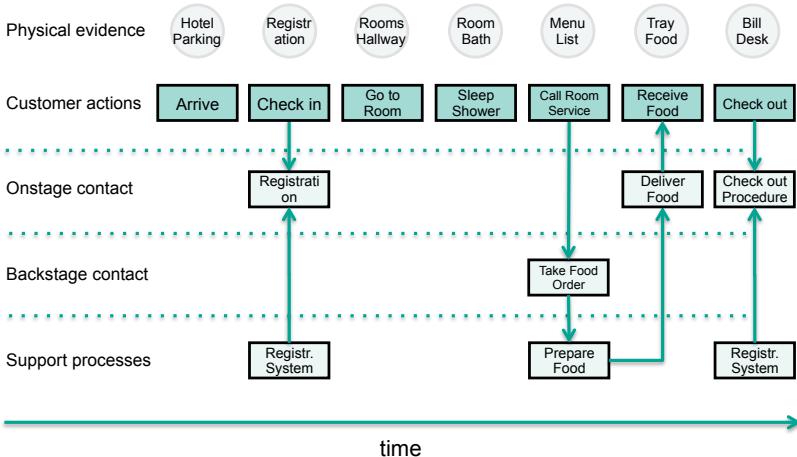


Figure 4.10: An example of a service blueprint modeling a typical overnight stay at a hotel. Rectangles represent activities which together, with edges, form a service process

### Benefits

The benefits of service blueprinting are wide-ranging. Organizations are able to make explicit how services are provisioned to customers. Benefits range from fostering innovation, quality management, training support, to efficiency improvements, and to service standardization:

**Innovation** Service blueprinting is a planning and analysis tool which can be used to develop new innovative services as well as for improving existing ones. The processes and activities identified can provide the grounds to discover areas for innovation and suggest ways to customize services to address niche markets with specific needs.

**Quality** The graphical representation of processes enables to quickly identify possible failure points. This provides managers the facts and the possibility to redesign procedures leading to an increased customer satisfaction. Over time, it becomes possible to develop operating procedures with a proven high quality.

**Training** Detailed descriptions of service designs provide an important documentation which can be used during the training of new employees. Staff can

grasp and understand *who* executes *which* activities, and *when*.

**Efficiency** The visual representation of processes provides the opportunity to parallelize the execution of activities to reduce the time to complete services. It also enables to highlight which activities are fundamental, optional, and which should be adapted to better satisfy customer requirements.

**Standardization** The codification of the knowledge associated with the operation of services enables to identify best practices which can lead to the creation of organizational standards. Once identified, golden service blueprints can be distributed and implemented at several locations, ensuring a consistent service quality.

In practice, service blueprinting is used by process managers and service designers to conceive how a service will work. Service managers, and employees in general, can use service blueprints as a guide to operate services on a daily basis. While service blueprinting has many benefits, one disadvantage is that it typically looks at processes from a managerial perspective and process orientation rather than a customer perspective.

### Structure and Components

A blueprint consists of a *structure* and several *components* as illustrated in Figure 4.11. The structure can be viewed as a two-dimensional structure: the vertical axis provides several *swimlanes* which identify various areas of action and the horizontal axis identifies the timeline of activities conducted by the customer and service provider.

A blueprint has five main vertical components: four swimlanes separated by what is called a line, and a special area capturing any physical evidence of the occurrence of customer actions:

**Physical evidence** are identifiable and visible outcomes that result from executing activities. It is a way to recognize that a service exists and that also attests the progress of a service delivery process. For example, the registration desk, a central point of contact between service providers and customers where requests can be made, is a physical evidence of the service.

**Customer actions** are the steps that customers are required to take as part of the process of service delivery. They are drawn sequentially from left to right and are located above the *line of interaction* which separates the interactions between customers and providers. For instance, to request for a specific service, customers know that they must make a phone call, send an email, or go to the service/registration desk.

**Onstage contact** are activities taken by employees that are visible to customers as part of the service process. Therefore, they are located above the line of visibility. Every time the customer and provider interact, the line of interaction is crossed and a *moment of truth* occurs. For example, when

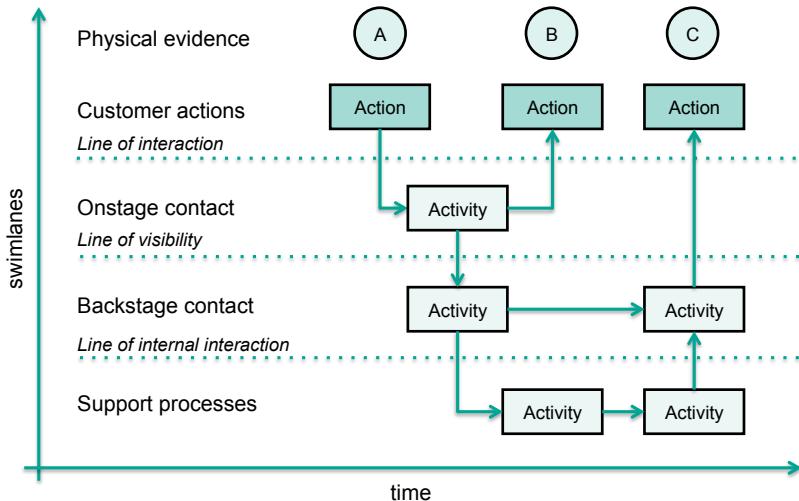


Figure 4.11: The structure and components of service blueprints

a clerk receives a request from a customer, the first step is to register the request with the management systems. Then, the request is categorized and prioritized for a better utilization of the resources and the support staff time.

**Backstage contact** are activities taken by employees that are not visible to customers. They happen behind the scenes to support onstage activities. The line of internal interaction separates the onstage contact employee activities from support processes and activities. For example, the staff that takes a food order by phone may not be visible to customers. In such a case, they are classified under the label backstage contact.

**Support processes** are activities carried out that are not directly related to a particular customer but that need to exist for a service to be delivered. Thus, they are located below the line of internal interaction. For instance, the activity registration calls for a support process managed by an information system which will determine if the record of a customer already exists, what are his preferences concerning the view of the room, and what rooms are available.

While the four lanes that decompose a service delivery process are kept physically separate, they are connected by channels of communications.

### How to Develop a Blueprint

The process of building a service blueprint can be decomposed into six distinct steps [35]:

1. Identify the service to be blueprinted.
2. Identify the customer or customer segment target for the service.
3. Map the service process from the customer's point of view.
4. Map contact employee and/or technology activities.
5. Link contact activities to the required support functions.
6. Add physical evidence of service delivery at each customer action.

The first step to develop a service blueprint consists in identifying the service to be blueprinted. Services may need to be prioritized to select the most important services to model or to start by modeling the most simple ones to gain experience with the technique. Identifying the segment which represents the target customer(s) of the service, is the second step. There is often no “one-size-fits-all” solution when developing services which bring a high level of satisfaction to customers. When too many distinct customers are considered, it becomes difficult to take design decisions.

Once services and customers are identified, the actual service blueprinting starts. Two activities are executed: map the customer's process and map the service providers' own processes. Reconstructing or finding how providers' processes operate is not always an easy task, especially when complex information systems, such as enterprise resource management systems, are involved. Afterwards, the fifth steps links contact activities to support activities.

Finally, the physical evidence and tangible aspects of a service are added to customers' contact activities. In this step, as well as in step two, blueprinting requires designers to consider the manner customers experience service delivery since designers are most likely not part of the customer segment under study. In other words, designers should replace their perceptions of the service delivery by what is important for customers.

### **Other Modeling Approaches**

Modeling is a common activity in organizational settings. Business models, process models, and enterprise architecture models are frequently used to create abstract representations of important organizational artifacts. Service blueprinting is also a modeling approach but compared to other initiatives – which place emphasis on a formal control-flow (e.g., business process modeling) or provide a wide view on organizations (e.g., Zachman framework) – service blueprinting focuses on the customer processes which are identified first. All the other tasks are then defined so that they support the value proposition offered to customers.

#### **4.3.5 Design Tools**

Figure 4.12 and Table 4.2 provide examples and an overview of resources on the internet to learn more about service design, engage with the service design community, and support the creation and maintenance of some of the maps outlined

in the chapter.



Figure 4.12: Popular web sites with information about design tools

Resource	Description
<a href="http://service-design-network.org">service-design-network.org</a>	Professional society of service designers; editor of the service design journal “Touchpoint”.
<a href="http://servicedesigntools.org">servicedesigntools.org</a>	An open collection of communication tools used in design processes, build, and maintained by the Politecnico di Milano.
<a href="http://usability.gov">usability.gov</a>	Web resource on best practices and guidelines for user experience including overviews of related disciplines. Provided by the U.S. Department of Health and Human Services.
<a href="http://innovationgames.com">innovationgames.com</a>	Innovation games provides some service design tools such as the empathy map as online facilitation tools.
<a href="http://thisisservicedesignthinking.com">thisisservicedesignthinking.com</a>	Website to the book “This is Service Design Thinking”. The website provides free templates in several languages.

Table 4.2: Overview of web sites to service design tools on the Internet

Portals providing service design tools are subject to constant change. Hence, the links provided are only an excerpt of what is available on the Internet.

## 4.4 Conclusions

Service design is the process of systematically applying methods and principles to the design of services. The focus is on the *process*. Design experts and professionals agree that a process must be human-centric, interactive, holistic, iterative, and makes use of prototypes. A typical design process starts with an exploration phase, which identifies the challenges and the humans involved. The second phase, the creation phase, generates ideas for solving the challenges. Afterwards, the reflection phase will make an assessment of the technical, legal, and financial feasibility of the ideas. Finally, the last phase, implementation, will build a service from an operational perspective.

During each phase, the design process relies on the use of methods that assist service designers to capture information using various lenses. Well-known methods include stakeholder maps to represent groups or individuals who either affect or are affected by an organization's objectives; personas which enable to understand customers' goals and behavior patterns; customer journey maps, which illustrate the steps customers go through when participating in service delivery; and service blueprinting, which describes graphically the processes, activities, and physical evident of services' interactions that occur during service provisioning.

## Review Section

### Review questions

1. Remember a disappointing service situation you experienced yourself and reflect on why you were disappointed. What was worse, the fact that something went wrong or the way the service provider reacted to your complaint?
2. What could the service provider have done to fix the issue in a satisfactory way? Do you see a possibility how a service provider could turn the unlucky accident into a positive experience for the customer?
3. What types of education that business students as well as technical students typically do not receive do bring designers to the table when it comes to designing a service?
4. As discussed in the chapter there is no standard template for a persona. What pieces of information would you include in your template and why?
5. Where exactly do you see a difference between the typical description of a customer segment and a persona? What do you reckon is the ratio between a customer segment and the number of personas needed to represent the segment? Is it 1:1?
6. What are the pros and cons of the various customer journey maps as shown in Figure 4.8?
7. Can you think of any downside of deriving ideas for innovations from the customer journey?

8. Thinking about the Kano model, do you expect the association of a requirement to type 1, 2, or 3 to be stable over time?
9. Explain how service blueprinting achieves the following goals: map the value exchanges and identify touchpoints; explain the interactions between customers and provider's staff; and expose how interactions are supported by backstage activities.
10. Self-service technologies are technological interfaces that enable customers to co-produce services without a direct employee involvement (e.g., ATM, gas pump terminals, and hotel check out kiosks). Can blueprinting also be used to model the services provided by self-service technologies? If the modeling is feasible, explain any adaptation that needs to be made to the method. Otherwise, justify why blueprinting is not adequate to use with self-service technologies.

## Project

As a challenge, imagine you were asked by your local public transport company to overturn ticket sales. Try to improve the existing ticket sales process or develop a new one by applying service design methods. Start by building a team of three to five students, conduct a short workshop, and brainstorm on ideas for an improved ticket sales process.

Next, put those results aside and start applying the service design methods: sketch a stakeholder map for your challenge. On the customer side there may be the young Generation-Y student, the pensioner, the business person, or a parent with kids. Can you think of other typical customers? What are further stakeholders do you see, who are not customers? After drawing the stakeholder map, pick two types of customers and try to create a persona for them. Try to make them as real as possible without exaggerating or even turning them into ridicule. Start building the personas in a brainstorming session at your desk. Then go out, observe, and interview people who are similar to your personas and incorporate your observations into the persona maps. How did the picture of the personas change during this exercise? Did they get richer? Did some of your clichés of a persona turned out to be wrong?

For both of your personas start creating a customer journey map for the existing ticket sales process as outlined in the chapter. Take a camera or your smartphone, go out, observe, and interview people alike to your persona. Pay attention to the timeframe you cover in your journey map. After completion and review of the journey maps start generating ideas for improvement of the ticket sales process again by conducting a brainstorming workshop.

Finally, take out the idea map you generated at the very beginning and compare it to the result of your second brainstorming session. How do they differ?

## Key terms

**Service Concept** The service concept describes in detail the needs of the targeted customers, what actions to take to meet these needs, and how to operationally implement these actions.

**New Service Development** Describes the process of developing a new service from the early development stages to its market introduction.

**Service Design** The systematic application of design methods and principles to the creation of service concepts for new or improved services.

**Stakeholder Map** A visual tool that allows to represent groups or individuals who either affect or are affected by an organization's objectives, their level of commitment with the organization, and their relevance to the organization.

**Persona** A fictitious representation of an individual that puts a face on an archetypical member of a group of people – mostly users. It serves as a memorable design target and, therefore, helps to guide design decisions.

**Customer Journey Map** A diagram that illustrates the steps customers go through when participating in service delivery. This map provides a structured visualization of a service customers' experience.

**Service Blueprinting** An operational tool that describes graphically the processes, activities, and roles of services' interactions in a level of detail which enables implementation, verification, and maintenance. The output of the tool is a service blueprint which contains a process model-like structure.

## Further reading

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