Chapter 4
Designing for the Level of ‘Service as Interaction’

Abstract  Value is co-created in the moment in which service beneficiaries interact with a service infrastructure, with other beneficiaries, or with technological components. The observation of services at this level reveals that different capabilities are involved in the process of value creation, from the everyday problem-solving capabilities of the service beneficiaries to the expert design capabilities of those who should facilitate value co-creation.

Two key terms have been used so far, which are very much related to each other and crucial for understanding the nature of the interaction that services imply:

- value co-creation, which indicates the very moment in which we produce value by accessing and/or interacting with a service (e.g. sending a message on a mobile phone, travelling on a bus, interacting with service personnel); and
- design, which indicates the act of planning a process of value creation.

Whenever we create value, we refer to a plan, which can either be implicit—when it refers to very well-known sequences of routinary actions, like preparing my breakfast—or it may need a structured design plan that requires certain design capabilities, like renovating the furniture in my kitchen. This means that value co-creation always implies a (implicit or explicit) design process.

The sections that follow focus on the process of value co-creation, the nature of the interactions this process implies, and the contribution of design (and expert designers) to this process.

4.1 What Is Design Action at This Level?

In the previous chapters, services are defined as interactions between multiple actors (also including non-animated actors such as objects and technologies) with the aim of producing value. This perspective offers a new point of view to interpret most of the actions in our individual life as a process of value creation.
Every day, in every moment, each of us performs actions, makes decisions and changes the existing course of things to adapt it to our material, ethical or spiritual needs. Whether we are preparing our breakfast or planning our trip to work, we are devising a course of action that is supposed to solve a problem or explore new opportunities for creating valuable results. We are creating value for our individual advantage (e.g. more comfort for ourselves) or for maintaining our social relationships (e.g. enhancing the interaction with those who live around us) or for taking care of our social environment (e.g. something that improves the quality of life in our community).

We create value by aggregating resources, such as the objects, technology, services, people or spaces around us. The knowledge of how to use these elements is also a resource we draw upon as we perform certain actions.

In most cases, our value-creation actions use the existing or ‘conventional’ knowledge that are implicit in our routines. This knowledge is the product of (even basic) technical know-how, such as how to use a coffee machine, together with knowledge derived from our social life, such as knowing where to buy the ingredients to make a meal. This know-how forms a body of skills (practice) that we can use at any moment. Of course, the actions involved in the decisions we make and the new value we produce are certainly not proposing anything particularly new. Those skills are individually developed in repetitive or recurrent activities (routines) and synthesised in standardised ways of performing a task. When performing such tasks, indeed, we refer to established protocols that also lower the effort of coordinating and aggregating the resources we have to perform any action or develop any solution.

We realise the relevance of such routines when we cannot use them. For instance, when we enter a supermarket we have never visited before and look for a product without knowing its location, we need to re-aggregate knowledge about product categories (e.g. fruit will be in the same area as vegetables). We also need to use the orientation skills we developed when visiting past supermarkets (e.g. pasta will be close to sauces) and our visual memory of product brands and packaging.

Such a routine represents a shortcut, without which, our daily life would be a nightmare of decisions; it would require continuous risk evaluation and constant assumption of responsibilities, even in actions that are repeated many times during the day.

Other actions in our daily life require that we use our critical sense (our judgement), our practical knowledge and our creative capabilities. These actions happen frequently in our daily life, such as when planning what to make for dinner or deciding what to do at the weekend. Most of those actions do not result in radical changes in our way of living or in our system of meanings, yet each of those actions generates value, which means it contributes to changing the existing situation to our preferred one.
4.1 What Is Design Action at This Level?

Those actions can be defined as an activity of design, if we consider the definition of design proposed by Nobel laureate Herbert Simon: ‘Everyone designs who devises courses of action aimed at changing existing situations into preferred ones’ (Simon 1969, p. 55).

The activity of planning those actions, imagining the result of them, and figuring out how to organise the resources available to achieve the desired change, however implicit or routinary, can be qualified as a design activity.

The design capabilities we need to perform such activities are quite basic. They correspond to our problem-solving skills; therefore, if we accept the basic implications of Simon’s definition, design can be defined as a diffuse capability (Manzini 2015), or as Heskett defines it, ‘Design is one of the basic characteristics of what it is to be human and an essential determinant of the quality of life. It affects every aspect of daily life’ (Heskett 2002, p. 4).

4.2 The Role of Design at This Level

When we look at service design as a form of interaction and value co-creation and observe it closely, we understand that the role of service beneficiaries is highly relevant. We also understand that they do not need to be professional designers to be part of this process because this interaction involves actions they have to perform on the basis of their own problem-solving capability.

As mentioned in the previous section, everyday problem solving refers to one’s attitude towards solving recursive or trivial problems—like driving a car, cooking or going to work—which usually do not represent any particular challenge to one’s individual problem-solving capability. This routine type of behaviour has been described and studied as practice in Social Practice Theory (Reckwitz 2002). Practices are defined as behaviours that depend on the interconnectedness of contextual elements, such as material objects and their use, background knowledge, know-how and emotional states (Reckwitz 2002, pp. 49–50). Practices are therefore a logical framework, and they define a comfort zone for our daily actions. Although such practices are constantly repeating sequences of actions, they may tolerate changes that exercise higher or lower pressure on the practice framework.

Although working within the boundary of everyday practice requires little specialised knowledge about design, performing actions beyond such everyday practice—beyond our everyday comfort zone—recurs in modern life, and it challenges our design (or problem-solving) capabilities. Almost every day, we are challenged by problems we have not met before, services we do not know, or procedures that we need to understand. Creating value (e.g. solving such problems, accessing such services, activating new processes) in those instances is not easy. Value, in this case, is created with the help of some type of support (mobile applications, communication, handbooks), which activates or stimulates customers’ capabilities. The definition of such design support needs expert design capabilities.
Our daily trip to work is a routinary task that does not need to be overly planned, but reaching a place in a new city that is unfamiliar to us requires some ‘expert’ support. We can use our social capabilities—and ask around about how to get to our goal, assuming that others will know the place better than us and speak our own language—or we can use a map on paper or our mobile. Mobile maps in particular provide detailed and real-time suggestions about the best itinerary, with trip timings and any points of interest along the way.

Designing (i.e. generating purposeful change) at this level requires capabilities to interact with other actors or technologies or to organise such interaction, as in the organisation of information in a service activity.

Creating a new community of people living together (a co-housing community) may require an interaction that challenges individual capabilities to figure out the quality of the collaboration among citizens and of the services that are needed for a harmonic life together. Fondazione Housing Sociale (Social Housing Foundation) developed a set of cards (Fig. 4.1) that support communities by suggesting services that cover the most recurrent aspects of living together. Such cards facilitate the dialogue among the members of the community (Ferri 2016).

Fig. 4.1 Social cards: a card set that facilitates the identification of collaborative services that address everyday life occurrences in a social housing community (Ferri 2016)
When working at this level, it is worth noting that (a) none of the actors interacting for value creation has full control of the value-creation process and (b) physical technological, logical or organisational structures—such as cards, phones, procedures, shopping centers or websites—are interaction devices that can be designed to support value creation; they do not imply value per se but rather mediate between actors and facilitate the development of value in a specific time and context. It follows that at this level, designers and service providers are not designing services (i.e. the value creation process) but rather a number of interaction devices consisting of physical, technological, logical or organisational micro-structures that could facilitate the process of value creation.

According to this view, a furniture shop does not produce value in its furniture, or with its exhibition spaces, or when delivering and mounting the furniture, but rather the value is produced by its customers in the moment the furniture is used to improve the value of one’s home life (Normann and Ramirez 1993).

**Do expert designers have a role in the process of value co-creation?** If we consider value co-creation as a process related to the very moment a product is used or a service is accessed and thus see the value as solely produced by the interaction between users/customers (with their own problem-solving capabilities) and the elements of their physical/logical environment, then the obvious question is whether design capabilities can be related to this moment, and if expert designers have a role in this process.

There is no doubt that the technical, physical and logical environments in which the interaction happens have been designed to a larger extent. The objects in the interaction, the sequence of actions and the role of people and objects involved in a service interaction are planned to suggest a certain kind of relationship. The quality and characteristics of those elements of a service suggest or make certain actions possible, where they implicitly or explicitly prevent other uses or behaviours. Who designs such elements cannot directly or exactly prescribe how the service will develop, but they envision the possible relationship between the properties of those elements and the capabilities of the customer. In Norman’s terms (Norman 1998), they design the *affordance* of such elements.

### 4.3 Design Capabilities at This Level

The design action at this level should aim at facilitating the interaction between individual beneficiaries and the social and physical context in which their value co-creation action is placed. Therefore, framing and contextualising service interactions
and supporting shared models of innovation or shared visions is useful. Designers can have a facilitation role if they are supported by the certain capabilities:

- The capability to empathise with people and address experiential features (visual, sensorial) of possible solutions (Controlling experiential aspects)
- The capability to facilitate the process of value creation (Engaging stakeholders)
- The capability to simulate, visualise and experiment with possible solutions before all the information is available, using form to embody ideas and communicate values (Modelling)
- The capability to identify and respond to relationships between a solution and its context (Addressing the context)
- The capability to figure out coherent possible futures (Vision building).

These capabilities are defined in more detail in the next section.

### 4.3.1 Controlling Experiential Aspects

Everyday value creation depends on the intersection of experiences, knowledge and practices from a variety of subjects: individuals, service providers, technological infrastructure (that brings about the technical knowledge and experience of those who designed it)¹ and other social actors.

The contribution that expert designers can offer to the process of value creation depends on the nature of the knowledge that designers want to gain about the people interacting in the value creation process and on the strategy they want to use to activate such knowledge. When designers do not have direct interaction with the actors in the value co-creation process, their strategy could consist of embedding the knowledge needed to use the service into objects, technologies, and services that can be proposed to the users. This is the case with the most common services, from supermarkets to ATM machines, which mediate the interaction between designers and customers. In those cases, given that the interaction between designers and the service customers is not direct, designers have to investigate the needs, practices and experiential knowledge that come into play. They have to empathise with the main actors contributing to the value creation processes. Design culture, particularly in the last few decades, has placed an intense focus on techniques to obtain user-related information by building upon collaboration with experts in ethnography, anthropology, social studies and interaction design.

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¹Every product, service or technical infrastructure embeds the knowledge of its creator. It gives the user a number of use options (affordances) and imposes limitations in regards to certain other use options. The concept of affordance is explained by Krippendorff (1989). A simple internet connection in a school, for instance, is (supposed to be) perfectly fit for the needs of the teachers but would impose big limitations for other uses, such as supporting the community outside of school hours (Morelli and Loi 2002).
When the interaction between designers and the other actors is direct, designers can propose prototypes or experiments that highlight the experiential aspects of possible solutions.

### 4.3.2 Engaging Stakeholders

When designers interact directly with the value co-creation system, their strategy to contribute to value creation may consist of directly activating the knowledge of service beneficiaries through direct involvement. This is the case with participatory actions, or design activism, in which the service is developed through the interaction with the service beneficiary. In this case, the service beneficiaries’ capabilities, needs, and problem-solving attitudes emerge from their direct contact with designers rather than from an accurate user analysis. This strategy can be supported by generative or facilitation tools, such as cards (Murray et al. 2010; Morelli et al. 2017; Ferri 2016), gamification tools (Di Dio et al. 2019; Oliveira and Petersen 2014), design experiments (Cantu and Selloni 2013; Cearreta Innocenti et al. 2018) and apps, which spark conversation and collaboration between actors with different types of expertise, knowledge and culture (Fig. 4.2).

### 4.3.3 Modelling

Making solutions visible before all the information is available is a critical function of designers, if, as Simon suggests, design is about envisioning possible future conditions to improve those of the present. The modelisation of possible realities is a way to show how it is possible to change the present into a desirable future. Models
of a future reality can take many forms, from bi-dimensional representation such as video (Vistisen 2016; Bolvig Poulsen and Morelli 2010) to ‘pretotypes’ (Savoia 2011) to drama (enacting scenarios) or more complex service prototypes in which different elements of a future solution can be simulated and tested.

The activity of design on this level may use tools, such as visualisation (journeys or storyboards), analytical tools ( personas, experience-, context- or technical analyses) and models (prototypes, cards or role-playing), which can be used to propose changes, simulate and experiment new solutions, and figure out the role of each stakeholder in the value creation context.

4.3.4 Addressing the Context

The act of value co-creation happens in a context, and it is shaped not only by the stakeholders involved in the co-creation but also by the technological infrastructure and by the organisational, cultural, economic and natural conditions. The complex interaction of such elements makes the results of every value co-creation act different. In this perspective, it is important to identify the elements of the context, their interaction and the way they might react to a proposed change.

This capability requires an attitude that is open to recognising and mapping the ecosystem around each value co-creation action in order to understand and highlight their motivation. When working directly with the beneficiary (e.g. through design activism, workshops, co-creation sessions or hackathons), designers need to visualise and prototype to create realistic scenarios that represent how the change will impact the life, routines or business activities of the beneficiaries and other stakeholders.

4.3.5 Vision Building

Vision building is a typical capability related to designers’ attitudes towards creative and exploratory processes. When designing to support value co-creation, vision building can help other stakeholders figuring out possible ways to put together different elements in a new ecosystemic configuration. Prototypes or narrative techniques move the observation point and the analysis of possible futures very close to the level of the interaction, and they focus on human or social aspects, thus helping the various stakeholders figuring out not only the functional components of the service but also any emotional aspects that would otherwise be left out of a more synthetic view of possible solutions.
Table 4.1  Practice and design capabilities at the level of value co-creation

| Objects of the design activity | Characteristics of design activity | Examples | Capabilities required |
|-------------------------------|----------------------------------|----------|----------------------|
| Non-routinary problems        | Interaction within communities   | Solidarity purchasing groups, urban gardening groups, Social housing | Addressing the context Vision building Engaging stakeholders |
|                               | Interaction with individuals (directly or through technology) | Mobile/web application, interaction cards, games | Modelling Controlling experiential aspects |
| Everyday practice             | Interaction with services         | Eating in a restaurant | Personal experience |
|                               | Interaction with products/technologies | Driving a car | Personal problem-solving strategies |

### 4.3.6  Summary

Table 4.1 presents some examples of problem solving and the design capabilities required at the time and place of value creation along with the most common tools to support such capabilities. The table includes activities that do not go beyond people’s everyday practice, experience and problem-solving attitudes—and therefore can be performed without any special planning skills or design tools. It also includes activities that challenge such practice (non-routinary problems) and implies a purposeful change in people’s routine activities, which means they may need the support of expert design capability.

### 4.4  Cases

#### 4.4.1  The IKEA Catalogue

**Introduction**  We are probably all familiar with IKEA’s offerings, particularly in relation to ready-to-assemble furniture. As the world’s largest furniture retailer, IKEA operates more than 400 stores in some 50 countries. The furniture is generally sold in packages that can be easily brought home and is built by the customers following relatively straightforward instructions.

The success of the company is grounded on the idea of shifting certain tasks (logistic, transport) from the company to the customers. One important function that

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2Source: [https://www.ikea.com/](https://www.ikea.com/). Accessed 4 March 2020.
the IKEA business model passes to the customers is design: while other more traditional furniture shops also provide design consultancies to their customers, IKEA’s customers are challenged to figure out how their home will look once the furniture is in place or even what kind of living space they want to live in.

A core element of IKEA’s strategy is their catalogue. In it, they present not only their products (e.g. tables, chairs, couches) but also a repertoire of pictures that show how the products will look in situ, for example, how a certain table will look when put close to a coloured wall or cupboard and what kind of living space they can create by putting together different items. Flipping through the pages of an IKEA catalogue, one can see typical scenes like that of a family enjoying a meal in their dining room, a dad reading a book to his daughter in her bedroom, and a woman working at her desk in her studio. In each catalogue, dozens of similar photos show how the IKEA furniture and home accessories can be combined to create environments that are well styled, cozy, creative, functional and welcoming. Every year, about 200 million IKEA catalogues are printed and distributed.  

This catalogue is a core element, as it provides the customers with a repertoire of possible IKEA-powered solutions to furnish and decorate their home and workplaces. In fact, the catalogue is a design support, in the sense that it invites the customers to use, re-interpret, appropriate, adapt, and combine IKEA furniture and home decorations and act as interior designers. In other words, the IKEA catalogue is a device that inspires the customer with how their interaction with the service can lead to value production (Fawzy 2019).

**Role and challenge for designers** Of all the services offered by IKEA, the catalogue is one of the elements that more fully invites and guides customers in processes of value co-creation. In most countries, IKEA sends these catalogues out through the post. When IKEA designers work on the yearly catalogue, they provide suggestions, examples, instructions, and a creative repertoire that takes the customers by the hand and shows them a world of possibilities. Not all of us have the capability to envision a space that does not yet exist or the visual effect of different colours or material in a space. Not everyone has this creative capability, not to mention the capability to figure out the size of a piece of furniture in relation to the physical dimensions of a space. In this case IKEA provides a kind of ‘design manual’ in which customers can imagine their life and sometimes recognise themselves in the spaces represented. With this support, and with a visit to the physical space where they can see and touch the items they are going to buy, customers are much more confident to work on their own (without the help of a professional interior design consultant) in the creation of their own living space.

**Design capabilities involved** In this case, certain design capabilities played an important role:

- *Controlling experiential aspects:* while working on the catalogue, the IKEA designers have to empathise with people and imagine an array of possible solutions

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3https://www.statista.com/statistics/268131/number-of-printed-ikea-catalogs-per-year-worldwide/.
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based on the very different needs, interests and lifestyles of customers throughout over 50 countries and in diverse geographic, social and cultural contexts.

- **Engaging stakeholders:** the powerful suggestions of the photos in the catalogues encourage the customers to engage in the design process, as the catalogue not only shows the aggregation of furniture in a living space but also makes clear how possible combinations can be created through different aggregations of modular furniture.

- **Vision building:** the catalogue is clearly a source of inspiration for customers. It requires a capability of aggregating different configurations of furniture according to visions of different living spaces. The customer has to be able to envision themselves and their life in the space.

- **Modelling:** this capability refers to the creation of prototypes represented in the catalogue or directly in the physical stores, which propose different experiences to the customers.

### 4.4.2 Tryg Nørrebro Station

**Introduction** Public space is per definition something that belongs to everyone. However, not everyone has the possibility to decide how public spaces should be designed. When involving the public in planning projects, engagement practices are often reduced to citizen hearings that only include and attract a specific part of the population.

With the aim of making citizens an active part in the decision-making process of urban development, a team of designers based in Copenhagen decided to involve a citizens’ alliance (*Medborgerne*) in the activation of temporary urban common spaces through a bottom-up design approach. A local union was interested in drawing political attention to and making unified demands to improve a local train station in the district of Nørrebro. The space in question had been under construction for a vast period of time due to a new metro line, and the degradation of the space had driven a part of the local community to feel unsafe in the area.

Despite *Medborgerne*’s interest in improving the area, no physical action was taken. They encountered both a lack of established practices and processes on how to intervene about the space and a lack of clear self-governance regarding the urban resources.

A design team formed by a group of students decided to assist the local community in influencing the future of the area around the station through a series of design experiments. The aim of the team was to improve the livability of the public space by strengthening a collective sense of ownership in the space. This, in turn, would support the co-creation of value in the form of social capital.

The team organized a co-design workshop with *Medborgerne*’s community to brainstorm on possible design experiments—meaning temporary urban activities—that would improve or question the liveability of the place during a specific period...
The goal of the workshop was to get as many people involved in the design process as possible so that they could feel a sense of ownership and more strongly bond with the area. The design experiments were located in various spots around the station area in order to activate and question the use of the space and to ensure visibility to as many people as possible. Furthermore, the experiments acted as ‘interaction devices’ designed to engage people in the conversation about the future of the area, enabling them to share ideas and visions and co-create possible solutions.

**Role and challenge for designers** The role of the designers was, first of all, to uncover and convey divergent interests concerning the area so that different actors could be empowered when involved in the workshop and in the participatory design experiments.

The designers gathered and communicated ideas (from and to the participants) by providing different interaction devices to boost engagement, facilitate co-creation, and collect insights. The interaction devices had different formats—ranging from a common diary to letters, posters, graffiti, a canvas for sketching and a temporary public living room—and different purposes. All the devices designed by the team acted as a means to trigger/provoke, as they encouraged citizens to interact and empathise with the space, exchange perceptions with their neighbours, and imagine future development scenarios for the area (Fig. 4.3).

Moreover, by translating insights into actionable points, the designers acted as mediators between citizens, community spokespersons and decision makers.

**Design capabilities involved** In this case, specific design capabilities played important roles:

![Fig. 4.3 Pictures from the design experiments proposed to the community living around Nørrebro station. *Source* Cearreta Innocenti et al. (2018)](image-url)
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- **Engaging stakeholders:** The experiments proposed by the design team had the scope of triggering stakeholders’ participation, creating a place for public conversation and supporting the interaction of the local community with their environment, in a place that was otherwise neglected by citizens.

- **Addressing the context:** Before intervening in the public space, the designers carried out a long process of identifying the neighbourhood and its prominent community voices and the space itself. The diversity of voices and visions in the area was reflected in the diversity of tools and activities that were designed.

- **Vision building:** By providing a blanked-out map of the area for sketching future scenarios, it was possible to trigger the citizens’ participation while also providing a confined space for ideation. This allowed for not only involving a diverse group of citizens but also guiding their ideas toward more tangible solutions.

- **Modelling:** By adding living room furniture to the public space, a prototype of how the public space could be appropriated was suggested, proposing a different kind of experience to citizens.

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