Chapter 6
Designing for the Level of ‘Service as Systemic Institutions’

Abstract  Every action is framed in a broader landscape dominated by a system of values, rules, and cultural, social and political premises. In this landscape, change is slow, evolutionary, and lies outside the control of a designer. Nevertheless, designers can play a role in triggering change and possibly steer it in preferred directions. This chapter illustrates the design capabilities that are most relevant for design action at this level.

Every action that produces change occurs in an institutional landscape. By ‘institutional landscape’, we mean the system of values, rules, and social, cultural, economic and political premises that frame the change and facilitate the changes that are consistent with this framework, while hindering those that are not (Koskela-Huotari and Vargo 2016; Vargo and Lusch 2015).

It is easy to imagine that, like natural landscapes, the institutional landscape may seem static or changing very slowly. Change and innovation at this level happens by slow and evolutionary movements influenced by several factors, including, but not limited to, human action. For instance, the institutional landscape is influenced by changes in institutional settings, such as cultural, scientific and technical knowledge, politics and social trends. Human action, and consequently design action, is therefore unlikely to produce direct and controllable institutional changes. Nevertheless, human action can still influence such changes, as shown by several examples of purposeful social constructions aimed at influencing this level. This is the case, for example, of healthcare reforms such as the welfare state reform in UK1 or Obamacare in United States,2 the Australia tax reform (Terrey 2012), the construction of the American electricity system (Bijker 1995), or the psychiatric reform in Italy (Manzini 2015). It is worth noticing that, besides the Australian Tax Reform,

1The welfare state reform inspired the Beveridge Report (1942) and was initiated by the first post-WWII government inspired by the work of John Maynard Keynes and William Beveridge.
2The Patient Protection and Affordable Care Act (PPACA), also known as Obamacare, was approved in the United States in 2010.
the main actors in these cases were not expert designers, even though their action could be defined as a design action, in so far as it was aimed at an intentional change. Therefore, it is important to understand what role designers and design action can have in the transformation of the institutional landscape.

6.1 What Are Designers Designing at This Level?

Working on changes in institutional landscapes implies a very broad scale of intervention. This approach is quite new for the design discipline, and the discussion about the role and contribution of designers and design—seen as a discipline or a body of knowledge—is still quite open (Koskela-Huotari and Vargo 2016; Vargo and Lusch 2015; Vink et al. 2017).

In his classification of the areas for design thinking, Buchanan (1992) listed the ‘design of complex systems or environments for living, working, playing and learning’ as the widest area of design thinking. At this level, design activity faces a high level of complexity and is often geared towards solving wicked problems (Buchanan 1992; Rittel and Webber 1973), interacting with multiple disciplines, and dealing with multiple dimensions (cultural, technical, social, environmental, etc.). For this reason, Banerjee (2014) proposes that a fifth order could be added to Buchanan’s classification: the design of large-scale transformations. When focusing on this kind of transformation, he indicates three types of design intervention:

- Designing new systems and scaling-up paradigms for unfamiliar and scaled problems, for example, by reducing the energy footprint of an entire nation by a significant percentage through a combination of approaches.
- Transforming the behaviour, roles and the relationships of the constituent stakeholders within the ecosystem, including non-human elements such as resource flows and natural systems, for example, an intervention to solve the food security problem through the simultaneous engagement of banks, government, agro-industry, farmers, small business enterprise, telecom companies and non-profit companies.
- Transforming the behaviour, outcomes and trajectories of the larger ecosystem, for example, by changing the way in which our institutions, civic societies, industry and government work so as to get entirely new trajectories regarding social, economic and environmental issues, while, at the same time, building a more resilient, more shock-resistant future. This could be achieved, for example, by combining healthcare, social, economic and environmental policies, to generate

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3The Australia Tax reform was the result of an explicit intention to integrate design and designers into the transformation of the taxation system. The construction of the American electricity system was instigated by the action of Thomas Alva Edison and his company. The psychiatric reform in Italy was instead the result of the policy action of a psychiatrist, Franco Basaglia, who was the major inspirator of the legislative reform.
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A system that is more resilient to pandemic crises, while re-localising production, and reducing the environmental impact of mobility flows.

In operative terms, designers contribute to generate policies, as in, sets of principles for action that inform the government of a large community of individuals. When working at this level, design can be essential to trigger or visualise possible change, or to highlight key elements that can play a role in large-scale transformation. It is important to know, however, that neither designers nor any other actors involved in such transformation can ever have full control over the change they are sparking.

The contribution of designers mainly consists of exploring possible futures, generating visions, creating scenarios and devising strategies for scaling-up promising initiatives; but at the same time, design activity is needed to align changes in infrastructure or even everyday value creation systems to the changes in the institutional system.

The Role of Design at This Level

According to Banerjee (2014), working for such transformation means, from the design perspective, considering two possible (and not alternative) strategies. The first is vertical co-creation, which consists of aligning and amplifying any promising change at any level to highlight an emerging direction for transformation at the systemic level.

A strategy of this kind is related to the question of the scalability of small initiatives, from local and limited contexts to wider contexts. Manzini and Rizzo (2011) propose that this can be done by defining framework programmes within which small experiments can be allowed. If particularly relevant for the context, such experiments can be amplified to larger scales. A different approach is proposed by Morelli (2015), who suggests identifying and codifying the structure of the socio-technical ecosystem of successful initiatives on a small scale. Such a structure—not the ecosystem per se—could then be reproduced in different or wider contexts.

The second strategy, horizontal co-creation, consists of creating shared perspectives and working across different disciplinary boundaries in order to generate holistic and shared views of possible transformation. These views have the potential to inform policies and policy instruments and will influence the development of new services or inform new cultures and individual behaviours.
A design approach applied to large-scale scenarios can contribute to defining the vision of what direction is desirable and feasible for the development of large-scale issues, thus suggesting mission-oriented innovation policies. This process would generate systemic public policies that draw on frontier knowledge to attain specific goals (Mazzucato 2017, p. 8). At the same time, the design contribution could help create operative perspectives for translating such visions in concrete design actions. This approach could be useful in approaching ‘grand social challenges’, such as the redefinition of social and economic ecosystems after a pandemic, the conversion towards a more sustainable society, inequality and youth unemployment, and to provide strategic direction for funding or supporting policy instruments, organisational arrangements, public services and cultural transformations.

### 6.3 Design Capabilities at This Level

The strategies outlined above imply different capabilities: vertical co-creation implies the capability to see or build a consistent framework to describe future perspectives that are instrumental when defining preferred future directions of development. Looking towards the future does not necessarily mean projecting the present onto a future direction (forecasting), but rather it can imply the opposite process of imagining and visualising preferable futures and projecting them onto the present—to highlight preferred trajectories and changes that will lead towards that future. This activity is defined as backcasting (Holmberg 1998). Backcasting has been used by companies or public authorities to figure out long-term strategies or policies and, on the basis of this, orient present and medium-term action.

In relation to scalability, vertical co-creation implies the capability to recognise and map complex ecosystems (e.g. the actors of a healthcare system or a community) in order to amplify its structure or reproduce the ecosystem in different contextual conditions (Morelli 2015; Manzini and Rizzo 2011).

Horizontal co-creation implies a design capability to generate shared visions and negotiate the transformation among a number of stakeholders that have different motivations, perspectives, interests and cultural frameworks. Design capabilities are also relevant to align such shared vision to the present reality, thus suggesting operational ways of addressing them.

Therefore, certain design capabilities are needed for designers to contribute to large institutional changes:

- **Vision building**: at this level, this implies the capability to aggregate different components of a complex reality into consistent, credible and desirable scenarios.
- **Modelling**: this refers to the credible and consistent simulation of what future institutional configuration will look like or imply in operational terms.
• **Working at different levels of abstraction:** this means being able to relate large-scale changes, such as policy changes or new regulations, to the infrastructure that will support such changes and figure out how those transformations will impact the everyday value-creation processes.

• **Addressing the context:** this refers to the ability to look at the broader picture, i.e. the technical, economic, social and environmental conditions in which the actors interact.

### 6.3.1 Vision Building

This capability refers to the use of scenarios or models that describe possible futures and provide a framework to evaluate the change and the various criteria that highlight the main factors of change. To work on large institutional changes, a designer has to be able to perceive and elaborate the signals and the needs of large cultural changes (e.g. the attitudes or initiatives towards social innovation, broad transformation based on technological advancements, the need for a sustainable development) and aggregate them into relevant representations of possible, feasible and desirable transformations. Visions are also essential to support the aggregation of actions otherwise dispersed in different domains thus creating a consistent image of a possible future transformation. For example, visions that aggregate changes in the healthcare system, in the welfare system and in the localization of production may address the transformation towards a system that is more resilient to a economic or pandemic crisis.

### 6.3.2 Modelling

When working on large institutional changes, modelling is intended as the capability to generate consistent and tangible descriptions of possible futures. These possible futures are visualised through operative aspects of the proposed change, even before all the strategic or operational aspects have been clearly defined. The resulting visualisations serve as an effective tool for policy makers to set up their policy objectives, or for large communities for recognising possible development paths and working in that direction.

### 6.3.3 Working Across Different Logical Levels

To be effective or to generate an actual impact, large-scale transformation should link to transformations in the smallest scale of the social or technical ecosystem, such as transformation in services, in infrastructures, and even in everyday interactions and value co-creation processes. When large-scale transformation is related to the
activity of policy making, this capability is referred to as policy delivery. In the opposite direction, this capability refers to pointing out small-scale transformations that have great potential for developing and working towards scaling them up\(^4\) in order to contribute to larger institutional changes. The designers’ work can therefore be crucial for aligning the different scales of innovation possibly working on scalability, or in the opposite direction, on policy delivery.

### 6.3.4 Addressing the Context

At this level, understanding and addressing the context for innovation or design action means getting a wide perspective of complex systemic issues, considering a number of actors, critical factors, and technical, economic, social and environmental conditions. Defining future directions for institutional change requires a clear view of the present, which is not always easy. Institutional systems have a degree of complexity that does not allow for an unequivocal interpretation or a clear definition of the problems to address; nevertheless, the need for action requires that designers are able to map, interpret and highlight critical issues that could be taken as the handle to grab and modify such a complex reality. Critical logical maps in addition to narrative techniques are often used in those cases to highlight relevant issues and compare different phenomena and trends.

### 6.3.5 Summary

Table 6.1 summarises the design capabilities that are needed to work on systems and institutional structures.

### 6.4 Cases

#### 6.4.1 The Reform of the Australian Taxation System

**Introduction** Taxation is at the basis of the financial system of a country, and it is a pervasive component of business and private life. Depending on the country, taxation systems are more or less transparent in indicating the way taxes contribute to the economic management of a country and more or less complex and easy to understand for citizens.

\(^4\)With the term, ‘scaling up’, we indicate the vertical process of institutionalisation of innovation initiatives, as opposed to the horizontal process of ‘scaling out’, which refers to the expansion of innovation initiatives or the enlargement of their base of adopters (Hancock 2003).
| Objects of design activities | Characteristics of design activity | Examples | Design capabilities needed |
|-----------------------------|----------------------------------|----------|---------------------------|
| Policy documents (intent documents, white papers, quality assurance documents, design briefs) | Suggesting directions of change in institutions, government organisations | Long–medium term Sustainability plans Healthcare reforms Tax reforms (Terrey 2012) Urban health (Geels 2010) Edison’s electricity system (Bijker 1995) Psychiatric reform (Manzini 2015) Gas stove systems (Cowan 1987) | Modelling Working across different logical levels Addressing the context |
| Scenarios, models | Triggering change in local communities, and institutions | DoTT 07 (Manzini and Rizzo 2011) | Vision building |
| Public innovation spaces | Triggering change in institutions, local communities, governments | Policy labs Living labs | Working across different logical levels Vision building |

The transparency of the relation between the tax we pay in our country and the public goods and services we can access, such as education, transport, health care, policing, is key in democratic systems, as it is part of the legitimation of public authorities. At the same time, the complexity of contemporary societies requires a more and more articulated taxation system, that makes it harder to understand and manage for the majority of citizens.

A major change in the Australian taxation system, the introduction of the goods and service tax, was the trigger for a substantial revision of the way citizens experienced the system. For this reason, the Australian Taxation Office (ATO) decided to use design to make the government financial policy clearer, to translate strategic design of the office into action, and to make the tax system easier to access, cheaper, and more personalised for citizens.

The ATO organised a programme involving the progressive assimilation of design thinking into the strategic procedure of its management. The programme originated from three conferences that introduced two big intellectual challenges for the organisation: one consisted of understanding the design approach, and the other involved building a design capacity within the organisation, which would give a better capability to navigate among the general principles and strategy, the different projects, and the tools to be used in each project.

**Definition of the service nature** When working on the new tax system, the ATO task force intended to encourage compliance with the taxation system by building a
more efficient communication and management strategy, based on a tighter collaboration between taxpayers, intermediaries and the system and by offering a number of products and services to assist business operators (Commonwealth of Australia 2003).

The introduction of design in the ATO implies a higher focus on the taxpayer, making sure, however, that such a focus is consistent with the general principles of the organisation. Over the financial year, the taxpayer has to put together a number of direct or indirect interactions with the tax system: keeping tax-related receipts, receiving instructions, filling in forms, receiving payment summaries, filing their tax return, and finally, making a payment. Highlighting such operations is already moving the focus away from the functionalities of each of those functions to that of the whole experience (Body 2008, p. 58).

The transformation within ATO consisted in creating a design capability to assist teams in all areas. Such a capability could be built as an internal resource that would ensure that design action refers to certain general principles, including user centricity, visibility of the processes, collaboration, shared understanding, consistency, user centricity and balance between tax system integrity and user experience.

**Role and challenge for designers** The ATO is the administrative component of the whole Australian Taxation System. The function of design in this project was therefore not meant to change the whole taxation system but rather to facilitate change in a clearly defined institutional organisation.

The need for ATO to include design as a new internal capability emerged after a number of negative evaluations of the tax reform in Australia (Terrey 2012, p. 4). As a result, the management of the ATO decided to engage Prof Richard Buchanan from Carnegie Mellon University as a mentor to spark the process of the progressive assimilation of design capabilities in the organisation. The challenge for the organisation was not only to understand the benefit of a design approach but also to introduce a new day-by-day practice of design involving a new set of tools, methods and strategies guided by a specific, design-led methodological approach. The project team decided not to push design top-down to all levels of the organisation, and instead, offer design as a service provided by a design team working on the parts of the organisation where the need for a design approach was more evident.

**Design capabilities involved in the project** Design capabilities were used for facilitating change within the taxation office’s practice by synthesising solutions and for communicating in various stages of the process, from user requirement visualisation to policy implementation. In this case, three design capabilities have emerged as most relevant:

- *Addressing the context*: the starting point of the redesign process was the first conference, where a design perspective was proposed, which moved the focus of management action from the organisation to the user. This was done by generating a narrative description of the taxpayer’s pathway through the system, which gave
the possibility to describe the details of each interaction between the taxpayers and the taxation office.

- **Working across different logical levels:** Starting from the analysis of the taxpayer’s experience, the ATO needed to link this knowledge with new policies. This is possible through a collaboration between ATO and the treasury since the early stage of policy formulation, in order to link design implementation and new legislation and to meet community concerns (Fig. 6.1).

- **Vision building:** this capability is used to produce documents of intents, which describe the intended process, with the aim of generating a common understanding within the team. Visualisation was also used to represent the design process, to describe the way different projects could run at the same time and to describe the integrated tax design process, which highlighted the interaction between the ATO and other institutional actors, such as the treasury and parliamentary offices (Fig. 6.1).

- **Modelling:** the activity of prototyping was used to identify users’ requirements. During the stages of the process that followed, a simulation centre was built in Brisbane, which made it possible to prototype the interaction between the taxpayer and the system.

### 6.4.2 Living Labs

**Introduction and definition of the service nature** According to Mark De Colve-naer, ‘Living Labs are an open innovation ecosystem where partners or stakeholders from different backgrounds can work together to find solutions to a defined challenge’ (cited in Hellström Reimer et al. 2012, p. 23).

Generally, Living Labs work as environments geared towards carrying out and supporting collaborative projects with external stakeholders. In some cases, Living Labs have a tangible, physical dimension. Over the past ten years, the Living Lab, Fabriken, located in Malmö in the south of Sweden, has been in operation, offering the public free access to a workshop equipped with a laser cutter, 3D printer and other prototyping tools (Seravalli and Simeone 2016). In addition, Fabriken also hosts a variety of events open to the public and organised either by the Living Lab managers or by the local community of users. Examples of such events range from micro-crowdfunding dinners all the way up to workshops on inclusive and sustainable fashion, drop-in art sessions and seminars on self-publishing.\(^5\)

In some other cases, Living Labs do not have a physical space but rather operate as an organisational framework that brings together stakeholders and engages them in co-creation activities, typically through a series of events such as hackathons, workshops and seminars. This is the case, for example, of the 6 Living Labs set up by the EU-funded iScape project.\(^6\) Over a period of three years, these labs connected

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\(^5\)https://stpln.org/calendar. Accessed 3 April 2020.

\(^6\)https://www.iscapeproject.eu/. Accessed 3 April 2020.
Fig. 6.1 The process map visualises the way policies are implemented, specifying the stages and the interactions to align actions and policy intents. Source Australian Government (2012, Appendix A)
a great variety of stakeholders, ‘facilitating collaboration and sharing of multidisciplinary knowledge and experience to advance air pollution remediation strategies and solutions.’

**Role and challenges for designers** The support that designers can offer to Living Labs can be articulated into two main areas: (a) the designers can contribute to the initial set-up of these labs, for example, imagining what kind of physical space and equipment are needed (if any), their governing and organising rules and the models to engage external stakeholders; (b) the designers can contribute to the daily operations of the living lab, for example, organising specific design-based activities (such as hackathons or prototyping sessions) to actively involve external stakeholders. However, the participation of designers in the creation of living labs also concerns the definition of the strategic role that the Living Lab can have in relation to how it can support local communities, institutions and urban ecosystems. Living Labs can be a Public Innovation Place, for example, places where citizens and public sector staff come and work together to create solutions which enable positive social change (Tassinari 2013).

Living Labs have become a quite popular format to set up co-creation environments. Since its formation in 2006, the European Network of Living Labs has labelled more than 440 Living Labs. Some of them, like Fabriken, are particularly geared towards vertical co-creation. The activities of Fabriken are structured as a framework programme to upskill the local community and to support local initiatives and experiments that can be potentially amplified to larger scales. The case of the iScape Living Labs highlights a different strategy. Each lab was located in a different country and run by an organisation with specific and varying types of expertise (ranging from design and policy analysis for the built and natural environment up to transportation research, meteorological service, spatial planning, air quality and health). These Living Labs operated by both organising local events and collaborating at an international level with each other and with other stakeholders, including research centres, policy makers, companies and citizens interested in improving air quality. As such, the work of this network of Living Labs was mostly aimed at horizontal co-creation and at creating shared perspectives and European action plans.

The challenge designers face when involved in living labs concerns the complexity of such an initiative. Working with such a varied network of stakeholders, who may have different needs, interests and agendas, may speak different languages and may operate in different geographic and cultural contexts, can be quite challenging (Simeone 2016; Ehn et al. 2014). The design capabilities, however, can prove essential for facilitating alignment and vision building in such complexity.

**Design capabilities involved** Emerging from this case are two of the most relevant design capabilities:

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7[https://www.iscapeproject.eu/iscape-living-labs/](https://www.iscapeproject.eu/iscape-living-labs/). Accessed 3 April 2020.
8[https://enoll.org/network/living-labs/](https://enoll.org/network/living-labs/). Accessed 3 April 2020.
• **Working across different logical levels:** given the different stakeholders involved in the various sites of operation, working through the format of the Living Labs means that designers should find or build broader frameworks to address, facilitate and orchestrate stakeholders’ interaction. As such, rather than just focusing on one of the levels presented in this book (service as interaction, service as an infrastructure, service as a systemic institution), the designers instead work across various levels, mostly through operations of abstraction in which the problem or situation at hand is observed from different perspectives (or different levels of zooming). This facilitates the institutionalisation of bottom-up initiatives and, in the opposite direction, contributes to support policy delivery.

• **Vision building:** the capability to envision possible futures and to create consistent and structured visions of what that future could look like is one of the core components that brings stakeholders together and structures collaboration within a Living Lab environment and framework.

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