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Multidisciplinary Design of Sharing Services

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Introduction

This book is the main result of FARB 2014 Research Project “Multidisciplinary Design of Sharing Services”, at Design Department of Politecnico di Milano (www.serse.polimi.it). Such a project aims to explore the *sharing economy* with a global view provided by different disciplines. Indeed, first of all we map several significant sharing services classifying them according to different criteria (e.g. the type of relationship between users, business model, incentive system), through a typical approach of **Service Design**. In this field, we also analyse in detail the role that the user has in the co-design and co-production of the service. Moreover, we analyse how the use of space changes in the different sharing services, and how it should be redesigned to accommodate them to the best, according to experts in **Spatial Design**.

We also study the **Socio-Economic** consequences that the sharing services have on the territory and community of people: just think for example the impact that AirBnB has in creating new tourist flows, arriving to change in many cities the image of whole districts. We highlight the challenges that there will be in the future in this sector, due to the birth of new communities and the relationships that will be created among new stakeholders.

An issue, closely related to this, is how to regulate these new types of services both for providing greater protection to users (in terms, e.g., of security, reliability, guarantees) and safeguarding the analogous traditional services by a competition not subject to (almost) any kind of obligation. The current challenge for the **Law experts** is to regulate these new services without suffocating them in the bud. This also entails the need to take into account the point of view of stakeholders with different objectives, often conflicting. In this context, it could open up new challenges of application for multi-objective analysis and game theory to provide the analytical tools of negotiation among the parties. This represents a further possible application of **Operations Research**, as already successfully happened for the planning and management of some sharing services, especially in the **Transportation field** (e.g. for the reallocation of vehicles in car-sharing and bike-sharing services).

The main outcomes of our study are:

- A greater understanding about the dynamics of sharing services and of the hidden problems (e.g. the uberisation);
- The identification of some key factors for success (or failure) of a sharing service through the analysis of the best (and worst) practices;
- The development of a unified and multidisciplinary vision of sharing services. Indeed, we show that altogether these services, despite their differences, have common languages, values and operative modes;
- The recognition of new challenges resulting from the sharing economy in different areas such as Service Design, Spatial Design, Sociology, Economics, Law, Transportation and Operations Research.

The book consists of two parts. The first, more theoretical, contains contributions which address general topics, developed by experts in the aforementioned disciplines. The second part deals with case studies of specific sharing services, putting into practice many of the concepts described in the first part. In detail, this book is organised as follows.

Chapter “[A Service Design Approach to Analyse, Map and Design Sharing Services](#)” explores the relationship between sharing economy and service design to describe how the latter can contribute to innovation in designing sharing services. A model of analysis is defined, based on three features to design sharing economy services: collaboration, participation and networking. Different maps of several significant sharing services are proposed, classifying them according to various criteria, such as the type of relationship between users, the business model, the incentive system, through a typical approach of Service Design. Finally, some reflections on the contribution of Service Design in the sharing and collaborative economy are outlined, showing how it can make sharing services more efficient, reliable, sustainable and close to the user needs.

Also Chapter “[Co-design in a ‘Social’ Sharing Economy. Understanding Levels of Citizen Participation in Collaborative Services](#)” aims to explore the sharing economy phenomenon under a Service Design perspective, but more focusing on the social side and on the role of the user (or, better, of the community of citizens-users) firstly in the co-design phase and secondly in the co-production one. By analysing a number of case studies, coming from the “Creative Citizens” programme held within the POLIMI DESIS Lab of the *Politecnico di Milano*, we attempt to verify the following working hypothesis: sharing services imply a co-production with users, and this co-production, to better work, needs a co-design phase in which different interests and values are aligned. Here, the role of the (service) designer is crucial, and more specifically his/her ability to work not only with individuals, but also with the community, adopting a community-centred design approach. The interconnection between the various levels of citizen participation in such collaborative services is discussed, starting from co-design and then focusing on co-production, co-management and co-ownership. Finally, the

chapter highlights how co-design may be a powerful means to pre-define roles and responsibilities, from both a practical and a formal point of view.

Chapter “[Between the Digital and the Physical: Reinventing the Spaces to Accommodate Sharing Services](#)” wants to analyse how the use of space changes in the different sharing services and how it should be redesigned to accommodate them to the best, according to experts of Spatial Design. Indeed, the sharing economy is based on a mentality shift of the people that are everyday more lean to share their private life through the social networks with a resulting establishment of a collective consciousness and an increase of trust in each other through the act of sharing. As a consequence, also *physical spaces* have to be considered today as new entities involved in the sharing phenomena, supporting along with their environmental, functional and aesthetic characteristics the various sharing activities. Moreover, in the information society, we live simultaneous in different spaces and times and the digital access to services sometimes needs to be transformed in something more physical to permit the *real* exchange of experience and knowledge, to meet *real* people. The boundary between virtual and physical space is getting everyday thinner and more invisible because, nowadays, digital devices are defining the landscape in the urban scenario, establishing interactions and links regardless of the materiality of a place itself. People in fact assume the role of the interface between the two spaces, defining urban landscape and spatial relationships through digital systems. According to the principles of sharing economy, people may act as a physical link into the space in order not to lose the relationships that take place in the physical dimension, while the current social life is quickly shifting to a virtual scale. Sharing activities in the public space would transform the city scenario itself into a stage for people aggregation, where users generate an online/offline information’ landscape through physical–digital actions, defining and designing at the same time flow patterns in both physical and virtual space.

Chapter “[Shared Hospitality Platforms: Possible Design Repercussions, Introverted and Extroverted](#)” investigates the impact of hospitality sharing services on urban scale, namely on the city communities, in a tangible and intangible way. Indeed on the one hand, they physically effect the use of the spaces (as analysed in detail in Chapter “[Between the Digital and the Physical: Reinventing the Spaces to Accommodate Sharing Services](#)”). On the other hand, they also have some immaterial impacts, given by their socio-economic consequences. Just think for example the impact that Airbnb has in creating new tourist flows. Moreover, the chapter explores possible implications, in the spatial design field, of new forms of hospitality that have emerged with the sharing economy. In particular, it shows how the private interior spaces will change accordingly with the confidence towards peers (main characteristic of the sharing economy).

Chapter “[Reinventing the Hospitality: Sharing Economy and New Hospitality Formats](#)” analyses the influence of the sharing economy upon the design of hospitality spaces from the specific point of view of the interior design. In particular, the analysis is dedicated to describe how the impact of the web platforms for the hospitality based on the sharing of spaces and services—especially AirBnB for the

global relevance—is transforming the hospitality system based on hotels and hostels introducing not only new formats and new concepts in this field, but stimulating a significant afterthought of the interpretation of hospitality. In the contemporary society, collective spaces are considered very important for civic, architectural, urban and morphological richness of a contemporary city. In particular, the spaces for hospitality, like hotels and hostels, but also new formats recently developed and strictly related to the domestic sphere are also acquiring more and more relief because this typology of spaces has been very sensitive to the social, economic and cultural transformations related to new ways of living—working—travelling based on “in-motion” lifestyle. Spaces to welcome people who spend their life “in transit” acquire a meaningful importance determining the massive increase of the use and the design of innovative hybrid spatial solutions able to answer to new needs and behaviours, but also to translating new collaborative processes in inclusive places where “feel like at home”.

Chapter “[Individual Rewarding and Social Outcomes in the Collaborative Economy](#)” investigates the aspect of individual rewarding and social outcomes in the sharing economy. Indeed, the relationship between individual benefits and the collective outcomes of sharing is a central issue in the public debate, above all, when it is described as a model capable of concretely representing enrichment or an alternative to the dominant linear and vertical capitalist model. The collaborative economy is socially built, and, for this reason, it is intrinsically ambiguous, also because it relies on the mixture of fears and opportunities of the impact of digital technologies. While sharing platforms aimed their communication on the values of sociability and sustainability, consumers use more often the platform for convenience or savings. This does not exclude that from this type of individual motivations can descend collective advantages, but it is naive to attribute these results to a direct intent. It is also useful to distinguish between different forms of sharing economy: if the rental economy is often moved by rationally purposeful actions and those related to forms of reciprocity by effective actions, the motivations behind common pooling practices can be traced to the concept of “contribution” developed to explain the connective actions in open-source communities.

Chapter “[Effective Design and Management of Shared Transport Services: New Challenges for Operational Research](#)” reviews and analyses the contribute of operational research (OR) in both the design and the management of shared transport services. Indeed, OR revealed to be useful to solve several optimisation problems arising at the strategic, tactical and operational levels. For instance, for bike/car-sharing services, a typical strategic problem is the localisation of the stations, while a tactical problem is to decide the fleet size, and finally, an operational problem is to decide how to relocate the vehicles among the stations during the day. As we will see, these kinds of problems can be solved through the algorithms developed by OR, providing a significant support to all the involved stakeholders (e.g. service providers, local administration, users) in their different decisions. In particular, we will consider optimisation problems arising in bike/car-sharing services, in carpooling (i.e. ridesharing) services and in collaborative logistics. If, on the one hand, for some specific fields, such as mobility services or collaborative

logistics, there are several studies showing the benefit provided by OR (e.g. the impact of vehicle relocation algorithms in the management of bike/car-sharing services), on the other hand, there are a lot of potential applications of OR that deserve to be still investigated.

Chapter “[Regulating \(and Self-regulating\) the Sharing Economy in Europe: An Overview](#)” provides an overview of the main legal challenges for regulating the sharing economy under European Union law. Firstly, it considers the distinction between professional and non-professional provision of services and between service provider and “marketplace.” Following, it explains how the existing EU law should be applied to the sharing economy, making reference to EU legislation and case law. Finally, it focuses on the respective roles of regulation and self-regulation. Indeed, the absence of legal rules for p2p services raises an evident problem concerning users’ protection, exposing customers to a number of risks, and may generate negative externalities. To tackle these issues—while encouraging the flourishing of p2p activities—a multifaceted strategy is desirable. The first step is leveraging intermediaries’ self-governing and enforcing capacity. Often, platforms’ interests are aligned with the general one, facilitating exchange among peers and fostering a safe and efficient development of the market. However, this does not mean that public regulators should refrain from defining rules for the sharing economy. Indeed, there is still much information that users are not able to verify and that reputation systems are not able to convey. Moreover, other market failures cannot be solved through self-governing tools. Platforms may have no interest to disclose information in their possession and may be induced not to take into full account the negative effects of their activities. For these reasons, a significant part of the regulatory process is still up to public regulators.

Chapter “[Sharing Economies. For Each one. For All](#)” opens the second part of the book, devoted to specific case studies of sharing economy. This chapter aims to increase awareness of the relationship between sharing economy initiatives and human diversity. The issue is characterised by particular physiological or pathological situations, or in consideration of different disabilities. Contemporary society is increasingly permeated by initiatives, in many areas, that facilitate people’s daily activities, and specific services are emerging from sharing economy’s area. The text will illustrate three different service design approaches: an exclusive, an integrative and an inclusive ones. The case studies presented are mostly related to the mobility and hospitality, in Italy and Europe.

Chapter “[Think Mobility Over: A Survey on Car2go Users in Milan](#)” analyses the case study of the *Car2go* car-sharing service in Milan based on data collected from a representative sample of users (3758). The analysis shows that the most frequent users are young (under 35), employed, male, with higher education, residents in the city and with limited mobility needs related to the family. They are attracted by the flexibility and convenience of the service, in terms of access to limited traffic areas or free parking. The affordability of the service sets car sharing as a potential replacement of car ownership. Moreover, the price is the factor that most affects the level of overall satisfaction of the users. This does not mean costumers asking for a lower price, rather eliminating price burdens and, at the same

time, elaborate more transparent pricing policy. The inter-modality is the most important challenge for the service configuration, with the coverage of areas and times when the public service is most lacking and the provision of integrated subscriptions.

Chapter “[The Role of European Institutions in Promoting Decent Work in the “Collaborative Economy”](#)” focuses on the ride-hailing company *Uber* and other “on-demand” platforms such as *Deliveroo* and *UpWork*, representing an emblematic prototype of broader trends that are reshaping the world of work. Among these trends, one can find: the casualisation and flexibilisation of employment relationships, the rise of precariousness and the fragmentation of the traditional workplace (the so-called uberisation), the fierce global competition and the expansion of the service sector at the expense of the manufacturing sector. This controversial and “disruptive” model—one part technology business and one part labour law work-around—entails significant socio-economic implications that deserve to be investigated, in continuity with Chapter “[Regulating \(and Self-regulating\) the Sharing Economy in Europe: An Overview](#)”. While evaluating the European approach to regulating the collaborative economy, one cannot fail to look at legislative communications, proposals and soon-to-be decisions regarding this set of fast-growing digital companies. Indeed, the number of entrepreneurial initiatives that adopt a decentralised and coordinated network of production and distribution of assets and services is on the rise. Although the current debate, still at an early stage, is absorbed mostly by antitrust law-related issues concerning the alleged unfair competition brought about by platforms in traditionally regulated markets (where companies are subject to more restrictive rules), legal scholars now insist on investigating how crowdsourcing and on-demand work are threatening secure employment relationships and jeopardising workers’ rights. The chapter analyses European initiatives aimed at adapting the current legal system and providing guidelines for regulating work in the collaborative economy. In the very near future, legislative interventions should absorb the legal grey area where platforms are operating and accumulating their business advantage, since these arrangements are increasingly becoming the way how people make a living—not merely an occasional diversion to earn extra money in their spare time. However, a cautious regulatory approach is necessary since several sharing economy platforms are still in their business “infancy” and legislative headlong rushes may stifle them.

Chapter “[From Shared Public Spaces to Public Spaces for Sharing Activities. #Sharing.Lab Milan + London](#)” summarises the activity of the Spatial Design Studio “*Sharing.Lab | Milan + London*”, in collaboration with the Middlesex University of London, that investigated the sharing phenomenon through an experimental approach. It consists in testing in which way the physical aspect of public/private spaces of our cities can become the perfect place for sharing activities, catalysing in the urban shared spaces those activities mostly deemed in the public opinion as virtual/digital. Indeed, the networking society actually allows for simultaneously building a high-speed global system and low-speed local one and the cities and the territories. Several digital sharing apps and services (130) in different areas (e.g. food, goods, learning, transport and spaces) have been surveyed

and studied in order to map and highlight the spatial values associated with the sharing activities according to the principles of Spatial Design described more in general in Chapter “[Between the Digital and the Physical: Reinventing the Spaces to Accommodate Sharing Services](#)”.

In continuity with the same chapter, Chapter “[Online/Offline Sharing Life](#)”, investigates the link between the contemporary living influenced by digital technology and the urban spaces of consumption defining the aggregation places within the public space. A selection of case studies of shared spaces such as the *HomePlus Subway Store* by Tesco in Seoul, *Inamo Restaurant* by BlackSheep in London and *Digital Metro Library* by Humanitas and Vodafone in Bucarest is analysed in order to highline a design strategy focused on reactivating urban space through the overlap between physical and digital spaces. The action of space virtualisation and digitalisation generates sharing behaviours. In particular, the references taken in consideration represent examples of best practices which define actual examples of the activation of sharing behaviours in shared spaces.

Chapter “[Airbnb: A New Way of Housing Between Individual Experience and Collective Narration](#)” is devoted to *Airbnb*. As Joe Gebbia (co-founder of *Airbnb*) declared during his last interviews, *Airbnb* is more and more interested to investigate the new way of living and the actual transformations of private spaces (as in general analysed in Chapters “[Shared Hospitality Platforms: Possible Design Repercussions, Introverted and Extroverted](#)” and “[Reinventing the Hospitality: Sharing Economy and New Hospitality Formats](#)”). Their presence at the last *House of Vision* Exhibition in Japan demonstrates that they can really change our idea of domestic space in the future. They are very interested on designing new form of “houses” starting from the idea of sharing and that people can trust each other. To this purpose, they launched an internal division, Samara, that is a design studio at *Airbnb* exploring new attitudes towards sharing and trust. Samara builds hardware and software that support this direction. Hence, the chapter focuses on the changes affecting the housing paradigm: today the concept of hospitality also involves the domestic sphere and rethinks it in terms of extroversion and accessibility as well as like an episode of a collective storytelling. In such a framework, *AirBnB* represents a successful compromise between preserving one’s own identity and opening to the other, but especially a possible transformative engine for a collaborative economy. Indeed, it does not only consist in an exchange of services, but in directly involving the users in the building of a new social contract between people.

Chapter “[Italianway: An Entrepreneurial Innovation for Hospitality in Contemporary Cities](#)” analyses a different collaborative platform in the hospitality field that can help the visitors to fully live the town they are visiting. It is *Italianway*, a platform, built in Milan that links the visitors with the local communities and services to offer an authentic experience of the city; in the founders’ words: “Live like a local, welcome to Milan”. The chapter illustrates the favourable factors of the wider contemporary scenario on local economic growth, enabling the introduction of innovative solutions into a traditional economic system through the

hybridisation of the sharing economy approach with and within a given social environment.

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communities into groups that regulate their exchanges through the use of digital platforms and the adoption of a peer-to-peer approach.

In these exchanges, we can observe a form of social reciprocity which is discussed in detail by Pais and Provasi (2015) in their article entitled 'Sharing Economy: A Step towards the Re-Embeddedness of the Economy?'. In their discussion, they build on the work of Polanyi (1944, 1957), who examined three forms of integration between economy and society: exchange, reciprocity and redistribution. In particular, reciprocity may be linked to non-economic forms that we can find in pre-modern societies, operating in terms of the symmetry of the different social groups (families, clans, communities), but, as Pais and Provasi (2015) argue, one of the merits of Polanyi's work lies in his having intuited that reciprocity may be important even for modern societies. In fact, it is possible to investigate further the notion of reciprocity by connecting it to some features of the sharing economy. More specifically, Pais and Provasi (2015) distinguish three types of reciprocity:

1. *Reciprocity in the strict sense*: this type of reciprocity is an asynchronous exchange, similar to what happens in the economies of the gift. In this specific case, people combine instrumental interests with an intrinsic willingness to cooperate, accepting the risk of not being repaid. If we look at the current sharing economy, some activities may fall under the label of reciprocity in the strict sense, such as couchsurfing (a form of hospitality amongst strangers) or types of crowdfunding that are donation-based.
2. *Collaboration*: this is a weak form of reciprocity, based on a short cycle (the return is soon made and is equivalent to what has been given), and instrumental motivations prevail over intrinsic ones. Both parties benefit from the collaboration, but they are not forced to enter into a deeper relationship. A form of indirect trust is established thanks to the adoption of a set of proper tools to continuously manage the collaboration. The service BlaBlaCar (a carpooling system in which a motorist offers rides in the available seats in his car on specific journeys) is an example of a sharing economy activity that falls under this type of reciprocity. Another example: 'social eating' platforms in which a food lover organises a dinner in his home and a group of strangers join the event. What matters in this collaboration are the characteristics of the owner, in other words his/her reputation, which is built through an algorithm that processes the ratings made by earlier users.
3. *Common-pool arrangements*: this type of reciprocity aims to create new communities of interests. Such communities are composed of people who share a strong sense of belonging and make a motivational investment in the group, thus generating trust. Part of their individuality is sacrificed in order to receive in exchange an identity and a shared aim, establishing moral obligations towards all members of the group. If we look at the current sharing economy, some examples of common-pool arrangements are quite old, such as activities related to open source. Others are more recent, such as initiatives connected to open

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Between the Digital and the Physical: Reinventing the Spaces to Accommodate Sharing Services



Giovanna Piccinno

Abstract The sharing economy is based on a mentality shift of the people that are everyday more lean to share their private life through the social networks with a resulting establishment of a collective consciousness and an increase of trust in each other through the act of sharing. Consequently, the physical spaces must also be considered today as new entities involved in the phenomena of sharing, supporting, together with their environmental, functional and aesthetic characteristics, the various sharing activities. Moreover, in the information society, we live simultaneously in different spaces and times and the digital access to services sometimes needs to be transformed into something more physical to permit the *real* exchange of experience and knowledge, to meet *real* people in a *material arena*. The boundary between virtual and physical space is getting everyday thinner and more invisible because, nowadays, digital devices are defining the landscape in the urban scenario, establishing interactions and links regardless of the materiality of a place itself. What happens is a sort of dematerialization of the physical space which supports a no-stop digital flow, filtered by the social system of relationships. People in fact assume the role of the interface between the two spaces, defining urban landscape and spatial relationships through digital systems. According to the principles of sharing economy, people may act as a physical link into the space in order not to lose the relationships that take place in the physical dimension, while the current social life is quickly shifting to a virtual scale. Sharing activities in the public space would transform the city scenario itself into a stage for people aggregation, where users generate an online/offline information' landscape through physical–digital actions, defining and designing at the same time flow patterns in both physical and virtual spaces. In this context, the aim of this chapter is to analyse how the use of space changes in the different sharing services and how it should be redesigned to accommodate them to the best, according to experts of spatial design.

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1 Digital City and New Urban Behaviours

The well-established structure of the modern European city, realized in the twentieth century, is falling apart and changing quickly under the pressure of global development. Hence, our landscape, both physical and mental, is getting deformed. “*Our everyday environment has changed in just a few decades. Feelings, perceptions and imagination are the categories that have been shaken by technological innovations and by the power of the industrial apparatus that makes said innovations widespread*”¹ (Augé 2012). This has obliged us—inhabitants, citizens, researchers and designers—to deeply reconsider the logics for defining the urban environments and social behaviours manifested through those categories.

The deep process for separating time and space, started in the early 1990s, is intervening in this new *landscape* as activator of mechanisms necessary to update behaviours, most of which involved in the uprooting of social institutions (the main categories being: kinship, politics, economy, religion), a phenomenon called *disembedding*² by English sociologist Anthony Giddens.³ Said behaviours are enabling social relationships to be carried out free from specific places, recombining them through spatial–temporal distances in indefinite zones of space and time. Actually, the space–time compression is entailing the progressive reduction of distances—considered a restriction for social actions—up to reaching what leader writer of the New York Times, Thomas Friedman,⁴ defines the *death of distance*.

That being said, indeed the reorganization of time and space is deeply transforming the content of our daily lives—both at relational and social levels—causing the fragmentation of personal and social identities. All this takes place within a framework of plurality of belonging—which were characterized by pragmatism and durability—in a continuous extraction of social relationships from local contexts of interaction and their restructuring through indefinite space–time spans.

Niklas Luhmann⁵ described this evolution as the *paradox of society*: society is made of direct interactions among people, but today’s society is no longer accessible to people through direct interaction. In fact, in time the latter has been substituted by technological innovations that have allowed to reduce or annul distances as evident with transportation and communication technologies, from the steam engine, to the telephone, to the diffusion of the Internet and of *social networks*.

¹Marc Augé, *Futuro*, Bollati Boringhieri, Torino, 2012, page 65.

²*Disembedding* > uprooting.

³Anthony Giddens, *Modernity and Self-identity*, Stanford University Press, Stanford Ca, 1991; transl. It. Anthony Giddens, *Identità e società moderna*, Ipermedium libri, Napoli, 1999 .

⁴Thomas Lauren Friedman, *The World Is Flat A Brief History of the Twenty-First Century* (original title),

Italian edition, *Il mondo è piatto - Breve storia del ventunesimo secolo*, translation by Aldo Piccato, Oscar series, Arnoldo Mondadori Editore 2007, pp. 584.

⁵Niklas Luhmann, one of the major exponents of German sociology in the twentieth century, who applied the theory of social systems (sociology) to society, obtaining strong confirmation also in the field of philosophy.

In this process, the individual—the contemporary citizen—is substantially decontextualized, projected into a new global dimension defined by the age of electronics and by a consequent spreading of social relationships at global level. This has led past certainties and habits—that used to be based on traditions and customs—to be quickly substituted by others, more fit to coexist with the current operational processes, as well as more fit to govern them.

The separation between time and space has been made possible and is activated continuously by all the virtual interaction tools at disposal and used regularly. Moreover, this separation entails an increasing substantial decrease of *vis-à-vis* interactions, fostering relationships that mostly take place in conditions of distance and simultaneously. Hence, a new type of *international community* is being produced—unconnected to the physical place and co-presence of people—that dialogues through *chats* and applications, almost always without a direct knowledge of the true background of those with whom one enters into contact.

Nowadays, the social dimension of people who gather together takes place paradoxically, and practically, at macro level, in large assemblies of young people (and not only the young), for example, on the occasion of important music events. To give an idea of the size of the phenomenon, more than 250 thousand people were present at Rolling Stones' concert held in the Cuban capital of Havana in March 2016. For its relevance and social-historical phenomenon, it was compared to Roger Waters's concert in 1990, *The Wall*, held in Berlin at Potsdamer Platz, to celebrate the fall of the Wall. These collective gatherings, mass meetings, are governed by the global phenomena of belonging and media, where the strength is given by the fact of being present and participating in a common experience, often connected to epoch-making events, which can then be diffused individually as personal experiences, but that become once again collective through the widespread *social networks* and *social media* (*Facebook, Instagram, Whatsapp, Twitter, Pinterest, Youtube, Vimeo, Tumblr, LinkedIn*, etc.).

This triple decentralization process (the city, the place where the individual lives, the individual) is generating the extension of what Augè defines “*empirical non-places*”, that is spaces of circulation, consumption, communication; it “*represents a change of scale that modifies, both for individuals and groups, the definition of context, which basically is always global*”.⁶

2 Analogical/Real Space and Digital/Virtual Space

The human perception of the real space (concrete, tangible, recognizable)—to which I personally acknowledge a rediscovered and renewed *analogical* quality—has acquired, in this extremely diffused global condition and on the increase, a different and renewed role. In fact, there is the need to develop projects for a new relevant

⁶Marc Augè, *Futuro*, Bollati Boringhieri, Torino, 2012, pages 66–67.

category of urban places, capable of mediating the continuous *online/offline* condition that guides our daily behaviours. Places thought and designed for realizing a connection between the *analogical/real* space and the *digital/virtual* space.

Therefore, the accelerated process updating cities and behaviours at global level spurs to investigate the various logics, with reference to needs and methodologies, for the “intelligent” use of spaces of the diffused urban territories, so as to propose to citizens quality “models of places”; places in which the aims are to give back meaning to the real experience, to define local fields and dimensions, to rebuild—although with different criteria—the proxemic need of meetings and of the value of direct experiences. When space stops being meaningful to citizens, it no longer defines fields or local dimensions, becoming devoid of attractiveness. On the contrary, experiences express the value of the place and its meaning intensely.

This deep transformation process of the urbanized territories is also generating a new condition of geographical balance deriving from the fact that the well-established concepts (correlative and historical) of *centre* and *outskirts* tend to be incredibly equivalent and to swap. This is generating what can be defined a new *intermediate landscape* between the city and the countryside, proposed to us today as *total landscape*,⁷ in which the elements belonging to the two environments ever more overlap and substitute each other. Consequently, the places in which the city is lived are more hybrid, and their functional destination is increasingly uncertain or at least open to continuous updates. However, this also depends on who “lives” these spaces, on the time of the day in which they are used, on the season, and on the different hypotheses of use, etc.

The European city is defining a variable identity of itself, still clearly made of fixed points defined by the historical and well-established architectural city, together with the recently structured city and the one in phase of evolution, which update spontaneously. However, it is also made of areas that are interstitial, intermediate, open, flexible, renewable, implementable, reversible, changing. Environments which, in their whole, are defining the *network* of what I believe will be more and more a *Wi-Fi city*, regulated by conditions ever more connected to the logics of *Ambient Intelligence & Ubiquitous Computing and the Internet of Things (IoT)*.⁸

⁷Giovanna Piccinno, *From identity in progress to in-between spaces*, in G. Piccinno, E. Lega, *Spatial Design for in-between urban spaces*, Maggioli (IT), 2012, page 62.

⁸*Ubiquitous computing (ubicomp)* is a man–machine interaction model in which the processing of information is entirely integrated into everyday objects and activities; who “uses” *ubiquitous computing* activates various calculation systems and equipment simultaneously, during normal activities, and may not be aware of the fact that these devices are carrying out their actions and operations. The *ubiquitous ambient intelligence*, that is the application of the *ubicomp* technology to all kinds of environments, among which also the urban ones, will modify radically the fruition of spaces in the upcoming years.

Ubiquitous computing was first mentioned by Mark Weiser, who in the late 1970s identified in the quality of being less intrusive the future of information infrastructures; *ambient intelligence* aims at incorporating in the diffused environment the ability to communicate; the *Internet of Things* is a sort of “label” alternative to the first two, which consists in the application of the accephalous and distributed architecture of the Internet not only to computers or mobile phones, but

In the upcoming future, both Ambient Intelligence and Ubiquitous Computing and the Internet of Things, due to their pervasiveness, will radically modify the use of urban spaces, as well as—consequently and necessarily—the criteria for designing them. Apart from the variety of names and definitions, these infrastructures aim at “disseminating” network connectivity in the domestic and extra-domestic environments, extending from devices up to now considered fit to carry out said function (computers and *smartphones*), to surfaces and objects of daily use. Therefore, they entail an accurate design of the transition from the physical to the digital, from materiality to immateriality, from visibility to invisibility, mixed realities that emerge as a *continuum* between digital spaces and real spaces.

... I like ubiquitous computing, when technology almost disappears, and you can afford to forget it. It's similar to the Supermarket of the Future that we designed for Expo in Milan: the product talked about its history, but the technology making it possible was invisible... Information has a great transformation power. It allows to understand the consequences of our actions. (C. Ratti, 2016)⁹

3 Sharing Economy and New Virtual/Real Behaviours

The *Age of Access*¹⁰ represents, in actual fact, an imminent future in which property will be substituted with forms of access to any kind of goods or services or cultural experiences (for a fee and/or through the various *sharing* experiences). Sharing will be much more frequent, and ownership will be much less present. The gap between who is connected to the Internet and who is not will be wider and wider. However, said age will also allow a greater diffusion of knowledge, democracy and well-being. It will spur the transit from an economy governed essentially by the market and from the concepts of assets and property to an economy based on values such as *culture, information, relationships and sharing*.

Indeed, the *relational aspect*, both virtual and real, is the decisive element for the new project, an aspect capable of intervening in territories, environments and users as activator of new experiences. Said experiences can produce value through a process that can become virtuous, generating attractiveness and interest for citizens that are becoming more and more *wandering and international*. Hence, they can

also to objects of daily use (cf. ITU, 2005), “Internet of Things. Executive Summary”, at: http://www.itu.int/osg/spu/publications/internetofthings/InternetofThings_summary.pdf

See also, Kevin Curran, *Pervasive and Ubiquitous Technology Innovations for Ambient Intelligence Environments*, IGI Global, Hershey, Pennsylvania (USA), 2012.

⁹ Interview by Cristina Gabetti in *The good life*, n.5, Nov/Dec. 2016

- Carlo Ratti, *Architettura Open Source*, Einaudi, Torino, 2014.

¹⁰Jeremy Rifkin, *The Age Of Access: The New Culture of Hypercapitalism, Where All of Life is a Paid-For Experience*, Putnam Publishing Group, New York, 2000; transl. in It. by Jeremy Rifkin, *L'Era dell'accesso. La rivoluzione della new economy*, Mondadori, Milano, 2000.

rebuild local relationships and social exchanges, also owing to sharing processes, physically activating the connection between the virtual and the real, which in time has gone lost.

As highlighted by Cristina Bianchetti, who in collaboration with the Politecnico di Torino has given life to a blog on Shared Territories/Territori della condivisione, “...when referring to territories, sharing is not meant in ecumenical terms, but it refers to a thickening of social relationships which produces places where individuals recognize themselves. It is also interpreted as a meeting experience that produces visible signs in space and time”.¹¹

In particular, the unresolved *urban interspaces*—previously defined as *in-between spaces* (Piccinno 2012)¹²—assume, within the city renovation process in progress, the meaning of connection elements, actual *hot spots* of a *network* that can be updated, and within which the most varied activities can be hosted, even those connected to the powerful and developing *sharing economy*. In fact, in recent years there has been an increase of social behaviours, economic models, institutions and rules that have shared public responsibilities, resources (work tools, spaces, equipment, competences, time, other tangible and intangible resources), lifestyles and productive processes of goods and services.¹³ In actual fact, the “*sharing economy*”¹⁴ is being implemented.

Jeremiah Owyang—founder of *Crowd Companies*, an *Innovation Council* established to put into connection major *brands* with leaders, *start-ups* and communities within the scope of the *Collaborative Economy*—wrote in 2014: “the *sharing economy* allows people to obtain what they need from their community”.¹⁵ This condition has been made possible owing to a deep change of mentality, according to which individuals, since they are used to share and available to share their private lives through the *social networks*, have developed a collective conscience and an increased mutual trust.

It is interesting to notice what Alessandro Brunello observed to this regard in his text *Il Manuale del Crowd Funding* (2014). In fact, he highlighted that the IT culture, through the social media, has been able to transmit the new value of sharing owing to the well-established habit of showing scenes of personal life as well as contents and knowledge with continuity and to a very broad public. This has led people to a new philosophy ...

¹¹Cristina Bianchetti, full Professor of Urban Planning, DIST—Dipartimento Interateneo di Scienze, Progetto e Politiche del Territorio, Politecnico di Torino, at <http://territoridellacondivisione.wordpress.com/>.

¹²Giovanna Piccinno, *From Identity in progress to in-between spaces*, in G. Piccinno, E. Lega, *Spatial design for in-between urban spaces*, Maggioli, Rimini, 2012.

¹³The definitions and scopes of action are many: sharing economy, mesh economy, peer-to-peer economy, commons-based peer production, on-demand economy, rental economy, crowd economy, collaborative economy, sharing economy and others similar to these.

¹⁴<http://www.labsus.org/2015/11/i-beni-comuni-nella-societa-della-condivisione/>.

¹⁵<http://crowdcompanies.com>.

... which has been the propulsive engine of radical social changes and of the development of individual sensitivity over the last years.” In fact, “the true revolution took place when we passed from a passive download to an active upload ..., an actual turning point toward the democratization of society and individual empowerment, as now anyone can share, be heard, and reach a very vast public.”¹⁶

4 Sharing Economy and Pooling Economy

Despite the great diversity of services shared, these use common languages, values and operational modalities preferring access to goods instead of ownership, exchange instead of purchase, trust instead of mistrust, the short distribution channel instead of the long one. Therefore, the sharing of goods, *know-how* and experiences has laid the basis for the new economic model defined *sharing economy*, which according to recent estimates is likely to reach a worldwide turnover of 300 billion Euros within 2025.¹⁷

Many of the activities giving life to the sharing economy have a common aspect, that is the *peer-to peer*-relationship,¹⁸ whose organizational model is the network. In fact, the fundamental element of the sharing economy consists in single individuals that enter into contact with other single individuals, owing to the “network of networks”, the *Web*. Today this takes place for exchanging houses, for *car pooling*, when searching for advice, when exchanging opinions and knowledge, when searching for a partner, wanting to share dinner with strangers, exchange time with services, share passions, etc.

Therefore, sharing means finding new ways of expression within expanded scopes of action involving also spaces in the city, real physical, public and private. In fact, these spaces are recognized as ideal containers for hosting, in places open to all, new social behaviours that are putting back together pulverized relationships, reduced to a grid of relationships one at a time.

According to sociologists and town planners, “*to make the city*” means to build a thick fabric of bonds, exchanges, solidarity and even conflicts. Vice versa, a city that “*falls apart*” according to the theories of Olivier Mongin (1999) and Jacques Donzelot (2008) “... *is a city where the logics of distance, separation and fracture prevail. Logics that deeply undermine the common sense of the urban condition*

¹⁶Alessandro Brunello, *Il Manuale del Crowd Funding*, Modelli di Business, 2014, e-book.

¹⁷<http://www.sdabocconi.it/it/eventi/2016/03/sharing-economy-social-innovation>
<http://www.altroconsumo.it/eventi/festival-2016>
<http://www.unicusano.it/blog/universita/sharing-economy-infografica/#.WJdLiq2dy->
<https://www.juniperresearch.com/researchstore/strategy-competition/sharing-economy/opportunities-impacts-disruptors-2016-2020>.

¹⁸*Peer to peer*: the expression peer to peer, and its abbreviation P2P, indicates the “sharing of resources between those who are equal”, from the meaning of peer = equal, the same. See <https://it.wikipedia.org/wiki/Peer-to-peer>.

where mixture, integration and pluralism are central. The issue is whether sharing can actually intervene against these processes that create distance, in other words if it can ‘make the city.’¹⁹

5 Spatial Design and the Value of Its Action on the Urban Territory

Spatial design is an activity that intervenes in spaces according to configurative, light, progressive, regressive and even systemic modalities. Its value and power on the urban territory lie in the fact that it can create a quality connection between the *analogical/real* space and the *digital/virtual* space, particularly necessary today for the community.

In many cases, the virtual access and digital sharing of services and knowledge—today irreplaceable and unstoppable—can aspire to be supported by a physical component, the real space, completing an exchange of experiences and knowledge even *face to face*, in a true *arena*. These designed places, with their countless and unusual typologies of environments, can host new sharing behaviours owing to their different “programmed” qualities: relational, environmental, functional, aesthetic and perceptive, with reference to a logic of belonging to *communities* and a logic of *branding*. But they can also, and especially, give back to citizens the sense and value of *common goods*.

Today it is possible to identify various typologies of tangible and intangible common goods—natural resources, rural common goods, urban common goods, intellectual common goods, etc.—that are placed under different interlocutors—institutions, single citizens, groups and associations, the third sector, social enterprises, philanthropic institutions, etc. Within this dual relationship between common goods and interlocutors, designers place themselves as activators transforming a social need into a social space, recovering the abovementioned value of making the city.

As highlighted by Christian Iaione, Professor of *Governance of common goods* at the University Luiss Guido Carli, to manage common goods does not only mean to involve citizens in decisions concerning the management of the territory, but it also means:

¹⁹Cristina Bianchetti, *Shared territories/territori della condivisione*, in *Scienze del territorio*. ISSN 2284-242X. N. 3 Ricostruire la città, p. 56, Doi: 10.13128/Scienze_Territorio-16249, 2015 Firenze, University Press.

Donzelot J., Mongin O., “De la question sociale à la question urbaine”, *Esprit*, n. 258, pp. 83–86, (1999)

Donzelot J. *Quand la ville se défait. Quelle politique face à la crise des banlieues?*, Points, Paris, (2008),

Donzelot J. *La ville à trois vitesses*, Éditions de la Villette, Paris, (2009).

... to totally redesign the way of thinking our cities ..., to create a new governance of the territory where institutions meet citizens, universities, private subjects, associations and the third sector within a new model of shared design, to recover abandoned or degraded areas and to manage these as well as other public spaces.²⁰

It is a different approach, a different way of conceiving the city, which many think of. It does not want to fight the territorial institution, be it municipal, provincial or regional or the private subject that wants to invest. On the contrary, it is an approach that tries to realize something new with the two interlocutors, both public and private, that can be of public utility. It is based on a co-design broadened to anybody who has ideas and time to rethink the city, and on *governance* paths that aim at innovation and at the enhancement of unused or underused resources to create a new value. Therefore, it means outgrowing the *sharing economy* which thus becomes, on the territory, *pooling economy*. The starting point is sharing something; then, the aim is to create well-being by designing or redesigning what exists. Starting from the bottom, actions are expressed with the purpose to contribute, initially, in the regeneration of the single spaces, and then—in the best hypotheses—of entire parts of the city, aiming at the efficiency and functionality of what is shared.²¹

In this complex phenomenon in progress, the aspect falling within our competence, as *interior and spatial designers*, is to understand which fields—and consequently which spatial logics—are involved in the phenomenon connected to the various activities of *sharing and pooling*, starting from those already widely implemented and experienced (*co-working, car pooling, food sharing*, etc.), up to the less obvious sectors still being developed. It is necessary to investigate how to *catalyse* in specific public/private urban spaces activities connected to the network, in a process aimed at completing the “*sharing relationship*” seen as a natural transit from logical to analogical. All this leads to a mental change, and not only physical, which is fundamental for passing “*from the shared public space*”—a type of the modern city of the 1900s—“*to the space that shares sharing*”, which can be put into practice in the emerging Wi-Fi city.

Two urban cases selected among the most recent and experimental ones are worth mentioning.

The first case is that of Seoul, currently considered the world capital of the *sharing economy*. In 2012 the city’s mayor, *Park Won-soon*, passed a plan to solve the various problems of the megalopolis (one of the most inhabited of the planet, with more than 25 million inhabitants), based on sharing spaces, products, services.

²⁰See the conference “*The City as a Commons: Reconceiving Urban Space, Common Goods and CityGovernance*” organized by LabGov—LABoratorio per la GOVERNance dei beni comuni—project carried out by Urban Law Center of Fordham University of New York in collaboration with International Center on Democracy and Democratization (ICEDD) of LUISS Guido Carli of Roma—organized, with the support of Fondazione del Monte di Ravenna e Bologna, of the Municipality of Bologna and Fondazione Golinelli.

²¹See Giovanni Battistuzzi, *Il FOGLIO, Ripensare la città e i beni comuni, dalla sharing alla pooling economy*, 3 November 2015.

Since then, with the support of the metropolitan council, more than one-hundred *start-ups and apps* have been created, among which: condominium car parks open to the public so as to optimize spaces unused during office hours; *Kiple*, a start-up that organizes the exchange of children's clothes; *Kozaza*, a platform for sharing apartments that also pursues the social aim to help the elderly feel less lonely, fostering the rental of empty rooms to young people, besides incentivizing the preservation of the *hanok*, the traditional house rented to tourists.

The second case concerns a recent project by Carlo Ratti—based on the sharing of spaces and ideas—who transformed a former American military village in Germany, the *Patrick Henry Village* in Heidelberg, into a 2.0 futuristic commune.

The designer and director of *MIT Senseable City Lab* in Boston said:

... the project was created and developed within the Internationale Bauausstellung (IBA), an initiative that has been promoting cutting-edge architecture in Germany for more than a century now, and that is currently involved in creating in Heidelberg a new idea of city based on knowledge. We started the project asking ourselves how would a “commune” be like today, based on the principles of the sharing economy. This led to the idea of a co-working and co-living village, where new housing dynamics can be tested.²²

The *Patrick Henry Village* commune aims at hosting about 4,000 people interested in experimenting a different type of lifestyle: students, researchers, families and whoever shares the principles (mutuality, solidarity, democracy) of the “good *sharing economy*” at the basis of the project. Actually, this “contemporary commune” envisages not only the sharing of physical spaces, but also and especially of services and ideas. The designers considered the value of an extrovert place capable of starting a dialogue with the rest of the city. A village in which relationships are formed dynamically, both in physical space and in digital space, through the sharing of ideas and services both in physical environments and on a digital platform.²³

Therefore, the typical environments of the 1950s—houses, schools, garages, stores—will be reconverted, preserving the American suburban design. The idea is to maintain the small houses with garage, but to connect them with other houses. The ruined structures will become farmhouses: nature will be an integral part of life at the *Patrick Henry Village*. Common spaces and infrastructures will be the hinge of the project, which aims at realizing flexible environments. The most representative building of the project will be the *Maker Palace*, a large *open source* space that users may adapt depending on needs, whereas garages will become creative laboratories, since even mobility will be shared, thus limiting the idea of private cars and creating new lifestyles.

²²Carlo Ratti, Professor of *Practice of Urban Technologies* at the MIT of Boston (USA).

Interview by Cristina Gabetti in *The good life*, n.5, Nov/Dec. 2016

Carlo Ratti Associati ®—Patrick Henry Commune press release—September, 27_ 2016—pr@-carloratti.com, <http://www.carloratti.com/project/patrick-henry-commune/>.

²³cit. Interview by Cristina Gabetti in *The good life*, n.5, Nov/Dec. 2016.

6 Interior and Spatial Design for Sharing Spaces

While architectural projects are bound to the urban structure, the advantage of *Interior and Spatial design* is to be very agile, expressing itself on a minor scale that can be disseminated in several episodes. It is systematic, often aiming at a *possible* condition, even removable and/or transferable, and can be updated. It also acts at environmental level and sometimes prizes on *performance* and ephemeral aspects connected to temporariness or virtuality (sensitive environments, integrated and increased reality). It dialogues perfectly with the most diverse environments: from the historical and precious environment, to the industrial one to be refunctionalized, to the most neglected and *dirt* space,²⁴ identifying each time appropriate characters, ways and languages.

It is an approach characterized by its ability to put in relation, synthetically and through variables, the most exquisitely configurative aspects of the urban spaces with those, each time, functional, symbolic, conceptual, temporal, cinematic; basically, with all the mutable elements that constitute a large part of the contemporaneous widespread urban scenarios. Therefore, it allows to dialogue perfectly with the complex virtual reality, made of *apps* and *networks* that defines the precious collective intelligence.

SERSE (www.serse.polimi.it) with the *Spatial Design Studio # Sharing.Lab Milan + London* studied these potentialities through an experimental approach, verifying how the physical condition of particular public/private spaces can become the place chosen to share *sharing* activities. In other words, how to attract in shared urban spaces activities that for the nature of the actual phenomenon are considered mainly digital, belonging to the big Web. Through the analysis of more than 130 *apps and start-ups*, various scenarios and project situations were simulated for sharing urban spaces that mediate the service offered on the Web *face to face*, as shown in Chap. 12. This has enabled to create a connection—through the qualitative action of design—between the *digital/virtual* space and the *analogical/real* space and consequently between the digital behaviour and the analogical behaviour.

²⁴blog, Giovanna Piccinno Interior Design Studio, <http://isdirtmatteroutofplace.tumblr.com>.