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Maurizio Bruglieri *Editor*

Multidisciplinary Design of Sharing Services

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Multidisciplinary Design of Sharing Services

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Contents

Part II Case Studies

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 matericity 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 workaround—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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Maurizio Bruglieri

Part I
Multidisciplinary Tools

A Service Design Approach to Analyse, Map and Design Sharing Services

Beatrice Villari

Abstract This chapter explores the relationship between sharing economy and service design to describe how the latter can contribute to innovation in designing sharing services. In the initial part of the chapter, a short summary on innovation in services and its relationship with the service design is described. In the central part, some case studies analysed during the SERSE research are reported in order to define a model of analysis based on three design features for designing services in and for the sharing economy: collaboration, participation and networking. In the final section, some design reflections on the contribution of service design in the sharing and collaborative economy are outlined.

1 Innovation in Services and Service Design

In recent years, design has been considered as a major factor in business strategies, social activities as well as policy-making processes: the non-technological innovation is one of the strategies to support growth and prosperity through approaches, tools and methods focused on human factors (European Commission 2009). Design is currently deemed a multidisciplinary activity capable of making sense of business, social and environmental challenges providing holistic solutions able to differentiate products and services in the market or to create new ones. Design outcomes are mainly based on people needs; they are often co-created and co-delivered through collaborative practices aimed at creating value for citizens and private and public organizations. Thus, designers have an important role in promoting innovation at different scales and in different sectors and contexts. In the design discipline, one of the growing fields is the service design one. We live in a service economy (Fuchs 1968; Gallouj 2002; Schettkat and Yocarini 2003), and we are surrounded by services that need to be well designed. For a long time, services were mainly related to products and they were often perceived to be less important

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than manufacturing. In the seventies, service production became part of the marketing and management language, and service theories emerged. One of the most known is the IHIP model provided by Zeithaml (1985) describing service as intangible, heterogeneous, inseparable in its production and consumption and perishable, namely unable to be stored or saved. According to this model, design, manufacturing and delivery services need to be viewed differently from products. One of the main differences is the role that users play in creating the service value (Vargo and Lusch 2008, 2016). The essential link between providers and consumers was explored by Vargo and Lusch 2004 when they coined the term Service Dominant Logic describing services as applications of skills for the benefit of another party (Vargo and Lusch 2004). Users are put at the centre of the service processes: if a service is not experienced, it does not exist, and the value is not created. Users actively take part in the interaction processes with the service provider and the physical and digital elements making the service tangible, namely creating interaction between people, places, devices, communication and the other components that make a service visible and tangible. Users are also described as co-creators in the value creation process that consists in the moment of use (value-in-use) (Arvola and Holmlid 2016; Vargo and Lusch 2016).

Although the marketing and management theory explored the importance of service in the current economy, the notion of innovation in services is quite fragmented. Leiponen (2005) describes service innovation as a new service that introduces novelty in its development, namely in concepts, processes, infrastructures or business models. Service innovation can refer to technological and non-technological innovation according to soft or hard components that are involved in the new service development.

From a design point of view, the service innovation is described in relation to the value creation process created by the encounter between providers and users (Sangiorgi 2004; Vargo and Lusch 2016). The value is created by the connection between the provider and the users and belongs to the experience in using the service. This means that the front-end of the service is an important part of the overall structure just as much as the back-end one. Services need to be designed and delivered not only by having in mind business, marketing and technological aspects, but also by creating memorable, smart, seamless journeys that respond to a wider spectrum of users' needs.

The design discipline is acquiring a greater importance in the innovation processes. Design thinking is becoming a crucial element that organizations apply in their internal process to transform product and services as well as organizational processes. Further, a vast number of agencies are shifting from the traditional business consultancy to a more design-oriented one. Adopting the well-known design definition given by Simon (1969), 'design is the transformation of existing conditions into preferred ones' (p. 111) we can consider design as a lever to activate, promote and deliver changes at many levels of our society, and make them real. In the service domain, service design is acquiring a vital role to help organizations in delivering more efficient and efficacy offerings. 'Service design helps to innovate (create new) or improve (existing) services to make them

more useful, usable, desirable for clients and efficient as well as effective for organisations. It is a holistic, multidisciplinary, integrative field' (Moritz 2005, p. 4). Service design helps to introduce creatively new concepts and solutions adopting an iterative process focusing on user research, concept development, visualization techniques and continuous prototyping activities.

In their recent book Stickdorn et al. (2018) outline six key principles characterizing service design: it is human-centered, collaborative, iterative, real, holistic and sequential, namely linked to the sequences of a customer's journey. This highlights the importance of making the service experience tangible and holistic considering the overall service from different stakeholders' perspectives and related to the contexts in which it is performed. On the one hand, service design is used to improve user satisfaction and brand fidelity, and on the other hand, it helps managers to deliver better services, improving the existing ones or creating new ones and helping organizations to innovate.

In this chapter, service design is related to the sharing economy issues to understand how sharing services are designed, and what are the characteristics and the key elements to be considered when designers are faced with sharing issues.

2 Why Designing Services Is Valuable in the Sharing Economy

As also described in Chaps. 2, 4 and 5, the sharing economy is changing the way to do business and to provide and experience services. With the emergence of the service society, we have been accustomed to the shift regarding the idea of not owning more products but access to services. With the fast diffusion of the sharing economy, we also understood that services could also be co-created and co-delivered thanks to the power of the crowd and the peers.

Several reasons justify the rapid growth of the sharing economy. One is the different perception of customers of the corporate world as a result of the financial and economic crisis; besides, new technologies helped the growth of online peer-to-peer market (Dervojeda et al. 2013). Consequently, companies are changing together with their roles in creating new products and services and innovating design, production, distribution and delivery processes. From business-to-business and business-to-consumer, now we are facing a consumer-to-consumer market that impacts on the way we conceive strategies and solutions.

Notwithstanding the large implications of the sharing economy on businesses and society, there is a lack of scientific knowledge around the topic, and academic definitions are still fragmented. The European Commission confines its meaning 'to companies that deploy accessibility based business models for peer-to-peer markets and user communities' (Dervojeda et al. 2013, p. 3). The terms sharing economy, peer economy, collaborative economy, on-demand economy and collaborative

consumption are often used as synonyms. Botsman one of the authors of the very famous book *What's Mine Is Yours: How Collaborative Consumption is Changing the Way We Live* (2010), in an educational article appeared on the FastCompany online magazine in 2013 outlines a panorama in which the different notions are described. The author defines sharing economy as an economic model based on sharing underutilized assets for monetary or non-monetary benefits (Botsman 2015). The collaborative economy is defined as an economy build on distributed networks of connected individuals and communities bypassing traditional intermediaries. Collaborative consumption is defined as an economic model based on sharing, swapping, trading or renting products and services based on access to services rather than owning goods. Peer economy is described as a slice of the sharing economy that is mainly peer-driven model.

All these models bring advantages to the final user. Customers can access a wider range of offerings in many fields, such as mobility, hospitality and household, as well as health. They can easily find alternatives to the established market in a more flexible, cheaper and often more efficient way.

Hamari et al. (2016) identify some key aspects of the sharing economy that motivate users in adopting these solutions: online collaboration, social commerce, online sharing and ideological considerations. Online collaboration is mainly related to the growing use of ICT technology that supported the spread of consumer-to-consumer exchanges. Participation in the online platform is influenced by different factors such as reputation, enjoyment, sense of trust in the provider and the community of users. Social commerce is related to the online and offline sales of products and services. People are motivated to join the platforms to save money and for individual enjoyment as well. Online sharing is the way for people to put in common information, goods, photographs, music and so on. It is the online community-based way to create interests and business around topics or activities using Web platforms. In addition, ideological considerations motivate users in utilizing platforms to support collective actions (e.g. using Twitter for the election campaigns), so people use sharing mechanisms, political purpose or anti-consumerism activities for example. Sustainability issues and personal attitudes are also factors that can influence people's participation.

The fields of application of sharing economy are variegated: mobility and transports, housing and accommodation, tasks and job, urban environments, manufacturing, education, public services and so on. These are linked to diverse contexts of application such as governments, smart cities, welfare and start-ups, just to mention a few. Sharing economy is also explored in different fields of innovation, such as design-driven innovation, social innovation and co-design initiatives, as well as in the marketing and management fields.

Service and businesses based on sharing models are spreading rapidly, and the outlook looks promising for service design regarding research and professional activities.

Sharing services are based on interaction and trust among people and the human-centred approach that characterizes service design can become a major lever to support innovation in this field. Services need to be designed to improve experiences, interactions and business models, as well as organizational issues. Although service design contributes to redesign services, service design can help support the development of new enterprises that are closer to the final users' needs, differentiate offerings from competitors and promote innovation in skills, processes and approaches. Thanks to the adoption of service design, sharing economy organizations can create new offerings in a more people-centred and tailored way to increase desirability and usability, efficiency and effectiveness of service performances (Polaine et al. 2013).

3 Examples in the Sharing Economy Field: A Service Design-Driven Map

The sharing economy panorama is vast. A huge number of businesses and initiatives are growing around the world in many sectors and at different scales. During the first part of the SERSE project, the need for understanding the sharing economy panorama from a disciplinary point of view emerged, in particular to explore the link between service design approaches and tools and sharing economy topics.

In the design field, the importance of adopting collaborative approaches has been explored by Ezio Manzini (2008) who can be considered a pioneer theorist and recognized the emerging interest in sharing issues and people-driven actions. In the book 'Collaborative services. Social innovation and design sustainability', Jegou and Manzini (2008) explore the concept of collaboration in the field of services highlighting interesting solutions that create value for specific communities, mainly adopting bottom-up approaches. The authors describe different practices, such as co-housing, neighbourhood-based services, micro-enterprises initiatives from a sustainability and social innovation perspective. In particular, they propose the concept of 'creative communities' as groups of people that cooperatively conceive, support and deliver innovative solutions at different scales. Collaborative services, enterprises and organizations are the result of such initiatives (see also Chap. 2).

Nowadays, the notion of collaborative services is widespread and refers to those services that are based on peer-to-peer exchange and diverse forms of collaborations between people, with or without intermediaries, enabled or not by digital platforms.

Accordingly, starting from the well-known definition of collaborative consumption and the related business models (B2C, P2P and B2B) described by Botsman and Rogers (2010), we explored the current framework of experiences in

the sharing economy field at national and international levels. The aim was twofold: to identify interesting case studies to be analysed from a service design perspective on the one hand, and, on the other hand, to gather insights to support new collaborative services to be implemented in the academic context.

Following a phenomenological approach, the aim of the research was to understand the key features of the initiatives mapped to create a hypothesis on the explicit or potential role of design and service design in this area of knowledge.

At the early stage of the process, we searched for institutions, companies, research centres that already explored the sharing economy issues and the related initiatives, and we did a literature research to describe state of the art in this field, both from a disciplinary and an extra-disciplinary perspective.

The current academic panorama lack of a structured analysis of the sharing economy phenomena and the main reflections are based on particular fields of application, such as shared mobility, housing, accommodation or new manufacturing. Many studies are dedicated to exploring the potential of the sharing economy as a driver of change in the private and public sector, to inquire the capacity to foster innovation through participative and collaborative actions, and to describe how new business and start-ups can benefit from sharing economy. Sharing economy is also described as an alternative consumption and non-monetary marketplace (Albinsson and Yasanthi Perera 2012). The ICT plays an important role, in fact, a significant number of initiatives are based on Web platform that become the new intermediary actor between peers, companies or between providers and users creating a real digital sharing economy (Dervojeda et al. 2013).

In other cases, some critical issues are explored regarding, for example, the trust issues (Botsman 2012a, b; Dakhlia et al. 2016), the law and regulation problems in different contexts (see Chaps. 8 and 11), as well as the negative effects that sharing economy has when it is used as 'on-demand economy' related, for example, to the job regulation as it happened for the Uber's offering (Yaraghi and Ravi 2017).

On a different level, we explored the phenomena of sharing economy through various case studies developed on a global scale. In particular, two interesting existing collections of case studies were recognized, one at the national level and another one at the international scale.

The first collection is the national archive of the sharing initiatives done by Collaboriamo.org platform. Each year, it collects all the Italian services and businesses based on sharing issues that are listed in an online repository. Annually, they propose a map based on four drivers (polarities): these are 'access' and 'reuse' positioned on the horizontal axis and 'goods/time/credits' and 'money' positioned on the vertical one (Fig. 1). The polarities create four quarters to define the experiences concerning temporary or permanent transfer (vertical line) and regarding transaction mediated or not by money (horizontal line). For example, initiatives like Airbnb are in the quarter defined by the operation with money with a temporary transaction, while Couchsurfing is positioned in the opposite quarter that includes the non-monetary transactions.

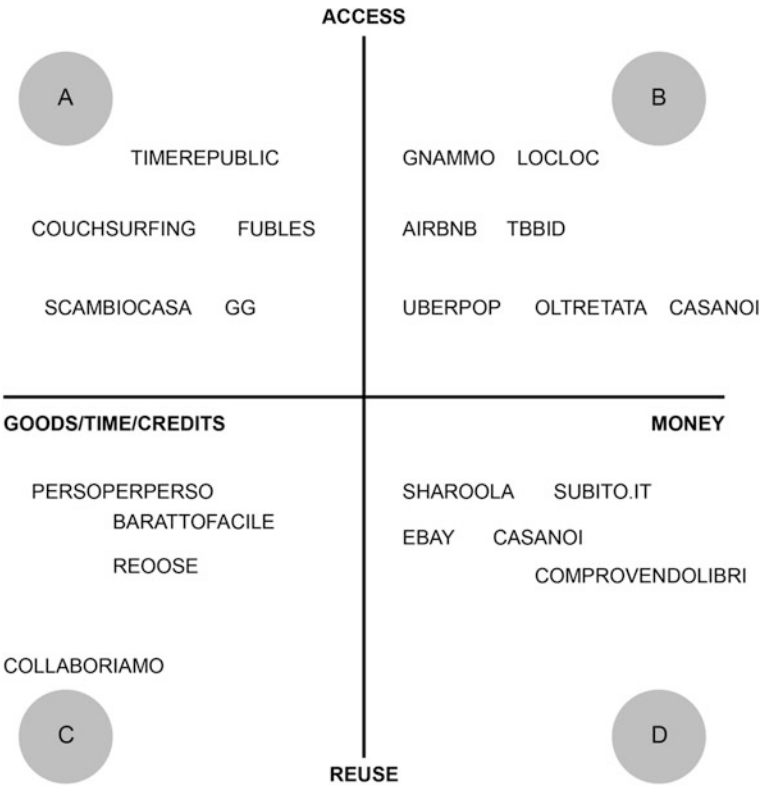

Fig. 1 Italian archive of the sharing initiatives-Adapted from Collaboriamo.org matrix

The second collection is the Crowdcompanies.com one. This is a market map to help understand the panorama of the collaborative economy. Crowd Companies is a council acting on social business and start-ups supporting them in their development. Periodically, they publish what they call the honeycomb of the collaborative economy. The third edition (the last one) was released in March 2016 and is the result of a review of more than 460 start-ups; 280 were chosen to be included in Honeycomb 3.0. The map clusters the different fields of application where companies grow. The map has at the centre the sharing economy users, the so-called empowered people described as makers, co-creators, crowd-funders, peers and customers. From the hexagonal cell at the centre of the map, they build the honeycomb structure representing different fields of application, some of them very populated while others can only count a few initiatives.

In the 3.0 version, the map entails 16 categories:

- space (divided into personal and work space);
- food (distributed in food delivery, shared food and shared food preparation);
- utilities (telecommunications and energy);

- mobility services (described as support, valet services, ride as a service); services (divided into personal and business);
- logistics (shipping, local delivery, storage);
- analytics and reputation (described as driver services, identity, and reputation, rent service);
- corporations and organizations (divided into platforms, supply chain and employee services);
- vehicle sharing (loaner vehicles and loaner boats);
- health (services and P2P);
- goods (divided into maker movement, loaner products and pre-owned goods);
- money (cryptocurrencies, crowdfunding, money lending);
- municipal (platforms and city-sponsored bikes);
- worker support (rent services, insurance, resources);
- learning (instructor-led, peer-to-peer and book sharing) and
- wellness and beauty.

Well-known examples placed in the map are Etsy.com, Bla Bla Car, Uber, Taskrabbit together with other initiatives such as Instructables or Kickstarter just to mention few.

The analysis of the Collaboriamo.org and the Crowdcompanies.com initiatives was also supported by an additional research on examples to identify promising areas to direct the research results from a service design perspective. The other case studies were mapped and analysed using a card designed ad hoc for the research project. It describes the typology, the way of providing the service, the scale of application, the promoter and the founder, the geographical area, the service language, the activation date, the business model and the turnover, the system of touchpoints, the number of users, the UX, and the main competitors.

The aim of the case analysis was to focus not only on the quantitative data but also on the qualitative ones concerning the user experience and the system of digital and physical interfaces adopted in the services. In particular, the latter ones are helpful to analyse the interactions between users and providers and their quality regarding design results.

Out of more than one hundred examples selected in the preliminary phase, 23 case studies were selected and examined concerning different topics and various scales of application. This final list includes both well-known examples on a global level and initiatives based on local communities at small scales.

All the actions were analysed through an interpretative model. In particular, we created two matrices to map the extent of the initiatives (from local to global) intertwined with use of the digital (digitally based or analogically based) and with the vocation of the initiatives (social-driven or business-driven). Besides, for every case we identified a user category, for example, students, citizens, food or sports lovers.

The final list of selected case studies is:

1. Abito (hospitality). It is a service for those who live in condominiums or for those who want to create a community with their neighbours to exchange objects and/or activities among the residents.
2. Airbnb (hospitality). The very famous platform to rent unique apartments from peers for a limited period. It is active in 190 different countries.
3. Bed and Learn (hospitality). It is a platform based on the idea to share knowledge or skills in exchange for hospitality supporting a specific community of travellers.
4. Couchsurfing (hospitality). It is a well-known community-based service that offers travellers the possibility to be hosted in apartments, connecting people who are travelling and people who have free rooms at their home. Travellers share the accommodation with the owner having an immersive experience in the local reality.
5. Coursera (education). It is an online platform in which universities and organizations offer free lectures on a wide range of topics.
6. Depop (e-commerce). It is an APP-based service created to sell and buy items directly from your smartphone.
7. Docsity (education). It is an international platform dedicated to students for exchanging teaching materials, notes and contents.
8. Epart (public goods). It is a service that allows citizens to interact with the Public Administration to report inconveniences and disagreements in public goods.
9. Feastly (food). It is a community for good food lovers who want to try food prepared by talented chefs.
10. Fluentifly (education). It is a platform dedicated to people who want to learn a foreign language. It matches native speakers with people interested in learning specific topics or languages.
11. Fred (culture). It is a social network dedicated to book sharing with the possibility to meet people interested in literature.
12. Fubles (sport). It is a platform where people can easily organize football matches, create teams and find a location where to play.
13. Instructables (design). It is a Web platform to share Do It Yourself objects creating catalogues of products to be sold.
14. Landshare (farming). It is a crowd-based platform that matches people looking for lands to be cultivated with others with untamed spaces available.
15. Leftloverswap (food). It is an APP-based service that creates links between people having leftover food with people who can use or eat it.
16. LocLoc (goods). It is a Web platform that allows people to rent non-common objects (such as gardening tools) from a catalogue created by the online community.
17. Metwit (weather). It is a crowdsourced meteorological service.
18. NextDoorHelp (goods). It is a local Web platform to share unused items.
19. Oltretata (services). It is a platform that allows families to find a babysitter close to home thanks to a huge database of babysitters and the possibility to geo-localize them on a map.

20. Openwear (design). It is an online platform for small fashion designers where you can open your own space and get information about your business.
21. Slowd (design). It is a local platform that matches a community of local artisans with designers to produce new objects and create value for the local enterprises.
22. Teatroxcasa (culture). It is a platform to host theatre performances promoted by different troupes in private spaces, such as living rooms or gardens.
23. Via Fondazza (services). It is a social street where citizens offer free services in exchange for help.

These initiatives are not representative of the entire sharing economy world, but all of them are services characterized by different aspects and experiences.

Some of the experiences are only digitally based, while in others human interaction is fundamental. From a service design perspective, the link between physical and digital touchpoints is crucial. Sharing services are based on the idea of exchanging something, and this experience needs to be coherent with the service promise and the service offering. Physical places, as well as human behaviours, can

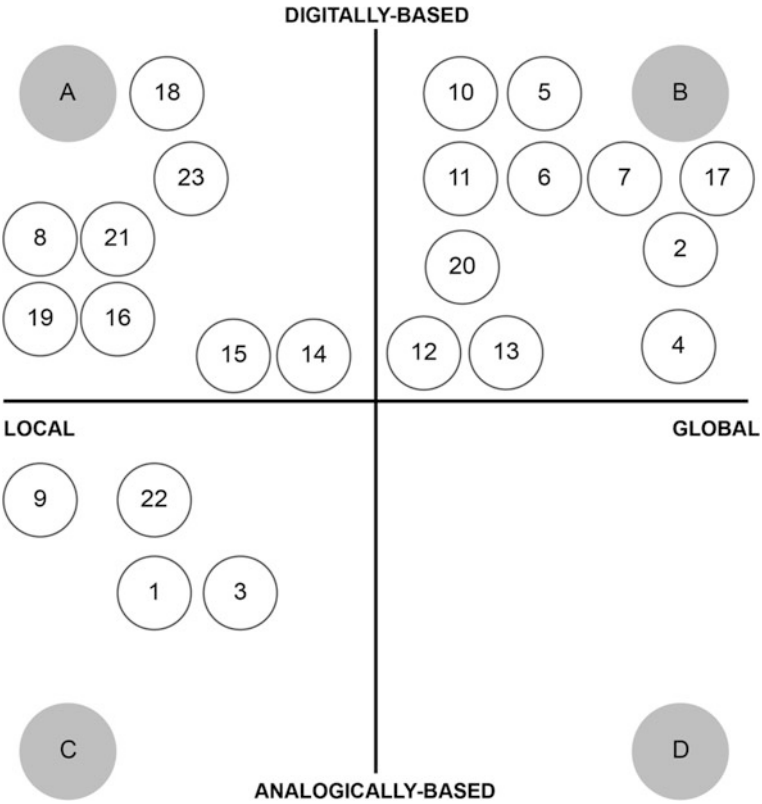

Fig. 2 Sharing services map (Local/Global—Digitally based/Analogically based)

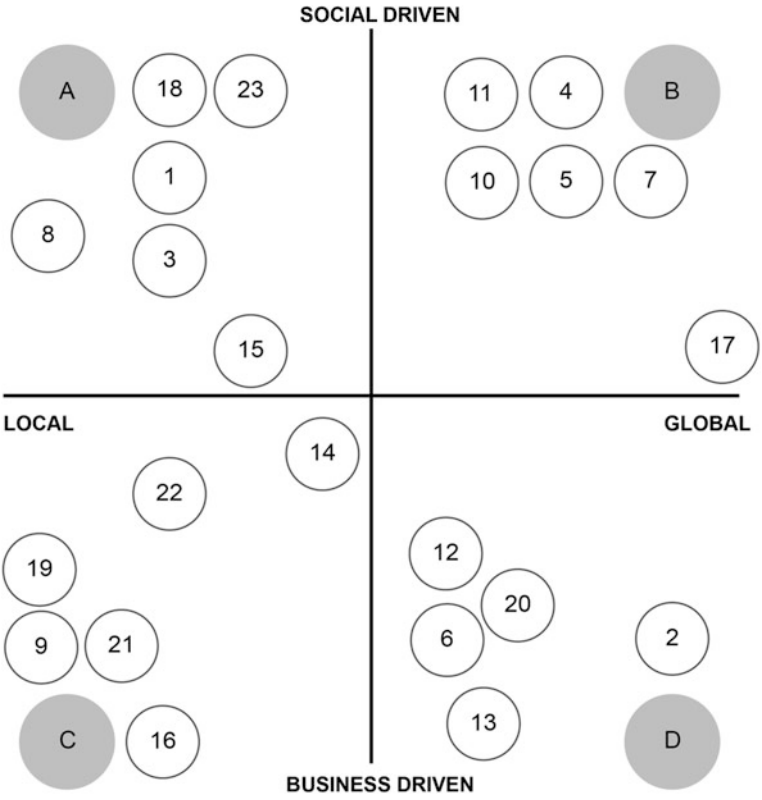

Fig. 3 Sharing services map (Local/Global—Social-driven/Business-driven)

influence positively or negatively the service experience. Designing a sharing service does not only mean creating the Web platform, but also developing all the elements that characterize the experience coherently. In the event that the digital platform is not the sole intermediary between the user and the provider, the design of the system of activities and touchpoints becomes fundamental to deliver a service that is reliable, well-communicated and well orchestrated in all its elements (Figs. 2 and 3).

Another issue is the business model of the services. In most cases, sharing services are associated with social problems and non-monetary activities. The sharing economy activity across Europe has increased over the past two years generating revenues of €3.6bn (Vaughan and Daverio 2016); this means that many businesses are growing in this area and make a profit. From a service design perspective, profit and non-profit initiatives need to be considered in different ways both from the provider and the user's point of views. The service business model influences the design, the development and the delivery of a service about the final user as well. Offerings can be similar, but the ultimate experience changes if a service is socially driven or business-driven. Trust issues, the brand reputation,

the capacity to access the service and to clearly understand the offering depend on the business idea as well as on the quality of the designed process and elements.

The cases analysed have different levels of design maturity. Some initiatives can be considered as design-driven, one example being Airbnb. The founder is a designer, and the platform is created to have a consistent look and feel with the service purpose. Moreover, they offer extra services to the users to better communicate their announcements. Expert photographers are available to take pictures of the apartments to be published online. Other initiatives have a lesser degree of design maturity, this means that the design of the interfaces has a low design aspect and/or the whole experience is fragmented and not perfectly related to the users' profiles.

4 Designing Services in/for the Sharing Economy

If we think how to design services in the sharing economy, we need to consider which are the design processes, tools and approaches that this entails. First of all, services, initiatives and businesses are based on collaboration. Secondly, they strongly depend on people's motivation and behaviours. Thirdly, they use the Web platform as the primary reference to the activity.

When referred to the design field, collaboration is linked to the participatory practices that involve users in defining a solution, supporting the idea that social creativity is a fundamental element in the design process, especially in its early stage. Moreover, collaborative approaches are those based on multidisciplinary practices and skills that collaboratively work on specific problems. Co-design (Binder and Brandt 2008; Sanders and Stappers 2008) is the disciplinary approach dealing with these issues. It considers final users as a valuable resource in the design process that brings a specific knowledge which is often a practice-based one. Charles Leadbeater (2007) proposes the idea of we-thinking describing collaboration as a way to innovate, referring for example to the crowdsourcing initiatives or the social networks as a medium to amplify the possibility for people to share ideas with a wider community in a short time. Other authors, such as Von Hippel (2005) and Surowiecki (2004), discuss the concept of 'democratized innovation' or the 'wisdom of the crowd', highlighting the importance of the mass in producing change.

Jégou and Manzini (2008) describe this phenomenon from a social perspective, arguing that designing in this framework means creating networks, namely developing complex systems of design processes that involve different types of stakeholders as well as individuals to put into practice solutions facing small-scale and large-scale problems. From a design perspective, this means considering the interwoven relationships between people, technology and contexts.

Designing services for and in the sharing economy can face different levels of collaboration: on the one side, the idea that services con be co-created and collaboratively developed (see Chap. 2), and on the other side, the solutions need to be

developed to support collaboration among people and to allow them to be collaborative. In both cases, the final result has to create value both for the user and for the provider.

Participation, collaboration and networking are described by Mortati and Villari (2013) as a set of skills for designers faced in particular with social innovation issues. Collaboration is defined as the need and the ability to creatively create connections between different actors to negotiate solutions, namely leveraging collective creativity and listening to people's needs. Participation is defined as the capacity to empower stakeholders supporting learning processes engaging citizens as well, and emancipating them to become an active player in the process and triggering and developing social sharing platforms. Networking outlines the importance of a system thinking to create a seamless experience of all the material and immaterial elements of a solution.

Service design mainly refers to the design of the offering, the interactions between the user and the service, and the system of touchpoints that make the experience tangible and usable (Sangiorgi 2004). In the sharing economy framework, the interactions between people and between the community and the platform become crucial, so the participation, collaboration and networking elements become essential.

When referring to the case studies analysed, it is possible to describe how collaboration, participation and networking concepts are put into practice.

4.1 Collaboration: Create New Interactions Between Actors

Slowd is a platform that offers a 'Design at Zero Kilometer' manufacturing in which designers can propose ideas, prototype them with craftsmen, and sell the product online. In the Slowd manifesto, we read that 'we have to produce what people need when people need it and where people need it. This means supporting local economies, and networks of small producers of high-quality goods, once again gathering people and processes in support of the culture of know-how' (slowd.it/en).

They worked on the concept of collaboration and created a solution that can be described as a 'network of networks' of artisans, designers and final users creating new connections between different actors in a *designerly* way. The community building process was a fundamental part of the journey to structure the service system and to involve a good number of artisans able to produce different typologies of artefacts. Thereafter, the designers' community was linked to the local artisans' one following the idea to support a model of a sort of 'zero kilometer production' applied to the manufacturing. Besides, the Slowd Web platform is a tool to enable connections between the stakeholders involved, creating stories about artisans, designers and about the final products developed. Moreover, concerning the idea of designing complex systems and networks, Slowd.it created a virtuous circle to support local economies, create social value and enable new businesses.

This is a service implemented and designed explicitly by adopting a service design approach (the initiative participated in the XXIII ADI Compasso d'Oro), namely listening to the users' needs (in this case artisans and designers) and building a solution that considers different user experiences, from both the back office and front office side. The provider and the networks are the co-producers of the solution: without the collaboration between artisans and designers and end-users, the on-line platform would not have worked.

Another case that has collaboration as a design driver is the Couchsurfing community. It is a vast international community that offers the possibility to stay with locals when travelling. 'Couchsurfing was founded in 2004 by a small group of travellers and cultural exchange enthusiasts determined to change the world by providing greater access to the kinds of meaningful travel experiences that depend on connecting with people' (https://www.couchsurfing.com). Currently, they count more than 14 million members around the world.

They first recognize a widespread need of people (especially young people) to travel and have authentic experiences and save money. The service connects members to a global community of travellers and helps them find a place to stay matching them with local communities that share their home. Although the Web platform is the primary touchpoint of the service, they weekly organize events in public spaces such as bars or coffee shops to create new links between people that already are couchsurfers or with newcomers. From a service design perspective, they were able to create an impressive critical mass to support the service sustainability, they created an environment based on mutual trust and built a community that is alive not only on the internet but in the real places as well. The overall experience is the result of designed activities and spontaneous ones, in which the human factor and the collective creativity are essential elements.

4.2 Participation: Fostering the Empowerment of the Actors Involved

The other key factor in the sharing solution is participation that can be described as the capacity and ability to be part of a wider community and enable social interactions. Via Fondazza is the initiatives that launched the idea of the social street in 2013. The social street is aimed at creating stronger networks between neighbours to share needs, exchange professional skills and knowledge and carry out collective projects, possibly at no cost and without creating new Web platforms, but only creating closed groups on Facebook. The social street is an informal and non-hierarchical group where people join the community for different reasons and with different roles. Some participants have active roles in promoting, managing and organizing initiatives; other people subscribe to the initiatives according to specific needs. Participation and motivation are founded on the success of a social street, and the community involved is part of a wider learning process regarding local contexts, skills and knowledge brought by the other members of the

community. Values such as sociality, gratuity and inclusion come from these kinds of initiatives that follow bottom-up and informal processes. The challenge for designers is to recognize the success principles and adopt them in other contexts and at different levels considering that friendly and spontaneous activities, too, are part of a wider collective design process in which peculiar democracy rules exist. This model is very close to the concept of 'creative communities' described by Manzini (2005, 2008) and to his idea that everybody designs (Manzini 2015).

Another example in which participation is important is the ePart case study. This is a Web platform that allows citizens to interact with the Public Administration by reporting discomforts and disadvantages in their municipality. It is based on the idea to create stronger links between citizens and to use collaboration as a tool for managing the public goods more efficiently. These kinds of initiatives are part of a wider framework that includes actions related to participatory democracy and e-government. ePart is an APP and a digital platform through which citizens can report disadvantages in the city and locate them on a map, attaching a photograph and sending a message to the municipality. While the public administration is solving the problem, people can follow the status of the work until its complete resolution. Municipalities can also manage and monitor the intervention procedures directly from the platform. In this case, the platform enables people to be active players in specific contexts engaging them in a stronger relationship with the Public Administration. On the other hand, municipalities reinforce the sense of trust in the institutions by the citizens and can reduce the costs to monitor the territory continuously.

4.3 Networking: The Capacity to Merge Tangible and Intangible Elements

The case of Airbnb also describes the importance of the concept of networking in the design of sharing services. Airbnb is one of the main companies in the sharing economy context at a global level and is one of the most famous companies operating in the sharing economy that uses design as a strategic lever. As we all know, Airbnb offers the ability to rent your apartment through a Web platform. Since the launch of the service, numerous initiatives providing a similar service are born, but which is the element that differentiates Airbnb from the others? Its offer is designed in such a way as to build a recognizable and seamless experience for both those who offer the apartment and for those who use it.

The platform is designed in its back office to ensure that the host manages its profile and its proposal simply and intuitively. The service to include a professional photographer increases the quality of the offer and makes the storytelling of the entire platform recognizable and consistent.

From the user side, the access, the use and the interaction with the platform and with the hosts are very fluid and straightforward; this facilitates the construction of a trust relationship between the provider and hosts.

Another case in which the concept of networking is clear is that of Fubles. Fubles.com is a 'Social Sport Sharing Platform' connecting a huge sports community across Europe. It connects players, matches and sports centres of a particular area allowing people to organize and participate in sports games. It boasts more than 600,000 players and more than 200,000 matches organized. Fubles is a platform designed to create sports experiences between non-professionals through relations between people and places. The offer is intended to build a holistic experience between the digital and the physical elements. In this case, the material component is crucial because the relationship between people and the connection with the sports centres are the elements around which the real practice revolves that finally takes users to positively or negatively assess the service itself.

5 Some Reflections on Research and Practice to Design Services in and for the Sharing Economy

As stated in the previous paragraphs, the shift from owning goods to access to services is characterizing the current economy. Services surround us, and we daily participate in multilevel experiences. The sharing phenomenon has increased the use of products and services through renting, bartering, swapping using technologies and social networks that allow people to be more socially connected. This new paradigm presents unlimited opportunities for consumers and producers to reinvent the way of buying and selling stuff, to access services, knowledge and skills. It poses an enormous number of challenges for businesses, organizations and institutions, as well as the civil society. It can rapidly change the way of thinking about public and private services and offerings.

In this framework, designing services for and in the sharing economy can be crucial to support innovation, to propose solutions that are close to users' needs and to create seamless experiences that bring value to companies and society.

Stokes et al. (2014, p. 11) identify some common traits in sharing initiatives that can be related to the overall design process:

- They are enabled by Internet technologies;
- They connect distributed networks of people and/or assets;
- They create value from the unused capacity of tangible and intangible assets;
- They encourage interactions and trust;
- They embrace openness, inclusivity and the commons.

Following this path, we can describe some guidelines to take into account when designing sharing services.

5.1 Put the User at the Centre of the Design Process and the Sharing Solution

Creating the right match between providers and users is an important success factor for services. The use of user-centric approaches and tools can help us to better understand how people think, what they do in reality, how they actually interact with objects, technologies, people and environment. User research is a fundamental step in the service design process to analyse users' needs and to comprehend how people really interact with the service during the different steps of the journey, in order to frame the overall user experience related to the tangible and intangible service components. The user journey considers activities that people do before using the service, such as searching for information, activities done during the utilization of the service from the first access to the end of the experience, and those that people do after the experience ends, like sharing comments with the online community.

Understanding users' behaviours also means collecting data about them. User research is typically qualitative (Polaine et al. 2013) and is mainly based on user observations aimed at gathering insights about daily activities, emotions, motivations that guide (or not guide) the use of a service.

To innovating services, the link with the final user is a crucial point, it is even more so when the services are based on relationships between people as in the sharing economy. The sharing services are intrinsically related to the relationship between people and therefore to their motivation, to their interests and to the dynamic interaction between peers. From the service designer's point of view, this entails understanding the relational dynamics, the real motivation to participation, the real availability to share something. This then needs to be transformed into a reliable solution and the design of its touchpoint. Understanding users and their needs and behaviours is one of the ways that the designers have to propose services that really work for both consumers and providers and solutions that can use the sharing power to create value for people and society.

5.2 Support Service Prototyping and Testing

Another important activity in the service design process is prototyping. Prototypes help designers and businesses to reduce the possibility to fail. Indeed, they represent a way that service designers use to validate, reframe and share ideas and processes (Blomkvist 2011, 2012, 2014; Wetter-Edman 2011). There are different types of prototype techniques that can be related to experiences, interactions and products. Prototypes have been used since the very beginning of the service design process also to validate service concepts. For example, service designers perform user journeys and interactions between users and providers through experience prototyping and role-playing (Miettinen 2009) that allow them to understand how the

performance could be when the service is implemented. On the tangible level, service designers need to prototype the touchpoint system. In this case, too, many types of prototypes can be realized. They can be environment and interiors, products, digital devices and communication elements that can be tested, for example, through mock-ups or digital wireframes.

Many sharing platforms and services come onto the market in beta versions to acquire knowledge about how people use the service, and how people interact with the service interfaces and offerings to gather information useful to improve the overall system. Prototyping and testing have also an impact on the business. Prototyping the physical elements and the experience can help anticipate problems and reduce risks of failures. In the sharing panorama, people need to interact with each other, and these interactions are not fully predictable a priori. The service prototype helps companies to better design the final solution according to users' behaviour, refining the offering or the business model for example.

5.3 Digital Interfaces Are not (the Only) Service Interfaces

Designing for and in the sharing economy entails digital services and interfaces. Organizations and providers need to create platforms built around the real user experience. Platforms, social networks and APPs help people build communities and links that without the use of technology would not exist. Physical and digital connections, collaboration, interactions are the engine of the sharing initiatives. Services and solutions need to enable these mechanisms, reinforce them and make them evolve. Designers have to create interfaces and platforms that are coherent with the brand and with all the components that characterize the services. Designing a beautiful and functioning interface is not enough (although it is crucial), and UX/UI processes need to be linked to the wider service design process. This means connecting and orchestrating all the digital touchpoints and all the physical components that make the service tangible.

The design of a sharing service must, therefore, consider all the elements that characterize the overall experience. Even when the main interaction is digital, it is also important to consider the physical elements that give visibility and recognition to the service and the brand. For example, what happens when the users meet physically? What occurs when receiving something at home? How is the communication of the offer managed? How can the service be differentiated from competitors? These are only some examples of physical elements to be designed harmoniously with the offer and with digital interaction.

5.4 Trust and Reputation Are Design Objectives

In the sharing economy, trust is one of the main ingredients of the process. Designers have to consider the importance of the trust issues (Hawlitschek et al. 2016) to create systems that facilitate the creation of trust between the participants, and between the brand and the users and of course in the products and services offered. Trust is related to the capacity to be inclusive, to create, reinforce and cultivate communities (online and offline), to make the service reliable, sustainable and efficient. People feel like being part of something bigger, and they want to participate, be satisfied and also informed and rewarded. Consequently, sharing and peer-to-peer platforms often include credits and reward mechanisms for the users, typically to allow people to better collaborate with each other, have an active role in co-producing the service and build a strong relationship with the provider.

Reputation and trust are the new currency (Botsman 2012a, b; Schlegel 2014) in this system. Botsman (2012a, b) describes the importance of creating a 'reputation capital' that is co-created by individuals that share their experiences. It is a fundamental requirement for the sharing services, and many factors contribute to reinforce or damage it. From a service design perspective, the reliability of the brand, the design of the touchpoints, the quality of the experience, the reliability of the reviews and feedback are different elements that contribute to building trust between the providers and the users. Glenn Carter (2015) identifies 'six commandments of building reputation capital'. These are connected to behaviours and are dedicated mostly to the providers. Examples are the online rating and profile systems. In the case of bad ratings, he suggests to always respond with courtesy explaining the process and the reasons for the inconvenience and to remove malicious or unfounded negative ratings. From the user perspective, he suggests being as real as possible, for example creating online profiles with real data and creating links with the social media accounts whenever possible. All these mechanisms help create a sense of trust in the service and thereby improve reputation.

Design services for sharing economy are certainly a fascinating field that deserves to be further explored. Oftentimes, it is viewed more from a UX/IU perspective than that of service design, precisely for the digital nature of the solutions. The service design approach to enhance communities (online and offline) (Villari 2012, 2013, 2015) developed in other areas of intervention can certainly be applied to the sharing and collaborative economy. This can help us find models to reconcile social and business aspects as well, to valorize both the online and the local communities, and to enhance the importance of the relationships lying at the root of these kinds of services.

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Co-design in a 'Social' Sharing Economy. Understanding Levels of Citizen Participation in Collaborative Services

Daniela Selloni

Abstract The aim of this chapter is to discuss a 'minor' characteristic of the sharing economy, focused on local exchange trading systems that arise from creative communities and local social innovations. This is the 'social side' of the sharing economy, quite different from the well-known digital platforms that are actually multinational companies allowing commercial exchanges amongst a variety of actors. As service designers researching in the field of social innovation, we are interested in exploring the sharing economy under this particular perspective; more specifically, we wish to centre on the contribution of the user (or, better, of the community of citizens–users) in developing this new generation of collaborative services. To do so, we build upon a series of Italian case studies coming from the 'Creative Citizens' programme held within the POLIMI DESIS Laboratory of the *Politecnico di Milano*. Finally, we discuss the interconnection between the various levels of citizen participation in such collaborative services, starting from co-design and then focusing on co-production, co-management and co-ownership. More specifically, highlighting how co-design may be a powerful means to pre-define roles and responsibilities, from both a practical and a formal point of view.

1 Creative Communities and Social Innovation: The Social Side of the Sharing Economy

It is far from simple to provide a unified and 'official' definition of the sharing economy, a concept that may be interpreted under different labels. Collaborative consumption, on-demand economy, peer-to-peer economy and crowd-based capitalism are just some examples of the different interpretations.

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The sharing economy is indeed an 'umbrella concept' encompassing multiple meanings, so to explain it we first propose a practice-oriented definition, provided by Codagnone et al. (2016) in a policy report by the Joint Research Centre. According to them, the expression 'sharing economy' is 'commonly used to indicate a wide range of digital commercial or non-profit platforms facilitating exchanges amongst a variety of players through a variety of interaction modalities (P2P, P2B, B2P, B2B, G2G) that all broadly enable consumption or productive activities leveraging capital assets (money, real estate property, equipment, cars, etc.) goods, skills, or just time' (p. 22).

To complement this broad definition, we summarise a recent study developed by Pais and Provasi (2015), who describe six classes of different sharing economy practices, and we then focus on those that show a distinctive social character rather than a commercial one.

1. *Rental economy*, run by companies specialising in goods which are generally under-used when the users have exclusive private ownership of them (e.g. car sharing, such as Zipcar).
2. *Peer-to-peer economy*, characterised by goods that are under-used but which are offered directly by their owners (platforms such as Airbnb).
3. *On-demand economy*, based on the use of platforms that broker personal services provided by professionals and non-professionals (platforms such us Uber, BlaBlaCar or TaskRabbit).
4. *Time banking and local exchange trading system*, similar to the previous ones in terms of the services offered, but different in that transactions are based on barter or time or alternative currencies (platforms such as TimeRepublik).
5. *FLOSS-free/libre open-source software*, a form of sharing economy connected to the free or open-source software programs produced by communities of advanced developers and users (e.g. Linux).
6. *Social lending and crowdfunding*, an application of finance to the sharing economy. It is characterised by direct loans between people or platforms that help raise the capital necessary for the development of a new idea, with the funding for the venture coming from those potentially interested in it (platforms such as Kickstarter).

For the reflections in this chapter, both the peer-to-peer economy and the local exchange trading systems are important: they are often interconnected to citizen activism or they result from the implementation of local social innovations.

Meroni, since 2007, has talked about creative communities, i.e. 'people who cooperatively invent, enhance and manage innovative solutions for new ways of living' (p. 30). However, since the 2000s, many things have changed and these groups of pioneers have evolved into actual social innovators, now that the socio-behavioural context has become more mature. The same is also happening for the socio-technical context (Meroni and Selloni, 2018). In fact, some part of the sharing economy may be understood as a possible evolution of creative

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

design and manufacturing, where distributed communities collectively design a new object or service that is made available with a creative commons licence.

For the purpose of this chapter, the notions of collaboration and common-pool arrangements are both important, because they show a clearer picture of the kind of social innovations that the sharing economy is capable of bringing about. The case studies that we are going to discuss in this chapter fall into these areas: groups of people who share various items/services and collaborate to achieve different purposes, and, in doing so, trigger a change in relationships not only amongst individuals, but also between citizens and institutions.

In this perspective, creative communities, social innovations, collaborations and common-pool arrangements are all expressions of the social side of the sharing economy. In a way, they are also part of the scenario of public-interest services described by the author in a previous work (Selloni 2017): a system of services placed in a hybrid area between amateur and professional, public and private, market and society, profit and not-for-profit. This area does not express a new model, but, in the words of Pais and Provasi (2015), it proposes a 're-embedding' of the economic relations in the sphere of social reciprocity, and thus, it enhances a different equilibrium between market, state and society.

2 Co-design and Co-production: The Notion of Participation in the Sharing Economy

As stated, one of the main characteristics of the sharing economy is the active role of individuals; no longer just users, they now participate in delivering services by sharing their goods, skills, knowledge, time, etc. More specifically, in connecting to the abovementioned 'social side' of the sharing economy, people can be recognised as assets (Manzini 2015), as actual resources who work together in the development of collaborative services by promoting reciprocity.

The notion of collaborative services is crucial for the purposes of this chapter; according to Jégou and Manzini (2008) these are services 'where the end-users are actively involved and assume the role of service co-designers and co-producers' (p. 32). This definition was formulated before the advent of today's sharing economy and was connected rather to the emergence of the creative communities described by Meroni (2007). Hence, in a sense, this was a form of sharing economy 'ante litteram', composed of a set of local social innovations that came to be implemented later thanks to the development of digital tools.

In the definition of collaborative services, two concepts stand out as crucial: the notions of co-design and co-production. The latter, especially, may be considered as one of the central ideas in the sharing economy, even if it may be interpreted in different ways, depending on the context.

The original definition of co-production was formulated in the early 1970s by Ostrom: she described it as the 'process through which inputs used to produce a

good or service are contributed by individuals who are not 'in' the same organisation' (1996, p. 1073). More recently, Boyle and Harris (2009) conceived co-production as a new way of re-thinking public services: 'co-production means delivering public services in an equal and reciprocal partnership between professionals, people using services, their families and their neighbours. Where activities are co-produced in this way, both services and neighbourhoods become far more effective agents of change' (p. 11). The core idea in this definition is similar to the one proposed by Manzini (2015): that people who use services are hidden resources in themselves. They can contribute to the delivery of their own services by using their knowledge and skills, going beyond simple user involvement, and thus fostering a balance of power and responsibility amongst service professionals and individuals.

In recent years, co-production has become quite popular, attracting the attention of various scholars who have attempted to deepen and expand its significance, from reforming public services, to connecting to social innovation, to conceiving new models of governance.

Here, we wish to highlight how co-production may be conceived as something more than simple user involvement: the participation of citizens in the co-production of services is important not only to improve the efficiency and effectiveness of those services but also, as Pestoff argues (2012), for achieving social goals such as citizen empowerment and participation, and thus increasing in a sense the social character of the sharing economy.

The other central notion in the definition of collaborative services is co-design: people who participate in delivering services can also participate in conceiving those services, actually becoming co-designers. Hence, on the one hand co-production emphasises the shared character of the production process, while on the other co-design stresses the shared character of the creative process: they both represent a specific interpretation of user participation.

As service designers working in the field of social innovation, here we wish to highlight the idea that collaborative services extend the concept of co-production from a perspective that is more design-oriented, as its focus is not only on 'doing' (i.e. co-producing services) but also on 'thinking' (i.e. co-designing services). It is not by chance that the author, in a previous article, refers to citizens as both 'service thinkers and service makers' (Selloni 2013).

In our work within the design for social innovation and responsibility (DESIS)[1] network, we run numerous co-design experiments to investigate new possible forms of social innovation in which citizens become designers of their daily lives, co-designing services and developing them using existing assets and resources.

Our co-design methodology is not new, but shares some common traits with work done by other researchers in recent years: ethnographic fieldwork, creative

[1]DESIS—Design for Social Innovation and Sustainability, the international network founded by Ezio Manzini, one of the leading global thinkers on social innovation and sustainability: www.desis-network.org.

sessions with a wide range of tools and participants, and iterative prototyping (we mainly refer to the participatory design tradition of Ehn and his colleagues of the Scandinavian School (Ehn 2008; Björgvinsson et al. 2010; Bannon and Ehn 2012) and to the work done by Sanders and Stappers in defining and systematising co-design theory and tools (Sanders and Stappers 2008; Sanders et al. 2010; Sanders and Stappers 2014)). In this perspective, co-design becomes a way to support a change in the way individuals find solutions to their problems, preparing the groundwork for co-producing those solutions, and therefore, promoting a sharing economy which is more socially and design-oriented.

3 A Series of Examples from the Italian Context

To better discuss the issues of co-design and co-production in collaborative services, we will now present a series of examples coming from the Italian context. They originated from a research project named 'Creative Citizens', and they comprise four services based on the sharing of goods, time, knowledge and skills.

The 'Creative Citizens' experimentation was conducted by the author in the POLIMI DESIS Laboratory of the *Politecnico di Milano*. The project consisted of a series of creative sessions to co-design and co-produce services with citizens in one specific area of Milan, Municipio 4.

The experimentation was based on a year of deep immersion within the selected neighbourhood: building upon an existing creative community of active citizens, a group of thirty people agreed to take part in two-hour-long weekly meetings over several months. Hence, a systemic and intensive programme of co-design sessions was put in place in order to test methods and tools of participatory and service design, and, it was hoped, to launch new services for improving the daily lives of people in the local community. In addition, the 'Creative Citizens' project took place in a space that symbolises Milanese activism—the *Cascina Cuccagna*, one of sixty farmhouses owned by the Municipality of Milan that have been saved from decay and neglect by a group of residents. This represented a great example of local social innovation, which is why it was convenient to start the experimentation by benefiting from the support of these active citizens.

The project dealt with different service areas: sharing of skills and objects, administrative advice, cultural activities; all of which were connected to simple daily tasks and to existing services and places, such as time banks, purchasing groups, local shops, markets and fairs. This connection to local activities was important in order to facilitate co-production amongst different actors after the co-design phase.

Each service topic was explored more deeply in three different creative sessions, which can be viewed as three steps along a progressive path. The initial meeting was a warm-up session, to familiarise participants with the topic by presenting good practices from all over the world. It aimed to inspire people and instil visions of what could be possible in their daily lives. Participants selected the most promising

elements of the presented cases, which would then be combined in the second session, in order to create as advanced a service concept as possible. This second meeting was a generative session, a sort of collective brainstorming bringing together the citizens' desires and good practice insights. In the third session, the objective was to move from an ideal service to a real one, identifying the resources that could be involved in the development of the service. It was a real prototyping session, using physical mock-ups to shape a service truly suitable for the area in question, i.e. Municipio 4.

Strategic players were invited to attend this last session: local associations and committees, representatives of institutions, and professional advisors. They were all already active in the neighbourhood and were invited in order that they might join forces and produce synergy, receive encouragement and draw inspiration from existing activities.

After this long preparatory path, six services were generated: for the purposes of this chapter we will now consider four of these services, as they show a more distinctive 'sharing character'. We will discuss each service as follows: description of the service, main co-design tools used, main actors involved, co-production and implementation of the service. Amongst the main actors involved, attention will be focused on a specific 'service hero': the majority of the services have a citizen as their 'hero', meaning that during the process, interests in various application fields tended to spread spontaneously through the groups. The most successful services were those that found a particularly good representative, as so often happens in various social innovations.

3.1 Object Library

Description: the Object Library was conceived as a service for sharing goods in the Municipio 4 neighbourhood of Milan. Citizens took inspiration from existing exchange platforms on the Web (such as NeighbourGoods, Share Some Sugar, LocLoc) and explored these during the warm-up meeting. The principal idea is that having access to a pool of objects is more convenient (and also better from an environmental perspective) than actually owning the items, particularly the types of products we use just once a month, or even less frequently (drill, stroller, skis, garden tools, etc.). Hence, one possible solution is to borrow them from our neighbours, and the main aim of the Object Library was precisely to provide a set of rules and roles to organise this kind of exchange. Citizens designed a codified system of exchange, envisaging a variety of transactions: bartering, lending, trading, renting, gifting and swapping. They also identified a specific place in the neighbourhood for the library: the former market located in *Piazza Santa Maria del Suffragio*. This represented an innovation compared to existing exchange platforms: Municipio 4 citizens preferred to carry out the 'exchange transaction' outside their homes, in a 'third place' that is recognised as a meeting point, a semi-public space in between private and public. In parallel, a digital platform was also required: a sort of 'Facebook' for objects, in

which every product has a profile describing its characteristics, availability and modalities for booking transactions. During the co-design sessions, citizens made specific choices about object types, rules, rewards, etc. and they made all the necessary decisions to define how the service works.

Co-design tools:

- Service map: a map to visualise the library, a scheme with 'shelves' to fill with objects chosen by groups, focusing on the different types of transactions.
- Service resources: a set of stickers showing the different object categories based on frequency of usage (daily use, occasional use, use for a short period or goods no longer in use).
- Actors Map: a map to identify all the players involved in the service and their specific contribution to the library. Actors were divided into three groups: institutions, neighbourhood associations and small local businesses. Suggestion cards—a set of cards displaying inspirational pictures from other case studies to spark off unprecedented ways of sharing objects.
- Localisation map: a map of the city of Milan, displaying a zoomed-in plan of Municipio 4 and indicating possible locations for the Object Library.

Main actors: At the end of the process, one citizen, Stefano, became the 'service hero' for the Object Library. He was the first to suggest the former market as the ideal place to house the library, and he proposed to respond to a call issued by the Municipality of Milan for ideas on how that space should be reassigned. Another key actor was Davide, a local baker who won the public call for proposals to develop a project for a multi-functional space, hosting various small food shops and also leaving space for other initiatives. In addition, the *Cascina Cuccagna* played a crucial role in becoming a temporary space for exchanging the objects, dedicating to this activity one specific room known as a '*Punto di incontro*' (Meeting Point).

Co-production and implementation: co-production within the Object Library is carried out by a group of Municipio 4 residents who are at the same time recipients and providers of the objects. This exchange is similar to numerous sharing economy services, in which there are two types of users and anybody can be one or the other, interchangeably. One is more active and actually delivers the service, while the other is more passive and generally benefits from the service (e.g. host and guest, driver and passenger, cook and diner). In particular, Stefano wishes to play a more important role: he had the idea of setting up the 'temporary exchange corner' at *Cascina Cuccagna*, open several times a week, and he proposes himself as an 'employee', since he is a freelance architect in search of additional forms of income. In future, Davide is willing to host and support any form of 'social activity' within the market, which thus includes the Object Library, since the market has been restored and recently been reopened to the public.

To conclude, we may argue that the Object Library is currently evolving towards a sort of social start-up, in which a small group of citizens is helping Stefano create the conditions to initiate the activity by means of a low-tech platform: a Google group.

3.2 Augmented Time Bank

Description: the Augmented Time Bank is a platform in which citizens can share their skills and their spare time. Teaching lessons, running errands such as shopping or going to the post office, assembling furniture and babysitting are just a few examples of a wide range of activities that can be shared with neighbours. This service builds upon the existing '*Cuccagna* Time Bank'; many of its members joined the co-design sessions of 'Creative Citizens' and were happy to share with other participants the problems they had encountered while running the service. The main target group is the younger generation, because most of the current participants are retired people. Two connected strategies were identified: first, to create a digital platform for sharing skills and tasks; second, to extend the range of activities to those that are more relevant to, and used by, the younger generation, dealing with music, photography, film-making, etc. The *Cuccagna* Time Bank, unlike other existing time banks, also has access to a physical space, a room within the farmhouse, and this is crucial for hosting lessons with many participants. During the co-design sessions on this topic, participants defined a set of key characteristics for the digital platform; it needed to be useful not only for 'booking' tasks but also to allow users to consult the profile of each participant, in order to provide information about the skills and level of appreciation amongst other members. Peer-to-peer evaluation was recognised as one of the most important factors for building trust amongst participants and for enhancing the quality of the service.

Co-design tools:

- Service map: a customer journey map to represent all the stages of the service, from registration to the final transaction. This map has been presented as an 'empty layout' to be filled in during the co-design session with citizens.
- Service resources: a set of stickers displaying icons representative of the various elements of the service (a colour for each area). These elements are intangible service modules representing different skill types (handyman jobs, language lessons, babysitting, etc.).
- Help cards: a set of cards aimed at providing basic information on complicated issues, specifically related to law, insurance, registration fees, etc.

Main actors: a small group of members of the local time bank may be considered as a sort of 'collective hero'. In fact, they made the deliberate decision to participate in the 'Creative Citizens' programme with the specific aim of improving the existing service, and thus to benefit from the help of other citizens and from the expertise of service design researchers. Another important actor was the *Cascina Cuccagna* itself, whose role was to provide all the infrastructure necessary for the time bank, in particular a set of equipped spaces in which to run the various activities, from English lessons to yoga classes.

Co-production and implementation: co-production is the basis on which the Augmented Time Bank is founded. It is a local exchange system in which

transactions are based on time specifically; in this case the unit of 'time currency' is one hour. As stated, the most important suggested improvement for carrying out these 'time exchanges' was to create a digital platform, in order also to involve the younger generation. Unfortunately, problems are arising during the building of this platform, as it is proving difficult to find a suitable professional available to develop a whole project (an app and a Website). In the meantime, members are using Google Tools combined with other 'analogue tools' necessary for interacting with participants who are unfamiliar with the digital ones. In particular, a peer-to-peer evaluation system amongst participants is still lacking. Although one was co-designed during the 'Creative Citizens' programme, it still needs to be developed and put into practice. One possible solution that has recently emerged is to join a global time bank known as 'Time Republik'. This network already has a platform and is looking for contacts with neighbourhood time banks in order to develop a stronger link with local contexts where people meet in person and interact. Hence, the redesign of the *Cuccagna* Time Bank essentially succeeded in building awareness about a possible improvement of the existing service, focusing on a set of aspects that needed more effort or professional support.

3.3 Citizens Help Desk

Description: the Citizens Help Desk is a service providing information and administrative first aid in a variety of domains: legal, fiscal and architectural/building advice. The idea arose from the enthusiastic contribution of Rossella, a lawyer who established a 'Legal Help Desk' within *Cascina Cuccagna* to provide a sort of 'initial orientation' about issues raised by citizens. Rossella attended several co-design sessions in an effort to improve her legal advice service, but from the beginning, and thanks to discussions with other participants, a much bigger idea emerged: why not transform the 'Legal Help Desk' into a more comprehensive help desk supporting citizens in dealing with all the administrative issues that needlessly complicate daily life? This was the first spark that kindled the 'Citizens Help Desk' concept, a service offering information and help in the face of bureaucracy within the different areas mentioned: legal issues (both civil and criminal law), construction and building, accounting and fiscal, condominium administration and energy management, etc.

The 'Citizens Help Desk' is currently in operation at *Cascina Cuccagna* and is divided into thematic help desks working on a temporary basis and operating by appointment. Currently there are eight help desks running on different days, and the number of citizens asking for advice is continually growing. All the help desks share the same booking system on the *Cascina Cuccagna* Website and have a clear public identity specifically designed for the service. We have also developed a mobile and flexible 'Help Desk setup' that can be adapted for different rooms in the farmhouse, because it is impossible for *Cascina Cuccagna* to guarantee that the same space will be available every afternoon of the week. Hence, the physical

construction that houses this service was designed specifically to be adapted for a multi-functional space and a number of different providers (the various professionals giving advice), and also to be easily managed by *Cascina Cuccagna*.

Co-design tools:

- Service map: a customer journey map showing all the stages for using the Legal Help Desk, from first contact to resolution of the problem(s).
- Actors map: a map to identify all the players involved in the Legal Help Desk. Actors were divided into groups: institutions (the court, the municipality, the local government board, etc.), lawyers' association, citizens and other professionals able to give advice on bureaucratic issues.
- Help cards: A set of cards to deepen knowledge about law, briefly explaining the differences between civil and criminal law, administrative law, employment law, etc.

Main actors: Rossella, the lawyer who established a 'Legal Help Desk' within *Cascina Cuccagna* may be considered as the service hero of the 'Citizens Help Desk'. It is thanks to her effort that the service is currently in operation, and it is thanks to her ability in establishing relationships that other professionals decided to participate and initiate other help desks. In fact, the other main actors are precisely those professionals: a fiscal advisor, an architect, an engineer expert in energy management and a building administrator. The *Cascina Cuccagna* also, in this case, offers spaces and infrastructure. In addition, another important player is Milan's Municipio 4 Local Government Board, which recently decided to officially endorse the 'Citizens Help Desk', recognising the public value of the service and also discussing possible replication of it within other neighbourhoods.

Co-production and implementation: in the case of the 'Citizens Help Desk', co-production takes place essentially thanks to the voluntary contribution of a group of professionals, who are citizens and at the same time experts in their respective domains. There is no actual exchange of roles, as it is impossible for 'lay people' to be a substitute for those who have specific knowledge, but it is still possible to speak about co-production in the sense intended by Boyle and Harris (2009), because the service is run in 'an equal and reciprocal partnership between professionals, people using services, their families and their neighbours' (p. 11).

One of the main issues in the implementation of the 'Citizens Help Desk' is how to transform its business model: the service is currently offered free of charge, but one of the most pressing questions concerns the introduction of a sort of 'low-cost price list' for certain types of advice. We are exploring this possibility for two main reasons: in order to experiment with a sort of micro-economy, and also because many citizens seem to trust a service more if they pay for it, even if it costs just a small amount of money. Therefore, we are discussing a possible shift from a 'not-for-profit' to a sort of 'low-profit' service. Another important step in the implementation of this service is the role of institutions: as stated, the Municipio 4 Local Government Board recently gave its official endorsement and, from this

perspective, the 'Citizens Help Desk' may evolve into something different, by being 'embedded' within the public sector and becoming a service provided by the Municipality of Milan.

3.4 Municipio 4 Ciceros

Description: 'Municipio 4 Ciceros' is a 'zero-mile tourism' service run by citizens, who identify special places within the neighbourhood (and the stories behind them), in order to become local guides of unusual city tours for small groups. The places visited do not correspond to the 'top spots' in the official guides because they are selected directly by residents, who are 'experts' in their local context and know the attractive 'hidden gems' better than anyone else. During the co-design sessions, some enthusiastic citizens suggested possible 'alternative tours' for Municipio 4, including the 'Trees Tour', the 'Industrial Buildings Tour', the 'Stars Tour', the 'Neglected Monuments Tour', and proposed themselves as guides. In order to organise the meet-up between citizen-guides and tourists, a mobile app was designed, useful for booking visits, geo-localising the tours and making payments. In addition, to set up this 'zero-mile tourism' service, it was recognised that guides needed to be trained as 'storytellers': simply knowing a good story and its local context is not enough; it is also necessary to be able to tell the story with flair and entertain people. For this reason, during the co-design sessions, the need for a link with a theatre school was stressed, in order to 'educate' the citizens.

Another important issue was how the local guides must be selected: citizens attempted to establish a set of rules for selecting the guides we called 'Ciceros'. One possibility was to create a 'Committee of the Wise for Municipio 4', which would be responsible for selecting the local residents/guides, with *Cascina Cuccagna* to be used for training courses in public speaking and acting.

Co-design tools:

- Table game mock-up: a table game of 'Municipio 4 Ciceros'. It comprised a map of Municipio 4, a set of pins to be used as indicators for the several stops on a tour, a set of blank stickers to be filled with ideas, a list of monuments, points of interest and anecdotes about the history of Municipio 4, and a set of picture cards representing the citizens-guides. This mock-up was used to sketch out possible routes and as a tool of 'synthesis', in order to collect all the tours together and have a complete overview of the service offer.
- Localisation map: a map of the city of Milan equipped with stickers to indicate key points, and with a specific map section zoomed in on Municipio 4.

Main actors: Daniela, Massimo and Stefano are the citizens most interested in this service, but none of them ultimately became the 'service hero' for 'Municipio 4 Ciceros'. They designed the majority of the tours, also proposing themselves as guides, but they were not able to assume full responsibility for running the service.

The *Cascina Cuccagna* was available to become the 'meeting point' for the service, working as a sort of 'local travel agency', but its role was only to provide space and equipment. Another key actor was a local theatre school available to coordinate training classes in public speaking and acting for the guides. Members of the school actively participated in the co-design sessions, but they could not extend their contribution to carrying out their activities, as 'Municipio 4 Ciceros' has never been fully realised.

Co-production and implementation: co-production within 'Municipio 4 Ciceros' is carried out by a group of Municipio 4 residents who propose themselves as guides to show people around a local area. In this way a relationship is established between citizens who are more expert and active, and others who just want to benefit from the services; the same thing happens in some similar sharing economy services in which there is a 'local friend' and a 'guest/tourist' (Guide me right, Like a local, etc.). Unfortunately, implementation of the service is encountering several difficulties: even if the content of the tours is firmly defined, a mobile app is still missing and needs to be developed. The app is necessary in order for people to start booking transactions: the service can work only if a minimum number of participants are reached and they each pay a fee for the tour, in the same way as for many other similar services. Development of the mobile app still represents an obstacle to the realisation of 'Municipio 4 Ciceros'. One reason the app has not yet been created is that for this service no local 'hero' came forward to supervise the initiative, whereas the opposite was true for the other services mentioned above.

4 From Co-design to Co-ownership

The case studies presented show a high level of involvement by the citizens, especially in the co-design phase, thanks to the effort of design researchers who achieved the right conditions to make co-design a pleasant and engaging activity. The main problems tended to arise in the co-production phase: actually it proved difficult to deliver services in an 'equal and reciprocal partnership' (Boyle and Harris 2009) amongst the diverse actors, and it was even more complicated for those services that did not find a 'hero'.

The figure of the 'hero' has been considered important since the very emergence of creative communities (Meroni 2007). Manzini (2015) argues that every social innovation starts with a hero, but actually we cannot rely upon heroes for the continuation of an initiative. The 'service heroes' of 'Creative Citizens' differ in terms of their nationality, age, income, political views and type of employment, but they share a vision about a collaborative neighbourhood and about a new way of considering public goods and services. They also see themselves as part of a group of 'social entrepreneurs' able to make a difference in society by setting up a diverse range of initiatives responding to social needs. In fact, they have already set up some activities: Stefano is one of the founders of the local Time Bank, Daniela and

Massimo are members of the principal local committee of activists, Inge has a blog on food activism. They all feel a responsibility to take care of the common resources, and they considered the 'Creative Citizens' project to be a powerful means of establishing a dialogue with the Municipality by presenting new ideas.

The need for a 'service hero' was specifically recognised at the end of the process, when a set of 'ready-to-use' solutions was available to the community, but without any significant personal commitment, services were not brought to fruition. This is one of the lessons learnt from the implementation phase of 'Creative Citizens': even if people participated enthusiastically in co-designing services, their participation in co-production was not obvious, because provision of services can be very demanding from an operational point of view. Co-producing services needs defined framework conditions, and, above all, a clear alliance between different actors, involving not only citizens but also public providers and other societal actors. It is not by chance that the service that is working best is the 'Citizens Help Desk'; this is not only due to the presence of 'heroes', but also because two other actors are interested in delivering the service. They are *Cascina Cuccagna*, which represents the third sector, and the Municipality of Milan, which represents the public sector: these two actors play a crucial role in supporting the services, providing on the one hand space and infrastructure, and on the other knowledge and endorsement.

The other services described are facing more difficulties, especially in finding other actors ready to become partners not only in the co-production phase but also at managerial level. We have understood that leaving a service in the hands of the citizens is not the right solution if we want to ensure its long-term survival, even if these citizens belong to creative communities of social innovators. In this scenario, the presence of the public sector, especially, is important and even required by citizens: in a way, the people who participated in the programme designed services with the objective of presenting them to the Municipality, thus claiming the attention of the public sector. Hence, the Municipality was required to intervene not only as a service provider, but also as a partner that should support citizens in creating and sharing value (Orsi 2009).

The involvement of the public sector is not a stratagem to shift responsibility from citizens to the institutions, effectively ignoring the efforts invested in the co-design phase. Rather, it may be understood as a way to achieve an unprecedented level of collaboration in which control and responsibility are shared amongst participants, in a true 'sharing economy' perspective. In this way, the ideal evolution of the services designed within the 'Creative Citizens' programme should result from a hybrid alliance between citizens and public providers. It should be representative of the third sector, which should participate not only in the co-design and co-production phases, but also in the co-management, actually fostering co-ownership and shared responsibility (Seravalli et al. 2015).

For this reason, we believe that the co-design phase might be better 'exploited' not only to devise new services, but also to precisely define the associated roles and responsibilities, in both practical and formal terms. In such a perspective, co-design may be considered as an important pre-condition for co-production (Selloni 2017)

and co-ownership, actually facilitating collaborative delivery and management of services in a more transparent, fair and effective way.

As stated at the beginning of the chapter, creative communities similar to the one of 'Creative Citizens' may be considered a form of sharing economy quite different from the one represented by digital platforms run by multinational companies. The aim of this chapter was to highlight how some social innovations may be considered to be collaborative services in which co-design, co-production, co-management and co-ownership may be interpreted as progressive levels of citizen participation. The interconnection of these levels is important for enabling the long-term survival of these services, and here there is room for further experimentation and research.

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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 widepread"*[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 Luhmann[5] 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.*

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

[2]*Disembedding* > uprooting.

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

[4]Thomas 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.

[5]Niklas 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

[6]Marc Augé, *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]

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[7]Giovanna 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 acephalous 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

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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.

[10]Jeremy 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 ...

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

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

[13]The 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*

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[16]Alessandro 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/#.WJdLiqt2dy-
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:

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[19]Cristina 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 vitesse*, 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 Seul, 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.

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[20]See 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.

[21]See 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.

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[22]Carlo 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/.

[23]cit. 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.

[24]blog, Giovanna Piccinno Interior Design Studio, http://isdirtmatteroutofplace.tumblr.com.

Shared Hospitality Platforms: Possible Design Repercussions, Introverted and Extroverted

Laura Galluzzo and Giulia Gerosa

Abstract This chapter aims to explore possible implications, in the spatial design field, of new forms of hospitality that have emerged with the sharing economy. In particular, after a first analysis of the current state of contemporary cities and their rapid evolution towards increasingly fluid formats, the temporal variable is identified as a possible key. It influences the design approach from an extrovert point of view and therefore an urban transformation that starts from the interior space, which introverts, moving towards a change in the discipline approach to the design of domestic interiors.

1 Background: The Hospitable City

In the last fifty years, our cities have completely changed; from a Fordist-type economy centred on production, we have moved to a post-Fordist economy that seeks to acquire new tourist flows, mainly through the consumption of culture (Judd and Fainstein 1999).

The way a city outwardly conveys itself has changed dramatically in recent decades. Cities are in competition with each other to attract new capital, new features, new tourists and new investors and often do so through events, large and small. Tourism becomes a challenge for cities of all sizes and can mean salvation for the city, though care must be taken to avoid making events too homogeneous or offer the same, banal city over and over; instead, it is important to emphasise the uniqueness and non-reproducible nature of the city's offer (Montanari 2008).

Stefano Boeri in *L'anticittà* writes that "tourism, in its different versions—cultural, recreational and 'business-based'—now brings together a true 'kinetic elite' that consumes thousands of miles every week travelling and now measures

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geographical distances only in terms of time ('how far away is it?' actually means 'how long does it take to get there?'), while in its intermittent pauses of life is accommodated by a wide range of 'non-places': airports, railway stations, major hotel chains, trade fairs, business centres. Spaces now fully dedicated to the needs of an erratic lifestyle that seeks the same comfort (and the same 'environment'?) everywhere, and therefore tends to homologate the containers it temporarily inhabits" (Boeri 2011). It is the task of designers to try to reverse these trends of urban homologation and aim for a strong expression of their local identities.

In particular, we want to address the issue of hospitality, a term not only used in defining the economic sector related to accommodation, but also understood in the broadest sense of the term.

Let us start with some data: although we have theorised for years about the so-called escape from the city, the apocalyptic vision of the death of the city and speculations about the crisis of urban civilisation have not come true. Instead, the city seems to have gained the ability to reinvent the old and be born again. In 2008, for the first time in history, the majority of the world's population lived in cities. In 1900, the figure was only 13%, and by 2050, it is expected to reach 70%. Today, there are more than 450 cities in the world with over one million inhabitants; a hundred years ago, there were about twenty. In Mumbai, there are 44 new citizens arriving every hour, 380,000 people per year (Granelli 2012). This is mentioned here to give an idea of the numbers and to indicate that it is a large system we are referring to when we talk about mobility, cities and hospitality.

If we look at the origins of the term "hospitality", we find a late fourteenth-century occurrence, meaning the "act of being hospitable", from the Old French *hospitalité*, which in turn derives from the Latin *hospitalitem* (nominative *hospitalitas*), "friendliness to guests", based on the stem *hospes* (genitive *hospitis*), "guest".

And it is interesting to see how the subject of the "act of being hospitable" may be a city, rather than a person. What strategies should be adopted in order for a city to be truly hospitable?

It is interesting to provide some figures for the migrants of today: each year about 3 million people in the world emigrate from their country of origin. Currently, more than 180 million people are living in countries other than those in which they were born. And this is increasingly evident in our cities when we come across buildings, neighbourhoods and areas of the city inhabited by migrants who bring with them customs, habits and ways of living that can change parts of the city, zones which in turn adjust with the arrival of these people and their practices of living (Boeri 2011).

As a result of all the transformations that have taken place in urban areas in recent decades, as we have previously summarised, the practice of urban tourism has intensified. Cities are increasingly becoming centres of attraction for tourism, and this should make us reflect on the response that our cities are capable of giving to the growing demand in this sector. In particular, the aspect of social and environmental sustainability in managing these flows of tourism is becoming increasingly valuable, so it is essential to talk about the city using the metaphor of the sponge, an image representing a system that is able to change shape and adapt to the needs of and the demand for hospitality.

Let us go back and deal with the issue of urban transformations and mutations from the point of view of the world of design. Andrea Branzi sees "the contemporary metropolis as a genetic reservoir (it is as an intense space of genome exchanges, of economic relations) that constitutes a sort of aquarium filled with amniotic fluid from which they form and in which aggregate forms of a society of exchange and information dissolve" (Branzi 2006).

Giandomenico Amendola describes the postmodern city as: "characterised by the new cultures, dreams, desires and fears of its people, the variety of new urban tribes, the new demands of the city (…). The cityscape, the physical landscape of the city, is still only partly postmodern, yet the mind-scape, the landscape of the soul and culture of the city, is already deeply affected by the new season (…). The postmodern city, however, is already more present than we believe in our dreams and in our souls. Postmodernism is already marking the mind-scape of the city into a fragmented and torn state, through the dreams, fears, tastes and consumption of its people. The new city takes shape even before architectures do in cultures, values, ways of life" (Amendola 1997).

2 The Temporary City

"In the last ten years, some deep urban transformations have come to maturity, which have come about not so much in the change of the architectural scenario as in the continuous one of its interior spaces. This is a real urban revolution whose effects have not only been limited to the real estate market, but have had an important impact both in local economies and in the reorganization of urban dysfunctions, and in the positive development of creative activities" (Branzi 2010a, b).

Urban planning, characterised by dilated programming times, today has to deal with increasingly rapid transformations of lifestyles, leading to a use of the city that comes from below and that sees in the interior design the tool that best suits the rapid change of functions in continuous evolution.

The city is in a state of flux. The visionary, top-down master-planning approaches of the twentieth century delivered an urban infrastructure fully equipped for the indeterminacy we face today. Resource limitations, mass migration, austerity measures, housing crises, insecure work conditions and rising inequality have defined the beginning of the twenty-first century. Amidst this context, the "sharing economy" emerged, promising radical dynamic solutions for reprogramming the city, increasing access to existing infrastructure on an as-needed basis (Alexander 2016).

In the last few years, the theme of interior urban spaces has gained more prominence within the discipline of interior design. "Talking about urban interiors implies matching two apparently conflicting terms, as they traditionally refer to spaces that have seldom been able to interact with one another, indicating respectively open and closed places. This theme was met with ever-growing interest: numerous competitions and public initiatives were promoted in order to rethink a few 'urban bits' and redesign them to convert them into actual interior spaces. This term, usually related to

buildings, conveys a sense of protection, hospitality, shelter, comfort, well-being and familiarity, typical of enclosed spaces" (Crippa and Di Prete 2011).

And also "one inevitably wonders whether architecture is capable of elaborating such modernity on a solitary quest and whether the world of design has the 'means' to transform portions of cities into places that attract, seduce and promote, as requested ever more frequently by administrations and citizens" (Colaci in Crespi 2011).

We can cite three major interpretations of the contemporary city in the history of the project—first, the studies of the Situationists and their theory of drifting, as a way of appropriating the city by the *flaneur*, who abandons himself and gets lost in the urban environment, and then the city seen as an engine, technology, machine and robot. The Archigram publication of the 1960s, through its Plug-in City, Walking City and Instant City, conveys a futuristic concept taken to the extreme. A different trend is found in Archizoom, which instead theorised a city without architectures, such as in Andrea Branzi's No-Stop City or his project for Eindhoven. In his own words, "the human metropolis is therefore a reality that cannot be addressed in unitary operational terms: and perhaps, as the overall result, it cannot even be designed" (Branzi 2006).

We can add to these visions of the city the contemporary trend of the temporary city, an urban space used as a backdrop for a continuous show that changes over time and according to the needs of its residents and their uses. Involved with this is the question of reusing empty and abandoned spaces, former industrial areas fallen into disuse, etc. Bosoni (2007) writes: "These buildings (…) are now used with increasing frequency as empty shells, where a vitality similar to that of the hermit crab uses its empty spaces like parasitic niches with faster and faster cycles".

We can say that "the city is constituted mainly by the vast sum of its interiors, a set of scenes ready for continuous restaging, for a myriad of small metamorphoses of short duration" (Zardini 2004).

These installations are by nature a temporary and transient response that the city itself can give to the changing degrees and types of demand coming from both permanent and temporary inhabitants, turning it into a veritable sponge city.

One can cite a number of examples of temporary hospitality, such as camping or temporary urban hotels, pop-up hotels, disseminated hotels, and above all portals of domestic hospitality such as Airbnb that allows the city to "open" and "close" to host new temporary inhabitants.

La città ospitale by Nicolà Costa discusses the subject from the point of view of local tourism and proposes that the actors in this sector—public administrations, bars, restaurants, business, etc.—work together so they can adapt their offerings in response to increasingly less standardised tourism. This should mean that cities can always welcome and meet the demands of an international middle class that is constantly on the move for business and pleasure, one which produces positive economic, social and cultural benefits for the local communities. A hospitable city is one that manages to build a strong relationship between its citizens and non-resident temporary inhabitants, building positive outcomes for all the different populations within it at any given time.

Boeri considers the contemporary city as a giant camping ground and in particular defines it in *L'anticittà* as: "A 'buzz' of buildings, sudden and abrupt subtractions of space, new expansions and temporary abandonment, incomplete infrastructures and rigid fences that have nothing in common except a frantic search for an identity for those who build them and those who live there" (Boeri 2011). For scholars, it is essential to know and study the forms of the *Anticittà*, recognise them and not think they are foreign to our life, to understand where and how they operate and what rules they follow, because "The *Anticittà*, whether we like it or not, is us" (Boeri 2011).

As we said earlier, a city is not hospitable if it offers its visitors and its inhabitants only a temporary place to sleep; it is becoming more and more valuable to provide a network of services and benefits that lead the visitor to feel at home and invite him to come back again. As Charles Leadbeater writes: "Real hospitality is not just welcoming people in on the first night but liking that they come back and stay, fitting into the city, making their own contribution and making the place their own" (Leadbeater 2008).

As Calvino writes in *Le città invisibili*, "What we enjoy about a city isn't its seven or seventy wonders, but the reply it gives to our demand" (Calvino 1978).

3 Shared Hospitality Platforms

We have discussed the issue of mobility and the increasingly widespread propensity for travel by new categories of travellers who until a few years ago hardly moved. They are primarily students and young workers who nowadays, thanks to the ever-decreasing cost of tickets, often leave their city for study, work or holidays. This has resulted in strong growth in the hospitality industry in other European countries with so-called low-cost hostels and campsites, which are urban and cheap. And in general, this has led to a boom in other forms of domestic and shared hospitality, such as Couchsurfing, and also renting rooms and houses through portals like Airbnb, Roomorama, etc.

The spread of online booking platforms such as booking.com, volagratis.it, skyscanner.com, edreams.it, venere.it and many others means that travellers are able to eliminate the expense of travel agencies and do their own first-hand research to find solutions for flights and overnight stays. At the same time, they can consult popular Web platforms for sharing and evaluating travel experiences, from the most famous (tripadvisor.com) to other platforms where the geolocation plays a decisive role, for example foursquare, and other websites too: AroundMe, vicino.me, etc.

As for hospitality in tourism, two major sharing-based service typologies can be identified, both related to typical IT-based structures: client-server and peer-to-peer. Both typologies are interlinked, two broad families differing from one another in their economic approach. Michel Bauwens defines the first as extractive and exploitative sharing forms, what he calls "netarchical capitalism", and the second as cooperative sharing forms which create a matrix that identifies the stakeholders and the possible economic exploitation of the shared service. An example of a

cooperative peer-to-peer structure up until 2011 was Couchsurfing: a project created by American programmer Casey Fenton in 2003. It began as a non-profit tool aimed at connecting people who were willing to exchange hospitality for free, but was converted into a for-profit corporation in 2011.

Flat sharing is also becoming more and more generalised, thanks to the fact that platforms offering the option of sharing full apartments can place themselves in different positions within the matrix depending on the pursued approach and purpose. From Airbnb to flatshare, spareroom and houseshare, nowadays it is becoming more and more common to use sharing platforms in the hospitality field, not only for short visits to a place, but also for temporary residence.

We can say that this new way to travel, new tourism and new forms of hospitality have radically changed our cities and our habits, and what it has profoundly changed is the character of the contemporary tourist. Nuvolati assimilates the figure of the *flaneur* in two types of tourist: "a tourist belonging to the middle class, intellectualised, highly critical of the mass-produced trips from which he feels snobbishly dissociated; and a tourist called 'relational', interested in a more authentic relationship with the places and communities (Costa and Martinotti 2003)" (Nuvolati 2006).

We call it the new tourist city: "The new populations to which we refer are visitors with a low budget, not very 'traditional' in the application of expressing hospitality, attracted to urban and metropolitan areas for various reasons, including the organisation of events—single or repeated over time—with a strong appeal to the public. In very general terms, we can talk about users that do not look for the quality and comfort of the hospitality on offer, but favour instead an idea of liveability linked to environmental sustainability, that shows availability to experimentation into new formulas" (Morandi and Rolando 2010).

And again: "The issue is particularly relevant when you consider the 'other' types of tourism that are generated in connection with the so-called events—recurring or exceptional—that seem to have become the only engine that can attract the resources needed for the operation, now even in the ordinary life of the city. The same arguments also suggest a deep reflection on the changes that, presumably, are affecting many of the 'new' populations, thanks to the lower costs of travel and communication possibilities offered by new technologies, moving from one country to another, from one city to another, without a permanent residence" (Marra and Ruspini 2011).

4 Temporariness as Design Variable: Extroverted Repercussions

It is interesting to investigate the impact of sharing services at urban scale, namely on the territory and on its communities, in a tangible and intangible way. On the one hand, they physically affect the use of the spaces. On the other hand, they also have

some immaterial impacts, given by their socio-economic consequences. Just think, for example, of the impact that Airbnb has in creating new flows of tourists whose arrival changes the image of whole districts in many cities; imagine the challenges that lie ahead in this field, considering also the birth of new communities and the relationships that will be created between new stakeholders.

As we said, these new forms of hospitality bring with them some urban repercussions and in particular define new categories of city users that primarily influence the development of urban sociality.

"In Seoul, Mayor Won Soon Park has hailed the sharing economy as a way of developing cohesive communities, meeting the needs of people and enriching their lives. Seoul's 'Sharing City' agenda supports the sharing economy business to create jobs, boost income and address environmental challenges. In New York, Mayor Boll di Blasio has criticised the corrosive impact of the sharing economy on jobs and communities, and the way in which some are left behind. New York City has repeatedly challenged sharing economy companies for the way they operate, including breaching regulations and attacking unionised labour. These two divergent views highlight the contentiousness that surrounds the sharing economy, its impact and its potential. Is the sharing economy talking about inequality or creating it? And why is it proving so divisive?"[1]

The debate about the effects of the sharing economy in hospitality is developing today according to two opposing vectors. It is possible to read a set of negative repercussions, especially with respect to the homogeneity of the social fabric which, in some purely tourist areas, is being lost due to the temporary nature of the users. This can lead to a constant decrease in the identity of entire neighbourhoods that are distorted by growth associated with temporary inhabitants who do not live in the neighbourhood itself. This phenomenon involves, on the one hand, the decline in the use, number and quality of local shops, with a consequent change in the image and services offered by the neighbourhood itself. On the other, an increasing number of problems linked to the safety of the district, disrupting the social fabric and relations between the inhabitants. Especially in countries where the prevailing vision for living is linked to renting real estate, a change occurs in the real estate market: rent increases significantly, resulting in a migration of inhabitants to more peripheral areas less affected by the phenomenon of short-term rent.

"One of the touted benefits of the sharing economy is that it enables people to make more efficient use of their resources. But increasingly, the effect is the opposite—property owners have a financial incentive to keep their houses empty more of the time, in anticipation of potential tourist dollars" (Monroe 2014; Gansky 2010).

[1]Emma Clarence, Masterclass presenter at the URBACT City Festival. *Cohesive or Corrosive? Why the sharing Econoimy is Dividing Cities,* 2015. For about 15 years, the URBACT programme has been the European Territorial Cooperation programme aiming to foster sustainable integrated urban development in cities across Europe. It is an instrument of the Cohesion Policy, co-financed by the European Regional Development Fund, the 28 Member States, Norway & Switzerland.

In the Italian context, and in Europe in general, the phenomenon of increasing cost of rents is less evident than in the US market, probably due to a high percentage of first-owned homes. Furthermore, in Italy the legislation with respect to leases, which are often binding for long periods, leads to a large number of properties sitting vacant; however, the opportunity created by short-term rentals is providing the means for a slow recovery. In addition to the advantages offered by more accessible tourism with deeper links to the territory, local platforms also offer the possibility of financing for redevelopment of degraded real estate that otherwise would not be used. For a potential visitor to a city, temporary rental of a property brings numerous advantages: lower costs, varied offers and the chance to immerse oneself more in the culture of the place are just some of the plus points that have led to increasingly widespread use of the platforms that manage widespread hospitality.

5 Temporariness as Design Variable: Introverted Repercussions

"If the model of residence as a place of retreat, as the primacy of individual freedom, worked in a society based on strict distinctions between workplaces, residence and leisure, today this seems increasingly incapable of containing the progressive loss of borders. Observing emerging phenomena such as new models of widespread hospitality that exploit network circuits, informal rents for events or temporary work sites, or the spread of initiatives at the limit between public and private, the typology of residence in recent decades is found to be facing new and profound changes, rewriting the role of collective space within the domestic sphere.

Compared to a clear design trend of the last decade with the development of neighbourhoods' a functional mixité, other pieces are added to the problem: globalisation, digitalisation, loss of definition of the social structure. They bring to the general attention the need to review the housing model, no longer seeking a mixture of residence and services—very often identified in the sphere of consumption—but reconsidering the validity of some residential models where a specific community identified itself in as many representative spatial models" (Berlingieri 2017).

The temporary nature inherent in hospitality also brings with it some innovations from the introverted point of view, that is, changes in the designing that characterises the interior design in the home. If, in fact, the design practice in the residential field has mostly preferred the use of consolidated solutions, involving restructuring every ten years on average, the temporal variable modifies the design approach allowing experimentation into more innovative solutions, providing flexible layouts and use of materials often referred to as the setting or the set-up. More and more often, in fact, the approach to the project is oriented towards a restyling of the spaces in order to provide light, and reversible interventions using inexpensive, easily maintainable materials with a strong visual impact.

In some cases, as for example the *Italianway* platform, analysed in more detail in Chap. 15, the pulveristic approach of the hospitable solutions also involves a project that concerns the physical identity supply. The proposed apartments are in fact set up according to defined guidelines, which create the perception of a real widespread hotel, communicating homogeneous quality standards.

The diffusion of shared hospitality platforms and the changes in the way people live in domestic interiors pose several questions about future scenarios of domestic interior design. Also for this reason, Airbnb recently opened a new design studio, Samara, which tries to answer these questions.

In particular, the hosts' acceptance of unknown people into their homes opens a wide discussion on the issue of trust and then asks how domestic spaces can be transformed to respond to different degrees of knowledge and trust among the inhabitants who live there.

As in the founding process of *Airbnb*, even in these transformations design plays a central role, as stated by *Airbnb* founder Joe Gebbia[2]: "We lowered the bar for entry for people to try a new way to travel, and we made it easier for people to book rooms and stay at places around the world. But I really think it was because of design that people felt more comfortable to say '*well, I think I'll try this new way of accommodation, I'll stay with someone I haven't met yet.*' Design was the tool for us to communicate the levels of trust people need to make that decision".

We go on to investigate what the future may hold for sharing services, with a focus on the impact of these services on the interior spaces, the way private interior spaces will change according to the level of confidence between peers (main characteristic of the sharing economy) and how the new ways of using private spaces can influence their design, in Chap. 14.

6 Conclusion

The spread of shared hospitality platforms has profoundly changed the way people travel, visit cities, and inhabit urban and domestic spaces. In particular, the dimension of temporality emerges as a variable that leads to a different use of urban spaces and domestic houses, which are increasingly open to welcoming unknown guests. The cities are crossed by flows of new and different populations, who inhabit urban spaces, public and private, implementing different uses characterised by their temporary nature typical of the city event. These new temporal dimensions can certainly be a pretext for reflection on the role of spatial design. In particular, we can identify two types of effects in the design field: introverted and extroverted, in urban and domestic environments. Both relapses also allow the possibility of rethinking, in the planning phase, the spaces of the future. In the next chapters, we will examine the introverted and extroverted relapses in more detail.

[2]https://www.designboom.com/design/interview-joe-gebbia-airbnb-cofounder-design-miami-12-11-2015/.

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Reinventing the Hospitality: Sharing Economy and New Hospitality Formats

Francesco Scullica and Elena Elgani

Abstract This chapter 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 on the hospitality based on the sharing of spaces and services—especially AirBnB for the global relevance—are transforming the hospitality system based on hotels and hostels not only introducing new formats and new concepts in this field, but also stimulating a relevant afterthought of the interpretation of hospitality. In the contemporary society, collective spaces are considered very relevant to 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 relevance 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 not only to answer to new needs and behaviours, but also to translate new collaborative processes in inclusive places where guests/people "feel like at home".

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1 A Paradigm Shift

Today more people are travelling than ever before. Travelling activities have grown rapidly in the recent past (time),[1] and travel has become an element to define personal identity. There are several reasons why the travelling activities have increased significantly in the recent past (time), from the technological progress in transportations and communication fields to the diffusion of low-cost travel solutions. The result is that people can travel more and for various kinds of purposes. Some people are taking trips for business activities, while others are for holidays. And there is also a category of them who spend their life travelling. This group shares an unusual and unsystematic "in-motion"[2] lifestyle described by the sociologists Urry and Elliot as a "mobile life" (Elliot and Urry 2010) in which it is possible to underline the continuity between living–working–travelling experiences and the expression of new behaviours and values. This category is mostly composed by millennials, the generation of those people that were born among the 1980s' and the end of the 1990s' and that today they represent around the 30% of the population in the world. Besides millennials will cover 50% of the world's labour force within 2020, and finally in the next years they will travel more than the other categories of population.[3] The willingness to share spaces, products and services for a short period of time, the relevant interest for the experiences and not for the possession of goods, but also the attention of a sustainable approach in their consumption and the interest for a "glocal" dimension became important aspects in the lifestyle of these individuals. And all these peculiarities are also influencing the evolution of the design of the interior spaces.

From the point of view of the interior design the diffusion of a mobile lifestyle determines the boundaries between domestic, travel and work environments grow increasingly blurred. For the last 20 years the work has gradually entered in private lives and in the domestic spaces, and ever more frequently people have spent part of their lives in the working spaces (Branzi in Farè and Piardi 2003). The home generally conceived as the place to live in, to protect the intimacy of the individual and to express the personal identity of the inhabitants (Perrot 2009; Ottolini 2010) deeply changes this significant role (Molinari 2016). Instead the necessity to individualize suitable and common spaces for the support of existences in transit is

[1]In 2012 the World Tourism Organization UNTWTO registered for the first time 1 billion of tourist traveling around the world. Available at: retrieved 10 November 2017 from http://1billiontourists.unwto.org/.

[2]This expression finds a relevant reference in the exhibition "Living in motion: Design and Architecture for Flexible Dwelling", organized by Mathias Schwartz-Clauss in (2002) at the Vitra Design Museum, Weil am Rhein.

[3]In 1993 the magazine Advertising Age introduced the term "millennials" to describe this generation, and since then numerous searches have been conducted, among these: "Millennial traveller. An insight into the general travel behaviours and attitudes of millennial travellers" by the World Youth Student and Educational (WYSE) Travel Confederation, a global not-for-profit membership organization based in Amsterdam, November 2014.

affirmed, and it is possible to register the spread of new hybrid spaces able to answer to the several demands of the contemporary society.[4]

Expanding populations, advancing urbanization, rising housing prices and increase in every single households ask for reorganization of the housing and welcoming models. As demand grows, city living spaces are getting more compact, flexible and transit looking for new formats to temporarily inhabit cities. Next to new housing models it is registered the spread of new spaces for the hospitality where people can be welcomed for a very short period of time: from few hours as long as several months.[5] In this way time became a relevant aspect in the design of the hospitality space, indeed "the temporal variable modifies the design approach allowing experimentation into more innovative solutions, providing flexible layouts and use of materials often referred to as the setting or the set-up" as analysed by Galluzzo and Gerosa in Chap. 4. So, multiple contemporary ways of collective living in a place for an instant-short or medium-long period of time are evolving; i.e., we register the developing of new hybrid solutions like co-living spaces in which different functions, related to the hospitality, are merged with professional activities and spaces.[6]

In this urban context, recently, far more than in the past, the hospitality scenario for business and leisure tourism is quickly shifting. Today's new categories of global travellers, like who spend a "live in motion", are demanding more from travel experiences than ever and they are more well-informed than ever before (Albrecht and Johnson 2000). Brands from the *hotellerie* sector are focusing on designing distinctive guest ventures at every stage of the trip for welcoming different categories of guests and for distinguishing themselves. In addition the diffusion of sharing economy is deeply influencing new formats for welcoming people, like new concepts in the hospitality field and home-sharing solutions identified by web platforms for the hospitality based on a peer-to-peer marketplace. In particular, the diffusion of web platforms for the hospitality sector has enforced a paradigm shift in the traditional hospitality system based on hotels, hostels and other spaces connected with welcoming activities, because they have introduced the

[4]From 2016 in the Design Department at Politecnico di Milano has been activated the research project: "LIVING, WORKING AND TRAVELLING: interior design for new scenarios between hospitality and work field", based on the analysis of the hybridization processes in the design of hospitality and working spaces (FARB Fondo Ateneo Ricerca di Base http://www.designforhospitality.com).

[5]Numerous recent exhibitions are reflecting on new ways to living in the cities: *Together! The New Architecture of the Collective*, curated by Ilka and Andreas Ruby, Daniel Niggli and Mathias Müllerindaga at Vitra Design Museum, Weil am Rhein, 2017; *House Vision, Co-dividual: Split and Connect/Separate and Come Together*, curated by Kengo Kuma, 2016; Id-Lab*, 999 Domande sull'abitare*, Triennale di Milano, Milano, 2018.

[6]The new research project *One Shared House 2030* developed by SPACE10, the future-living laboratory created by IKEA, in collaboration with New York-based designers Anton and Irene, is looking for providing information on whether co-living could offer potential solutions to issues such as rapid urbanization, loneliness and the growing global affordable housing crisis in the recent future.

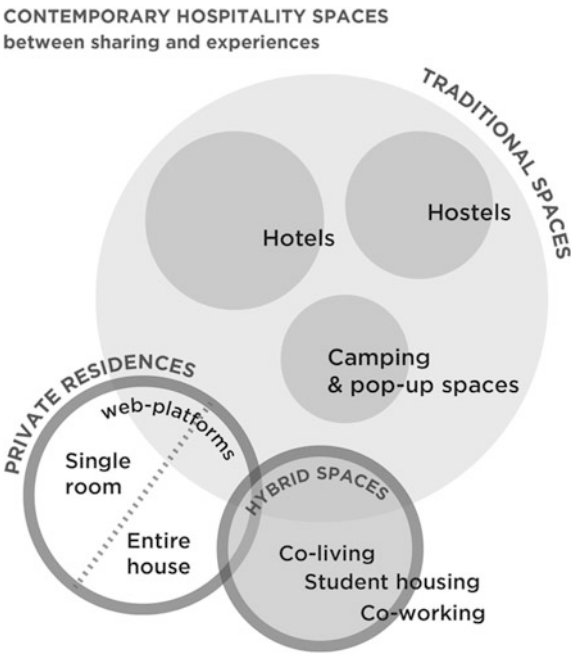

Fig. 1 Contemporary hospitality spaces: between sharing and experiences

possibility to use a domestic space deprived of collective hospitality. In this way the hotels have lost their exclusive role and a multiplicity of welcoming solutions are spread all over the world (Fig. 1).

2 Web Platforms for the Hospitality Sector

Recently millennials are becoming reluctant to buy items as homes and cars, because living is really expensive, especially in big cities, and they can afford to possess less goods. At the same time they have less money in comparison with their parents at the same age. So, they have lower purchasing and ownership power. In addition, the new lifestyle brings millennials to live temporarily in different cities in order to manage their professional career or personal experiences. Thus, the relationship with places and objects becomes more transitory. Instead millennials are turning to new services that provide best solutions for reducing costs such as bike and car sharing, home sharing, and other services related to personal well-being and childcare, but they are also starting to use Internet and applications for smartphones and online shopping and other consumptions such as hotels booking. In this context it is possible to register the spread of numerous web platforms in the hospitality field for the temporary accommodation. Some web platforms are devoted to promote the booking of rooms of hotels and hostels chain at the best price, especially for the low-cost sector. These platforms such as *Trivago.com, Booking.com,*

Expedia.com, Kayak.com, are only search engines, and they have not a significant influence on the project of an hotel space.

Instead, other platforms are focused on the availability of hospitality into a private home or on the home-swapping[7] and on the couchsurfing.[8] All these platforms are based on a peer-to-peer marketplace, a decentralized economic model which brings people together online to interact to buy, sell or swap goods and services directly with each other, without intermediation by a third party, or without the use of a company of business. Practices such as the home-swapping and the couchsurfing, useful to exchange houses or just the couch with who belong to the same physical or virtual community, have a story rather established and based on a no-profit practice. But the payment hospitality in a private space via a virtual community is a very recent revolution.

Airbnb is the first and most famous web platform for the hospitality based on a virtual community in which numerous hosts offer via Internet to a large network of guests their private rooms, entire flats, homes, boats and mountain huts for welcoming travellers around the world. Since 2007, when Joe Gebbia founded it, Airbnb has rewritten the rules of hospitality, implementing the platform with numerous services offered by the host and constructing a new culture of living.

Actually, starting from Airbnb it is possible to map different accommodation providers for the hospitality sector, just to quote some of them: *Onefinestay* is a rental provider reserved only to a luxury field in which are offered private villas and homes around the world. During the rental period the guest has the same services offered by a boutique hotel. But the are also *Homestay* and *Roam* which are used by who is looking for a co-working and co-living space. Instead, *Nesterly* is devoted to the world of elderly people and to young off-campus students, because it offers to a senior the possibility to host a student in exchange for some help for the house or personal activities. Finally, with *Camping in my garden* outdoor gardens are rented by campers around the world.

The spread of all these web platforms shows the importance these solutions have acquired in few years, but the plentiful increase of users also demonstrates the strong impact they could have on the touristic sector. This is very relevant because "the evolution of the world of hospitality is influencing interior design and stimulating its transformation" (Sammicheli 2015).

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[7]The home-swapping is a practice based on the home exchange, in which two parties agree to offer each other homestays (lodging in each other's homes) for a set period of time. Since no monetary exchange takes place, it is a form of barter, collaborative consumption and sharing. Diffused before the diffusion of Internet, today there are several Website able to facilitate this practice like www.homeforexchange.com, www.lovehomeswap.com, www.homeexchange.com.

[8]Started as a social practice the couchsurfing became a platform (www.couchsurfing.org) for members to stay as a guest at someone's home (homestay) often on a sofa, host travellers, meet other members or join an event. Unlike many hospitality services, couchsurfing is an example of the gift economy; there is no monetary exchange between members, and there is no expectation by hosts for future rewards.

3 Liberalization and Customization for a New Target

There are different aspects to underline in order to explain the influence of new web platforms on the hospitality sector. According to the research on the economical estimation of the impact of Airbnb on the hotel industry by Zervas, Proserpio and Byers "the rapid growth of peer-to-peer platforms has arguably been enabled by two key factors: technology innovations and supply-side flexibility".[9]

The web platforms are strongly influencing the new way of hotel design and management as well, because they generate the **liberalization** of the use of private spaces, like the domestic ones, for welcoming people for few days by payment. Guests can choose everything flexibly: where they want to go to sleep in a city, what kind of accommodation, how many services he or she needs, who is the host they would want to meet. At the same time hosts can add or remove themselves from the available supply of host with a swipe on an app, and similarly other suppliers can readily list and de-list the selection of spaces or services they have on offer (Zervas et al. 2017, p. 2). This process has been made possible by the diffusion of "technology innovations which have streamlined the process of market entry for suppliers, have facilitated searchable listings for consumers, and have kept transaction overheads low" (Zervas et al. 2017, p. 2). Besides these networks support the creation of new virtual communities able to offer the diffusion of new services, accessible by apps and web platforms, for the hospitality sector. This aspect is very relevant, because the real hospitality is not only related to the accommodation but to the feel of welcoming. This feeling can only be stimulated through an articulated system of factors such as places, people and experiences.

In fact during a rental via Airbnb guests have the possibility to stay in a private space, a single room, a flat, or a house directly related to a specific place where inhabitants display their own lifestyle. From a room in a large metropolis, through a tent in a garden or even a villa in an exotic place guests are invited to make contact with the specific lifestyle of their hosts. Guests can taste directly a "real" local experience in a place that it is not designed properly to accommodate travellers, but it is a private space for living. In this sense guests are exposed directly to cultural lifestyle as well as local environments.

This aspect is very relevant too because it is strictly linked to the experiences economy (Pine II and Gilmore 1999) which has been characterizing the project of the interiors spaces for many years encouraging the engagement of the users/consumers with brands, products and spaces. Today the web platforms of hospitality encourage immersive experiences based on the sensorial immersion in a local dimension and focused on the significant relationship between places, guests and hosts. We can affirm that the hospitality sector is moving to enrichment economy, quoting the reflection of the French sociologist Boltanski (2017): travellers will

[9]Georgios Zervas, Davide Proserpio, and John W. Byers (2017) "The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry". *Journal of Marketing Research*: October 2017, Vol. 54, No. 5, pp. 687–705.

seek out more personally fulfilling experiences that enrich them intellectually, emotionally and spiritually.

New behaviours and collective rituals are shared by the guest of these platforms so it is possible to register a deep transformation of the concept of welcome (Collina 2013). Of course, the sense of private and intimacy is quickly changing, because the immersive experience is not a completed private activity, but it stresses the shared dimension. Values such as trust, tolerance and care for someone purchase new importance and meaning.

At the same time we are assisting in the diffusion of the prosumer, a consumer who would intensively interact with the immersive dimension of the experience and **customize** the experience promoted by the touristic field. Starting from a personal and active approach guests can discover specific ways of living and experience different habits from their hosts as well as specific layouts and organization of the spatial solutions. They come into contact with materials, objects, furniture, fragrances, colours and decorations, strictly connected with the personal style of the host but also expression of a culture from a specific geographical context. All these material and immaterial aspects can help travellers to enjoy the travel experience, but also enrich themselves because they can find a connection with a local context, in which, out of the private spaces, there are relevant monuments, historical districts, entertainment and natural contexts which maintain their important touristic role. In fact, for instance Airbnb have introduced the Airbnb Experiences, a set of tours, activities like cooking or sports practices offered by a local host to a temporary guest who booked a room using Airbnb or not.[10]

Furthermore, another relevant aspect is the **feeling of "to feel at home"** that a guest can feel in a place that it is not his or her own original house, or the feeling of "belong anywhere" as it is declared by Airbnb advertising. These two feelings want to avoid for each guest the unpleasant sensation to live in an anonymous and standardized guest room, as it used to happen for many years in quite a lot of international hotel chains guest rooms. These feelings are not promoted only by the spatial solutions and well-designed aspects but also by the relationship between guest and host, who can collaborate in the discovery of the context. This aspect is strictly related to the sharing economy which is supporting the relevance of some values, not only connected to economic benefits, but also to rediscovery of a rich social dimension, like the sense of a collective community in which people can cooperate and share goods in order to arrange a better shared condition, the importance of the aware approach to the consumptions and the necessity to reduce waste.

So, the diffusion of new hospitality formats is possible because people are changing their lifestyles, and it is possible to register the affirmation of new behaviours and shared values.

[10]Airbnb Experiences: Available at: retrieved 28 December 2017 from https://www.airbnb.it/experiences.

Last but not least, of course, the possibility to pay less money for a good accommodation with all the amenities (a strategic position in the city, comfort and quality of interiors spaces…) than for an accommodation in a big city hotel has an additional important value. Furthermore, many specific hotel targets, as the family one, think that new type of accommodation, like flats promoted by Airbnb, is more flexible solutions for their needs and requirements, rather than a traditional hotel accommodation. This is related to the dimensions of spaces in relation to the cost, the possibility to have separate bedrooms or places where to sleep (one for parents and one, at least, for their children), the presence of a kitchen area where to cook special dishes for children as well as for any components of the group and for all these services and facilities that this type of accommodation often requires less money than in a conventional hotel solution.

4 The Negative Effect of the "Airfication" Process

Nevertheless, recent studies in different sectors proves that web platforms for hospitality generate also some negative effects, not only in the hospitality sector. The web platforms are having a strong economic impact; for instance, in Italy in 2016 the general impact of Airbnb on the economy was about four billion in a year,[11] but these platforms are imposing major changes in the morphological structure of the cities. In fact this system often supports the increase of spaces for the hospitality in context statements to phenomena of overtourism (Goodwin 2017),[12] like in Venice (Italy) or in others significant cities in Europe. The spread of welcoming spaces, realized in private houses, could offer a large number of accommodations in a context not well equipped in terms of services. Some cities are not prepared to an increasing number of guests, or small towns are not able to carry big numbers of tourists, so it has a meaningful impact on the cities. The result is the congestion of the cities which are not able to offer suitable services for all the tourists (e.g. transportations, trash collection). These elements have a negative impact not only on the touristic experience but also on the life of the inhabitants.

Researchers from the LADEST Lab at University of Siena analysing the Airbnb's effects in the italian context and has defined it as an "airfication" process [13] of the historical centers in the major Italian cities (LADEST Lab 2017). A large number of private houses and apartments have been converted into hospitality spaces, and hotels have reduced meaningfully their clients. The life in the

[11]Available at: retrieved 12 October 2017 from https://www.airbnbcitizen.com/vale-piu-di-4-miliardi-di-euro-limpatto-della-community-di-airbnb-sul-pil-italiano-2/.

[12]Harold Goodwin defined the phenomena of overtourism in "The Challenge of Overtourism". Available at: retrieved 28 October 2017 from http://haroldgoodwin.info/pubs/RTP'WP4Overtourism01'2017.pdf.

[13]The "Airification of cities" report by LADEST Lab is available at: retrieved 25 October 2017 from http://ladestlab.it/maps/73/the-airification-of-cities-report".

city centre depends on the degree of occupation of the spaces. The centres lost its important role, and stores cannot survive to discontinuous attendances. At the same time, there is the only one owner for numerous houses. The owner prefers to use the web platforms for the hospitality instead of other traditional rental processes because today the peer-to-peer market has less rules and restrictions. So, the benefits, caused by the sharing that it is turned into a real lease, are not fairly divided. Researchers found the inequality in the diffusion of benefits from welcoming activities.

Furthermore, this process also stimulates the diffusion of an homologated aesthetic for the interior space, because the same owner of uninhabited house is not interested in sharing his or her lifestyle, but the focus is on the economic profit. In this case, we are assisting in the diffusion of homogeneous and repeatable models of interiors, where it is frequently possible to find the same style: wooden floor, industrial lighting, minimalist furniture. In these houses, there are not masterpieces of design, but numerous furniture from Ikea and other big brands from the furniture sectors. Kyle Chayka has defined this new category of space using the term "Airspace" in his article *Welcome to Airspace.*[14] The AirSpace is this "strange geography generated by technology" that "shares the same sterile aesthetics". It is the "new home of digital nomads" but at the same time is an upgrade of the "non-place" described in 1992 by the French anthropologist Marc Augé who underlined "the interchangeability, ceaseless movement, and symbolic blankness that was once the hallmark of hotels and airports" (Chayka 2016). Now these qualities could be found in some private houses at rent. At the end, peer-to-peer platforms can generate an aesthetic homogeneity in which users are coming to demand, and tech investors are catching on. It could be the materialization of what the architect Rem Koolhaas noticed in his essay "The Generic City" in 1992.

5 Do You Really Want to Make Yourself at Home Everywhere?

Despite the recent consequences, the principal elements of web platforms for the hospitality have imposed an important afterthought not only on the typologies of the traditional hotels and hostels, in terms of new concepts and new formats for the welcoming, but especially on the idea of the welcoming experience which hotels and hostels can offer. Hotels are investing in becoming dynamic and attractive **social hubs** with unique and desirable services and amenities, but also innovative design and architecture able to promote local culture and flavour attracting new guests.

In fact, on the one hand guests would feel like at home also in space designed to temporarily welcome them and they wish for all the comforts to satisfy their needs.

[14]Kyle Chayka "Welcome to Airspace", available at: retrieved 12 December 2017 from https://www.theverge.com/2016/8/3/12325104/airbnb-aesthetic-global-minimalism-startup-gentrification.

But, on the other hand guests want to be surprised by well-equipped spaces and good services which they cannot enjoy in their own house.

In addition, web platforms for hospitality generated new reflections on the layout and organization of the spaces-services offered, but also on a replacement of an impeccable customer services, and the design of new experiences proposed by the hospitality spaces in order to offer exclusive and unforgettable experiences preserves their presence in the touristic market.

Ian Schrager, the godfather of the boutique hotel, has recently said that his aim for his new concept in the hotel field is to do "those things that Airbnb won't be able to do, which is the communal and social aspects of staying in a hotel, and all the other exciting entertainment that we can offer that they can't". So, to overcome the competition with AirBnB and other platforms for the hospitality "why not offer a microcosm of the best that a city has to offer right downstairs in the public spaces?".[15]

The transformations are applied on all the hospitality sector, but they are strictly focused on the inclusive and immersive atmosphere experiences, in which spaces meet services for the contemporary social traveller categories through articulated paths and stories: millennials, who represent the specific target, not only for the web platform developers, but also for all the contemporary touristic market.

Starting from these new perspectives in lifestyle and in the guest experience the hospitality sector is reshaping traditional formats and developing innovative formats for new spaces related to functional hybridization and cross-fertilization processes (Scullica and Elgani 2015a, b), sharing of spaces-services, connections with local and cultural contexts. The new trend in the hospitality sector is to define a condition that allows to feel welcome in a very comfortable, relaxed and innovative space which is really designed to welcome ever-changing characters.

5.1 Social Networks and Technology

Millennials, who represent the principal target of the hospitality sector in this period, have a specific feeling with technology, which they are able to use not only to study or work but also to define their own identity and above all to their consumption. In the hospitality sector, starting from the virtual community, constitutes of the social networks which support millennials in the choice of an accommodation, and arriving to temporary physical community, e.g. the collective community generated when you stay in a hotel/hostel during an event (like musical and arts festivals), are both opened to an idea of sharing in order to reach best services and qualities, but spending less and adding values to the experience. In

[15]In 2017 Ian Schrager has unveiled Public, a new hotel concept designed by Herzog and de Meuron to counter the threat of Airbnb in New York. Available at: retrieved 12 December 2017 from https://www.dezeen.com/2017/06/07/hotel-industry-denial-airbnb-ian-schrager-herzog-de-meuron-public-new-york/.

Mama Shelter Hotels, designed by Philippe Starck it is possible to interact with the temporary physical community of the hotel by a system of screens and social networks where it is possible to share some personal pictures taken in the hotel or in the city (Scullica and Elgani 2014).

In fact, concerning the sharing economy, millennials have a special attitude to share spaces, facilities and services, at different scales, more than other people in the past. For instance, it recently registered the increase and the diffusion of bike and car sharing services offered in the major cities around the world, but also co-working spaces and the possibility to work in collective spaces like in the hotel lobbies, or until private guest rooms, as it happens in some contemporary design hotels, are shared around the world. Indeed this new generation like comfort and qualities, but with innovative solutions in terms of spaces and furniture, unconventional details and mixed styles which could be accessible at the best price.

5.2 *Green Living*

In addition, contemporary travellers look at a "green way of living" but with special attention to the relationship of each space, with cultural environment and its peculiarities, in a "glocal" dimension. As consumers show increasing interest in conscious lifestyles, hospitality brands are investing in the definition of new eco-concepts. "Hotel brands recognize that directional design, exemplary service and sustainability do not have to be mutually exclusive concepts. As this mindset shift takes hold, hotels are increasingly working with guests to make responsible choices: inventive use of locally materials, creative recycling, proactive waste management and a supportive connection to community enterprise are all important ways to create microcosms of sustainability that also offer amazing travel experiences".[16]

5.3 *A Sense of Community*

The virtual communities created through the web platforms and social networks are also influencing the design of new spaces in the hospitality sector. Starting from the virtual dimension of a community which shares ideologies, behaviours, taste and trends and in which a person could interact, the *hotellerie* sector is trying to recreate this condition in physical spaces temporarily used by the guests.

Jo&Joe the new hotels chain launched by the Accor Group defines itself as a "community hotel" in which spaces are designed for collective activities.

[16]C. Davies "The Eco Experience: Sustainable Hospitality" WGSN Lifestyle and Interiors, 07.10.17.

For instance, there are some common spaces where to "meet and mix" each other, chat, cook and eat together, but there are also some rooms with big shared beds for more than one person in order to offer an unusual spatial solution to a new manner. At the same time the hotel presents itself as an "open house" able to offer to neighbours and travellers alike a rich program of engaging activities that promote meeting among the people.

6 Hybridization: The Future for the Hospitality Sector

Starting from the value of the community, through the important role of the technology and the attention of a sustainable approach in the hospitality, it is possible to underline a significant process that could be registered in the contemporary interior scenario: the hybridization process.

The method derived by the biological world, in which there is the process of combining different varieties of organisms in order to create a hybrid, acquires a new value for the interior design field. Merging different functions, above all in the public and private collective spaces, for instance inside hotels and hostels, represents a relevant trend in the interior design field because it defines "a specific place between a generic solution and a hyperspecialized one".[17] The functional hybridization of different typologies of spaces, the coexistence of different activities that before are located in defined spaces and times, as well as the connection of the design of the space with a system of services and the synchronization of different cultural elements, colours and materials became fundamentals in the contemporary design processes (Scullica and Elgani 2015a, b).

Collective spaces have to be more flexible and adaptable to different ways of using by different kinds of people. In the hotels placed in the big cities, public areas, like the common areas and shared lobbies, lounges, restaurants and bars, have to be open to a variety of guests, but not only. Recently hotels opened the common spaces also to local inhabitants in order to increase the use of the spaces and the possibility to meet each other and, of course, come into contact with the atmosphere and the mood of the hotels.

Collective spaces have not to be used only by the hotel temporary guests, but by many other people for some hours or less. This underlines the importance of adaptable solutions, based on a system of space–furniture–objects, able to be transformed to give the proper answer to specific needs, changing the overall experience in the same place and the perception of materials, lights and furniture.

At the same time hospitality spaces transform their spaces and services or acquire new functions with the intention to turn this space into point of meeting for the city opened to the citizen. For instance, in a large number of low-cost design

[17]Giulio Iacchetti has ironically proposed the image of a mule to describe the idea of hybridization in the design field, during the talk "Office Design Ibrido", organized by Renata Sias during Design City Milano, 2017.

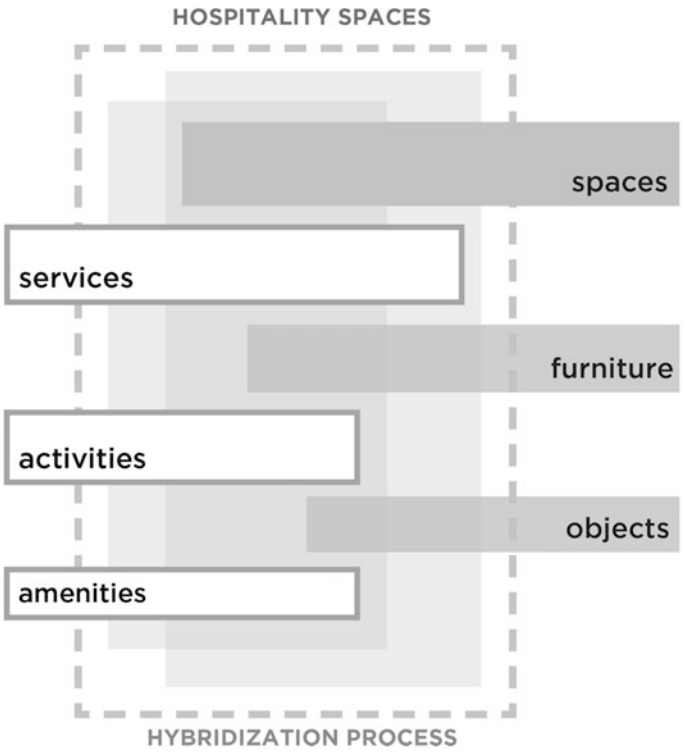

Fig. 2 Hybridization process in hospitality spaces

hotels and hostels there are meeting rooms and co-working spaces. In this way these spaces are continuously blurring the lines between different fields: common–private, pleasure–work, work–entertainment and is in a fluid condition, as underlined by Zygmunt Bauman some years ago talking about the contemporary society, where fluidity permeates not only functions but also spaces (Bauman 2000).

It happened in Shani Hotel in Wien, auto-defined the first co-working hotel, where working spaces merged to other collective spaces are attractive not only to the guests but also to inhabitant and business travellers. Another interesting example is the experiment run by Airbnb and We Work, two of the world's most valuable technology start-ups respectively connected to the world of the hospitality and the work field. When renting a room on Airbnb's site, corporate customers will be able to save a spot at a WeWork office nearest to where they are staying in order to provide travellers with amenities commonly found in hotel business centres, such as a work desk, Wi-fi, printers and meeting rooms (Zaleski 2017) (Fig. 2).[18]

[18]Zaleski O. (2017) *Airbnb and WeWork Test a Shared Workspace Program for Business Travellers.* October, 04, 2017 Available at: retrieved Dec. 12, 2017 from https://skift.com/2017/10/04/airbnb-and-wework-test-a-shared-workspace-program-for-business-travelers/.

6.1 Common Spaces: Hybrid Lounge

In particular, it is possible to underline the diffusion of a special space which is very relevant in every new hospitality space and we can define it as the "hybrid lounge". In the spaces of traditional hotels, the "lounge" has been a special space where guests can traditionally wait or rest during their acceptance or their staying in the hotel before their departures. But today, thanks to new technologies and the ways of living–working–travelling, lounge may have different options of using: for rest, of course, reading, but as well as for studying and working through the use of portable technological devices. As it happens in ACE Hotel in London, where the space is divided into an open series of room-like zones, there is a long social table near a sofa and cafeteria mixed with a small shop. The result is a "social hub"—a place to work, relax or wheel and deal 24 h a day. Indeed lounges may also offer a place where to organize small working meetings, far from the traditional meeting rooms of the conventional business hotel and spaces.

In addition, these spaces can be related to bar and restaurant services and facilities: the way of eating in the contemporary everyday life is different for new targets; new targets could prefer to eat something while doing other activities, business or leisure ones in the place traditionally used for eating (bars and restaurants).

At the same time the "back of the house" (kitchen and other services spaces presented in an hotel) can be more open to customers and guests. In many contemporary cases, millennial travellers can be more adaptable to serve themselves in a bar counter or to cook for themselves and their relatives in a restaurant kitchen.

Obviously all of these spaces, hotel restaurants and bars, may also offer their services in a traditional way, through the use of service staff, because some people need or like to spent a dinner in a traditional way, but, at the same time, it is necessary to think about new ways of offering dinner and bar facilities, according to new habits and users. These new aspects, related to new ways of living, are deeply influencing hotels' interior design and are making it more similar to comfortable domestic spaces.

6.2 Private Spaces: New Personal Dimension

Each hotel could offer several menus of guest-rooms' typologies: from the traditional double ones, to the family room, to multiple guest-rooms to share with other people. However, on the private guest-room side, there have recently been influences promoted by web platforms for the hospitality sector. First of all, the idea of welcome is very different and subjective nowadays for every guest. In order to offer the possibility to deliver a really welcoming feeling a private space, hotels and hostels have to introduce hyper-personalization services but also a real flexible layout. The mix between a space able to be used in different ways and bespoke

services tailored on the guest personal needs allows guest to feel welcome. At the same time the experience in an hotel space should be unique and very satisfying, and the guest should find an atmosphere able to involve him or her emotionally and intellectually. In this sense, providing themed spaces, all-in-one amenities and entertainment extend the appeal of hospitality brands, creating multiple experiences within one destination location. But also breaking down barriers between spaces and services could be one of the directions of new spaces for the hospitality. For instance sport activities have become very relevant for the well-being of contemporary guests and some hotel chains promote new concepts for the guest rooms in which it is possible to do some physical exercises, like in the Vitality Rooms in Swissôtel and in the Five Feet to Fitness spaces in the rooms of Hilton's hotels. In this way, rooms promise guests a healthier and more accommodating environment to meet one's emotional and physical needs. At the same time, the multi-sensorial experiences continue to have a relevant impact: colour, sounds and scent enhance well-being, creating uplifting, stimulating or calming moods as required by who spent a lifestyle in motion.

7 Inclusive Spaces for a Real Welcoming Experience

In conclusion, all the elements analysed permit to underline the influence of web platforms on the hospitality sector in the reshaping process of the experiences and spaces related to hotels and hostels. At the same time hotels and hostels could maintain their significant role in the touristic market if they will be able to give the right answers to the contemporary needs, but also to offer different points of view on the welcoming experiences. In this sense it is important to highlight how in the contemporary hospitality sector the design process needs an approach able to connect experiences and design: different scales and typologies of the interior and exterior spaces have to be integrated and merged with other aspects, like strong social values connected to innovative lifestyles, in order to define "social spaces" in which new behaviours find their expression in a physical dimension and in a digital one, because they are supported by the integration between physical space and virtual reality. Hybrid spaces that encourage and engineer real-life interactions and where the people can meet, to work, to eat and to relax became fundamental. The organization of multifunctional communal spaces, opened in a series of room-like zones, is becoming critical to consumer expectations of the hotel experience, for both flexible work and dynamic leisure uses.

In addition, services and amenities offered, which have a relevant impact on the way to interpret and use the space, are fundamental in order to define immersive experiences that are co-generated by those kinds of processes.

Indeed the best experiences anticipate people's needs, tap into their emotions and engage their sense. So new hospitality spaces are seeking to make their purpose relevant and emotionally engaging to guest in order to preserve their role in the market. The construction of storytelling around an hotel space permits to involve

people in the use of well-equipped space and in the enjoyment of services. In this sense, hospitality spaces could support personal well-being, offering the development of inclusive spaces where people can feel more enlightened, stimulated and enriched.

On the other hand, hospitality spaces could promote social innovations through the design of spaces and services for a cross-generational and cultural involvement. The hospitality spaces could be inclusive spaces when they will be able to be available and pleasant for different categories of guests among different typologies of clients, becoming spaces in between the private and the public dimension, the inside and the outside of the city.

This is possible using an *human centre approach* to the design of spaces and services. An example that can highly emphasize this reflection is the Good Hotel London. Located at the Royal Victoria Docks in London, on the River Thames, Good Hotel is a profit for non-profit business because it offers long-term unemployed locals a unique hospitality training and a chance to re-integrate into the economy. The unique social business concept is based on the idea to combining business with doing something good, while offering a premium hotel experience. Instead the Magdas Hotel in Vienna offers jobs and training to multilingual former asylum seekers who will later be employed by the hotel as staff. Both these examples are focused on the intention to extend the concept of welcoming and integrating it with the social challenge in the contemporary world: integrate people from neglected groups and foreign countries. In this sense the welcoming experience is enriched not only from the design of the spaces but also from the human experience offered during the time spent in the hotel.

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Individual Rewarding and Social Outcomes in the Collaborative Economy

Davide Arcidiacono and Ivana Pais

Abstract The sharing economy has spread since 2004, but it is only in recent years that consultants and academics have started doing empirical research. The first evidences—even amid still contradictory results—show a common finding: 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 affective 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.

1 The Collaborative Economy Paradigm: Towards a New Model of Production, Consumption and Sociability?

In a very short time, the collaborative economy has moved from the *avant-garde* to an *almost* paradigm. However, at the individual and collective level, growing attention to this new model of exchange is not always accompanied by sufficient clarity and consensus on the concrete impacts of these practices.

To look deeper into the collaborative economy, it is necessary to step back from the neoclassical economics perspective and its paradigm of a maximising and rational actor with static preferences and needs and consider any economic action as a dynamic experience, the result of a difference between ex ante utility

The chapter is the result of a joint work of the two researchers. However, paragraphs 1 and 2 can be attributed to Davide Arcidiacono, while paragraphs 3 and 4 can be attributed to Ivana Pais.

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(before purchasing) and ex post utility (made after consumption) that induces a change also in future choices (Alchian 1950; Hodgson 1993). At the same time, the collaborative economy needs a more experiential approach, genuinely sociological, since many of the benefits generated by the act of sharing can be understood as "unintended" outcomes of this social action (Merton 1936). The relational dimension is constitutive of this process in terms of individual motivations (antecedents), embeddedness of the exchange (interaction) and production of social capital (outcome).

Therefore, on the one hand, the collaborative economy is a model for the efficiency of assets owned and the valorisation of so-called *idle capacities*. The latter are based on the valorisation of the overcapacity of all those resources (tangible and intangible) that are not fully exploited and which the traditional economic paradigm considers to be no more than waste and trash (European Parliament 2016). From this point of view, the collaborative economy is, therefore, consistent (and not opposed) also with a maximising and individualistic scheme of the market economy.

On the other hand, the collaborative economy, at least theoretically, is opposed to normal systems of production and the linear distribution of goods and services through the promotion of a circular model that reintroduces the value of concepts such as reuse, sustainability, equity, and community. Somehow, the collaborative economy could also be described as a mobilising strategy of the so-called *lifestyle movements* (Haenfler et al. 2012), as a form of *resistance* (De Certau 2001) of the *citizen-consumers* (Arcidiacono 2013) in order to re-embed the economic practice through a proactive use of digital technologies promoting a *new connective social action* (Bennett and Segerberg 2012).

Even if a true collaborative movement does not exist nowadays (Schor 2014), the rhetoric of sharing predominantly points out two collective, in addition to, economic outcomes: the environmental impact, because a model based on reuse and the sharing of personal assets appears to be more sustainable; and the social impact, because sharing and collaborating as "re-socialising" practices would counteract the anonymity of the market.

The tension between *me* and *you*, *myself* and *others* is a core dualism in the collaborative economy model that we could find in its various definitions: starting from the title of one of the first best-selling books in the field "*What's mine is yours*" by Botsman and Rogers (2010), or Benkler (2004, p. 275) who defines sharing as a "pro-social" behaviour, while Belk (2007, p. 126) considers it as "the act and process of distributing what is ours to others for their use and/or the act and the process of receiving or taking something from others for our use". Moreover, according to Belk's view (2010), there is a tension between two different meanings of sharing: *sharing in* and *sharing out*. *Sharing out* outlines a practice based on a relationship with another self, defined and distinct, typical of all those exchange and gift practices in which there is a clear definition of the property; *sharing in* sees property as common and shared, extending the self through each other and introducing a sense of "we".

Likewise, Pais and Provasi (2015) proposed a classification of the collaborative economy practices by distinguishing *collaboration*, *reciprocity* and *common-pool arrangements:* reciprocity in a strict sense corresponds to the brave reciprocity defined by the economics of the gift, which acts on the principle "I always cooperate in the first round, and in the next ones I behave as the partner behaved in the previous round; I cooperate if he cooperated, I defect if he defected", so that it envisages an initial opening of credit for the partner's cooperation; in collaboration, the reciprocity becomes cautious ("I cooperate only with those who cooperated in the previous round; I refrain from cooperating in the first move, waiting to see how the partner behaves"); the cycle is "short"—i.e. it is expected that return will soon be made and that it will be as equivalent as possible to what has been given—and the instrumental motives prevail over intrinsic ones; finally, common-pool arrangements are based on unconditional or gratuitous reciprocity, where the player acts on the principle: "I always cooperate regardless of the partner's behaviour"; it is a generalised reciprocity, since it is based not on a direct personal relationship but on a common sense of belonging and a process of mutual recognition, but restricted to a specific community.

Analysing the role of economic and social relations in collaborative platforms, it is important to point out the fact that the use of ICT has blurred the boundaries between work and consumption (Scholz 2012; Sundararajan 2016). The actors of the collaborative economy are prosumers (producer + consumers), hybrid figures between work and consumption, professionalism and hobbies (someone also calls them ProAM or *professional amateur;* see Flichy 2010). The sharing platform is the visible part of a process to redesign the organisational processes and the value chain. Therefore, sharing practices are embedded in an increasingly indistinguishable flow of work and non-work activities, hybridising roles and skills, the private and the public sphere, the wage and other sources of income.

At the same time, digital collaborative platforms have contributed to profoundly modifying the weight and value of formal credentials (such as qualifications) and informal credentials (such as reputation) within the market, with an emerging prevalence of the second type. Therefore, the thresholds of access to the production sphere are lowered, such as the cost of labour, devaluing the skills of the more experienced professionals and subjecting them to the so-called *cult of the amateur* (Keen 2007). Today, this risk is defined as "uberisation" (in relation to the well-known digital platform) (Picard and Teboul 2015) and it begins to lend a sense of suspect around the collaborative economy as a regressive model of capitalism, a kind of "technology driven" low way towards flexibility. Even though, in recent times, many scholars are pointing to the increasing commercialisation of some platforms alongside an increasing degree of professionalisation among providers (Andreotti et al. 2017).

This tension between economic and social aims seems to have more recently fuelled the so-called "share wars" that seek to separate the existence of *good sharing*, where the collective dimension of value creation prevails, from *bad sharing*, where the individualistic market logic seems prevalent (Gorenflo 2015).

The results that emerged from several analyses on this issue are not convergent, and they show the great ambivalence of this economic paradigm (Martin 2016; Ikkala and Lampinen 2015; Böcker and Meelen 2017; Hamari et al. 2016) both at the individual and collective level. Since the two dimensions could not only be considered as a dichotomy and they could also be complementary and synergic, we decided to distinguish the following issues in the next paragraphs:

- Individual antecedents and benefits of collaboration for producers and consumers;
- Non-economic collective outputs: sociality and sustainability in sharing practices.

2 Individual Antecedents and Benefits in the Collaborative Economy

The collaborative economy is growing, but there are still huge differences among the different socio-institutional contexts. In Anglo-Saxon countries, the sharing market is estimated at more than 105 million of sharers in the USA alone, while there are almost 23 million in the UK and 14 million in Canada (Owyang 2014). A Nesta Center research (2014) estimated that 60% of British people already participate in the collaborative economy. More cautious estimates come from the Eurobarometer (2016), which showed that 52% of Europeans are aware of these services, but only 17% have provided or received services on these platforms at least once. More than one-third have used them in France (36%) and Ireland (35%), while Italy is in line with the European average (17%), and most of the southern and eastern European countries are below this value. Younger and highly educated respondents, employed and living in large or medium-sized cities, are more likely to be aware of collaborative platforms (+11%) and to have used their services (+15%).

It is clear that this economy intercepts, above all, a new target of digital users, the so-called *Generation Y* or *Millennials* (Strauss and Howe 2000): born between the 1980s and 2000s, they earn 20% less than the previous generation because many of them are employed in low-paid jobs, despite the higher college attendance rates. They are part of the so-called *Flux Generation* (Safian 2012), because they live different career changes in their lifetime due to growing labour mobility and an increasingly fluid market, and, therefore, they represent the constituency of a new social class, named *the precariat* by Standing (2014).

The reasons behind the success of collaborative practices within this group of consumers are linked to both the uncertainty and the limited scope of their budget constraints, which justifies more attention to the savings and income integration opportunities generated by the collaborative economy and a cultural attitude towards social innovation. This is related to the "digital divide" and "participation divide": male, younger, higher educated and higher income individuals tend to be more active and engaged online, because participation necessitates the availability of resources such as time, money, skills (Van Dijk 2005; Andreotti et al. 2017) and, in some collaborative economy services, goods.

Although Fraiberger and Sundararajan (2015) predict that major advantages in the collaborative economy will be obtained by low-income groups, the data testify to the persistence of an asymmetry risk in accessing and distributing the benefits of sharing. Schor (2014) interviews with US providers on three for-profit platforms show an "inequality-enhancement" effect: well-off and highly educated providers are using the platforms to increase their earnings, by doing work that is traditionally done by people of low educational status, and suggesting a "crowding-out" effect.

The collaborative economy looks like an economic model in support of a young, resilient middle class troubled by the economic and labour crisis that threatens its level of well-being, rather than a practice capable of generating greater inclusiveness and solidarity with those excluded from the labour market or welfare, who would not have the appropriate *capabilities* (Sen 1992). Dillahunt and Malone (2015) point out that a sharing economy is not new among individuals who are underemployed, financially constrained, or from disadvantaged neighbourhoods; what is new is having trust in technology to support the sharing economy, and this requires balanced reciprocity, collective efficacy and income generation through "linking" and vertical capital.

The case of gentrification produced by Airbnb (Gant 2016) in several cities is an evident example of that: in some urban areas, centrally located and traditionally inexpensive for less wealthy families, the prices in house rents increased as an effect of the great success of the platform in such neighbourhoods, creating many tensions and growing hostile attitudes towards the company.

Therefore, it is no surprise that economic reasons are the main driving force behind the collaborative economy and that its rise coincides in some way with the financial crisis of 2008 (Gansky 2006). European data confirm this evidence: 41% of European consumers surveyed said that access to services is organised in a more convenient way, while 33% mention the fact that it is cheaper or free (Eurobarometer 2016).

These data are also confirmed by a series of studies on some specific sharing transactions: several research studies in American or European sharing markets (Owyang 2014; Altroconsumo 2016) demonstrate how economic motivations are the most important drivers. In the case of Zipcar, a car-sharing service, Bardhi and Eckhardt (2012) highlight how convenience and saving money are the main drivers that support participation among users; Piscicelli et al. (2014) demonstrate that the importance of preserving the natural environment in Ecomodo, a platform for lending and borrowing everyday goods, is not the main concern among users, and only one-third of respondents indicate "being green" as the main reason.

A study by Böcker and Meelen (2017) highlighted that the motivations to share would be influenced by the subject of the exchange: economic motivations are prevalent for valuable goods, while accommodation and food sharing are most socially motivated and car/ride sharing are instead mostly environmentally motivated. Bellotti et al. (2015) find that while providers place great emphasis on idealistic motivations such as creating a better community and increasing sustainability, users are looking for services that provide what they need while increasing value and convenience.

The findings of Liu and Mattila (2017) show that individual responses to Airbnb's advertising depend on an individual sense of power, defined as perceived asymmetric control relative to another: powerless individuals respond more favourably to the sense of belonging appeal ("feeling at home"), whereas powerful individuals react more positively to the uniqueness appeal ("atypical place to stay").

Moreover, strict "utilitarian" evidence is contradicted by Tussyadiah (2015) who, in a study on Airbnb hosts, shows that getting in touch and interacting with people is an important driver. Moreover, a research carried out in Italy on BlaBlaCar (Arcidiacono and Pais 2017) highlighted that even if saving is the main factor supporting the choice of joining the car-pooling platform, it is often combined with a sociality driver.

Sahlins (1972) distinguishes three forms of reciprocity: *generalised reciprocity*, in which people who share do not expect any return; *balanced reciprocity*, in which a return is somehow expected; *negative reciprocity*, in which products are exchanged only in one's self-interest. According to that classification, Decrop and Graul (2016) found that *balanced reciprocation* is more attractive for sharing consumers than *generalised reciprocation*. Benlian and Hess (2011) also showed a positive relationship between interpersonal and system trust in the sharing commitment, but Ikkala and Lampinen (2015) indeed stressed that it is mainly the presence of money that increases the level of trust in the system because it empowers the sense of control among users.

These evidence are important also in the light of the Eurobarometer's results (2016) that show that the main problem for people using the services offered on collaborative platforms is not knowing who is responsible in case a problem arises (41%) and not trusting Internet transactions in general (28%).

In PwC's survey, 89% of respondents stated that trust is the first condition for participating in sharing activities (PwC 2015). We need to consider that trust in a sharing platform is mediated by the platform design and the digital reputation systems. Such tools can produce ambivalent results: they may be subject to the bias of fear of some form of negative retaliation by other users (Resnick and Zeckhauser 2002), and they are also characterised by a deep opacity (Pasquale 2015), or even promote a sense of renewed individualism and exclusivity of their relational circle (Papacharissi 2011; Hearn 2016). At the same time, in an international study on the BlaBlaCar community (Mazzella and Sandurarajan 2016), respondents said they would trust people with a BlaBlaCar profile with whom they have travelled (88%) more than their colleagues at work (58%) or even neighbours (42%).

In summary, the results of this literature review reveal a gap between the communitarian rhetoric adopted by the platforms and individual motivations that are often instrumental. Nonetheless, the collaborative economy is not a coherent phenomenon, and it is important to distinguish between producers and consumers' motivations, and there are strong sectorial differences. Even if it is not the main driver, social capital plays a crucial role both as an antecedent and in mediating the effect of participation in collaborative platforms.

3 Non-economic Collective Outputs: Sociality and Sustainability in Sharing Practices

The more we move from the individual sphere to the collective outcome, the more the results of the research become quite ambiguous and even contradictory. Ambiguity is somewhat embedded in the collaborative economy discourse, as argued by Martin (2016) who identifies different frames in the public debate: as a form of neoliberal capitalism or a pathway towards a more decentralised, equitable and sustainable model of development. The first frame is becoming more relevant in business and marketing narratives in recent years, with an emerging *share-washing* risk (Kalamar 2013) that delegitimises the second. Moreover, assessing the sustainability of an economic practice is extremely complex, and today, the debate on sustainable development indicators is still not finding reliable and shared measures within the scientific community (Montiel and Delgado 2014).

Looking specifically at the results of some specific studies on the environmental impact of sharing practices, some contrasting evidence are highlighted. A French study on a barter/reuse platform (Parguel et al. 2016) has shown that such practices do not necessarily lead to a more sober and sustainable lifestyle but may also be consistent with forms of overconsumption or compulsive consumption. The results in the mobility sector can be even more controversial: Martin and Shaheen (2010) highlight the risk that car sharing can even raise emissions when it provides access to the car by those who do not own it; other surveys (Ademe 2015) show, however, a sharp deviation from the use of private cars to collective transport among car-sharing users. At the same time, ride-sharing analyses testify a doubling in the average loading factor of a vehicle—from 1.4 to 2.8 persons (Handke and Jonushadt 2013).

These contradictory results are also due to a strong discrepancy between the declared and implicit attitudes of the users interviewed and their concrete behaviour, often resulting in many behavioural studies on the so-called *critical consumers* (Carrigan and Attala 2001; Marguerat and Cestre 2002; Vantomme et al. 2005). Hamari et al. (2016) also confirm this discrepancy among sharing consumers: the perceived sustainability positively influences consumer attitudes, but this aspect has a limited impact on concrete participation within the platform; on the contrary, the relevance of potential economic benefits seems to have a more significant effect on concrete behaviours.

Looking at the aspect of sociality, relations and trust are certainly a *connective tissue* of all the sharing practices. A study on the BlaBlaCar community in Italy (Arcidiacono and Pais 2017) shows that more than half of respondents develop forms of non-occasional interaction with other BlaBlaCar users: 56% travelled again together; almost a third have become friends on Facebook or other social media with other users, and more than a quarter declare the start of a friendship or a recurrent social relationship; only 20% of the sample declares that they have not built any kind of social relationship with other users. The relationality of the service is—paradoxically—at the origin of one of the most important limitations of the

reputational system: the difficulty of users in giving negative feedback. After a rather unpleasant travel experience, more than a quarter of respondents admit that they did not want to damage the reputation of a person they travelled with, so they leave a positive feedback (24%) or prefer not to leave feedback (3%). This evidence confirms the results obtained by Zervas et al. (2015) based on their analysis of ratings collected for over 600,000 properties listed on Airbnb worldwide: nearly 95% of Airbnb properties boast an average user-generated rating of either 4.5 or 5 stars (the maximum); virtually, none have less than a 3.5 star rating.

Moreover, on the socio-relational dimension of sharing services, some analyses on Couchsurfing, Relayrides or Zipcar (Parigi and State 2014; Bardhi and Eckhardt 2012) highlight a low-quality social capital production. A study on a time-banking platform has highlighted more of a tendency for occasional interaction rather than a recursive relationship (Arcidiacono 2016). Interactions are predominantly instrumental and pragmatic, and they hardly develop into deeper sociality. Often, this limited sociability could be somehow preferred by the sharing platforms because when relationships recur too often, users tend to overcome platform brokering. In other studies on the digital time banking system, Dubois et al. (2014) found that some members with high cultural capital prefer trading with others of the same social status. Similarly, forms of racial and class discrimination have also been found in sharing transactions with Airbnb or food-sharing practices (Edelman et al. 2017; Schor and Fitzmaurice 2015).

Research evidence on the ecological and social impact of the sharing economy is still ambiguous. What emerges is the risk of a normatively affirmative bias that considers social-mediated relations as inevitably good for the environment and society, while underestimating the non-intentional consequences of the collaborative economy. Similarly, in analysing the social capital generation, the expectation is that collaborative platforms would create strong community ties, while evidence demonstrates that they can facilitate the creation of weak ties, which also present their social utility in terms of reduction of homophily and of informational redundancy. However, even such a result is not always confirmed by the mentioned studies which highlight selective networks with high homophily that create possible problems of access discrimination.

4 Conclusions: Regulation as a Tool to Balance Individual Interests and Collective Well-Being

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 an enrichment or an alternative to the dominant linear and vertical capitalist model. Moreover, the challenge of the collaborative economy is not to distinguish between good and bad sharing since it involves more the concrete recognition of the plurality of models and practices that populate it

which overcome the recurrent stereotypes both in a positive or a negative sense. 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.

The research data examined show that utilitarian and economic motivations at individual level are crucial and often far more relevant than the dimensions of sustainability or sociality, although these motivations are often not alternatives but complementary, especially among young people with high social capital. Considering the individual and collective drivers and outcomes as mutually exclusive could be methodologically and theoretically misleading. It is even better to consider a process of mutual reinforcement between the two that could define a different mix or *equilibria* that could change with the social profile of the actors involved, the type of object shared, the presence of a reward (material or even a symbolic one) and the type of rating or reputation tool for enabling the exchange within the platform.

Moreover, if the individual benefits and drivers are rather easier to measure because they rely more on the performance of the collaboration, to the contrary, collective benefits are more difficult to measure as testified by the evidence gathered which is much more controversial and less clear.

The joint consideration of the synergic relation between the individual and the collective dimensions helps to partly reduce these ambiguities and poses three significant challenges:

- First, the enabling of new forms of exchange, embedded in social relations, and the creation of new forms of connective actions based on weak ties and new forms of community. In this field, it is important to analyse the social norms that regulate the exchange, avoiding naive interpretations of the role of social capital and deepening also the potential limits of this approach;
- Second, the platform's governance, i.e. how decision-making processes in the value chain are structured and how generated value is distributed among the different actors involved. According to many scholars (Bauwens and Kostakis 2014; Scholz and Schneider 2017), changing the platform governance is the crucial issue: in a cooperative, the benefits are distributed widely among users increasing the inclusiveness in the value generated and distributed through the sharing platforms. This debate has the limit of addressing the issue from a strictly normative point of view, whereas the main implications are at the organisational level;
- Third, regulation, i.e. the control, monitoring and sanctioning system that inhibit free-riding behaviours, pure monopolistic/oligopolistic value-extraction strategies from peer2peer networks, as well as abuses or damages to producers/users. Regulation represents an important aspect in different arenas: the accessibility and protection of consumers; the protection of workers and the enabling of competition. In this framework, the role of the State cannot be removed from the equation in the name of the *myth of disintermediation* and it is not limited to the regulation issue, but it is also about creating policies for enabling, monitoring

and improving the proper development of this new form of economy. The public sphere has always played a central role in promoting innovation (Mazzucato 2013), and this can be true also for the collaborative economy, in particular at the local level: the analysis of the so-called *sharing cities* (Agyeman and McLaren 2015) highlight a number of strategies in promoting this new economy with a different "generative" impact on local communities.

The social and legal regulation of the collaborative economy requires even more of an effort for an understanding that goes beyond the rhetoric of the naive distinction between good and bad sharing. It also requires a richer analytical perspective that jointly considers the individual and collective level in order to identify the relational practices actually at work on collaborative platforms, while also highlighting the "traps" of the reciprocity and the difficulties in finding a path for a sustainable development.

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Effective Design and Management of Shared Transport Services: New Challenges for Operational Research

Maurizio Bruglieri

Abstract The aim of this chapter is to review and analyze the contribution of Operational Research (OR) in both the design and the management of shared transport services. 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.

1 The Benefits of Operational Research to the Sharing Economy

Operational Research (OR) is a discipline dealing with the application of analytical methods, such as mathematical modeling, simulation, and mathematical optimization, to help make better decisions. Originating in military efforts during World War II, its techniques have grown to address problems in different industries (Lenstra et al. 1991).

While in other scientific disciplines, the focus is on describing a problem or a phenomenon and on studying its properties, on the contrary OR has not a descriptive purpose. Indeed, its aim is to find the best solution of a decision-making problem having different available alternatives (*feasible solutions*) and at least one criterion to evaluate them. For this reason, it should be also renamed as the "science of better" (see the Web site www.scienceofbetter.org for a collection of OR applications in different fields). Employing techniques from mathematical sciences, OR arrives to detect optimal or near-optimal solutions to complex decision-making problems.

In the sharing economy context, OR revealed to be useful to solve several optimization problems arising at the strategic, tactical, and operational levels. For

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instance, for bike/car sharing services, a typical strategic problem is the localization 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 in the next sections this kind 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, Sect. 2 is devoted to the optimization problems arising in the car sharing and bike sharing mobility services; Sect. 3 is dedicated to carpooling (i.e., ridesharing) service optimization; Sect. 4 focuses on the collaborative logistics; finally Sect. 5 draws some conclusions and future challenges for the OR in shared transport services.

2 Optimization Problems in the Design and Management of Car Sharing and Bike Sharing Services

Shared mobility services for bicycles and cars have become very popular in recent years (e.g., currently, there are more than 7,000 bicycle sharing systems in the world and over 800,000 bicycles involved) attracting the attention of the OR community. According to the survey of Laporte et al. (2015), the related literature can be classified under five main headings: station location, fleet dimensioning, station inventory, vehicle relocation, and rebalancing incentives.

2.1 Station Location

Concerning the bike sharing, Martinez et al. (2012) have developed a mathematical model to optimize at the same time the location of shared bicycle stations, the fleet size, and the relocation of bicycles throughout the day. They propose a relocation heuristic that apply to data from the city of Lisbon.

Martens (2007) studied several policies initiatives to promote the use of bike sharing systems in the Netherlands. She emphasizes the importance of locating parking station close to railway stations.

Chow and Sayarshad (2014) use a game theory approach to formulate the station location problem for evaluating the impact of designing a transportation network considering a preexisting network. The approach is applied to the bike sharing system of Toronto, making concrete subsidy recommendations.

Concerning the car sharing, Kumar and Bierlaire (2012) developed a mathematical model to locate electric car sharing stations in Nice. The model takes into account the attractiveness of the stations to the users located in their vicinity, as well as the distance between users and facilities. From the results of the model, the authors infer useful recommendations. In particular, they recommended caution

before adding new stations in order to minimize the impact of the so-called cannibalization.

Correia and Antunes (2012) have developed three mixed integer linear programming (MILP) models to determine the best number, location, and size for the depots of a one-way car sharing system. Their models were tested on data from the city of Lisbon, showing that 75 depots have to be located to fully satisfy the demand.

2.2 Fleet Dimensioning

Concerning the management of a bike sharing service, Shu et al. (2013) addressed the following questions. Given stations locations, how many bicycles should be deployed in order to capture the existing demand and thus ensure the system viability? Given time-varying travel patterns, how should the bicycles be distributed? What should be the size of the stations? To this purpose, the authors have developed a stochastic network flow model that, under suitable assumptions, they formulate as a linear program. They carried out a numerical analysis using transit data from Singapore. The authors highlighted the importance of deploying the right number of bicycles at the right locations because this affects their utilization rate and the way in which they circulate within the system.

Instead, George and Xia (2011) and Fricker and Gast (2015) used a queue theory approach to analyze the effect of bicycle station capacity on system performance.

2.3 Station Inventory

Station inventory consists in determining the ideal number of vehicles to locate at each station. Nair and Miller-Hooks (2011) searched for determining this number at different times of the day taking relocation costs into account, in a general vehicle sharing service. They modeled this problem as a chance-constrained stochastic optimization problem.

Raviv and Kolka (2013) investigated the same problem for bike sharing service. The authors modeled the problem as a dynamic inventory system.

In his Ph.D. thesis, Chemla (2012) investigated a similar problem by means of simulation and local search. Vogel et al. (2014) tackled the imbalance problem through an allocation and relocation model. They used a mathematical integer programming formulation in order to determine the optimal number of bicycles at each station while minimizing the expected relocation cost for a typical bike demand. The model was solved by means of a matheuristic integrating large neighborhood search with an exact integer linear programming solver. Results were presented on data from the Citybike Wien system.

2.4 Vehicle Relocation

Most car sharing services (e.g., Car2Go, Enjoy) and bike sharing services permit one-way trips, i.e., allow the user to pick up the vehicle in one station, and return it in another one. Although one-way systems are more attractive for the users for their flexibility, they may cause a possible unbalancing between the demand and availability of vehicles (e.g., near the railway stations at the beginning of a working day) or vice versa between the request for return of the vehicles and the availability of free parking lots. In such cases, the service provider has to develop strategies to relocate the vehicles and restore an optimal distribution of the fleet. Such strategies depend also on the available data and the main goal of the relocation.

Barth and Todd (1999) propose the following classification concerning the vehicle relocation:

- *static relocation*, based on the immediate needs of a parking lot. Thresholds can be defined, corresponding, for instance, to a minimum and a maximum number of vehicles present at each station, in order to activate the relocation mechanism;
- *historical predictive relocation*, based on an estimation of the requests made using historical data of the service or travel demand estimation techniques. The aim is to estimate what will be the shortage or excess of vehicles at each station, in order to activate in advance the relocation mechanism;
- *exact predictive relocation*, if one has the perfect knowledge of the requests (e.g., a car sharing service on reservation). In this case, the relocation mechanism can be organized in an optimal way, so as to minimize the waiting times for customers.

Another possible distinction is between *static* and *dynamic* relocation. In general, the former happens during the night, while the latter throughout the day. Most of the research on vehicle relocation addresses the static case since it is easier to be modeled and also because the impact of repositioning is more important during the night (Laporte et al. 2015).

For the exact predictive relocation in an electric car sharing service, Bruglieri et al. (2014a) propose the use of a team of workers who can move easily and in an eco-sustainable way from a delivery point (i.e., a parking station where the car is delivered) to a pickup point by means of a folding bicycle. Thus, the latter can be loaded into the trunk of the electric vehicle (EV) which needs to be moved. Such a new relocation approach generates a challenging pickup and delivery problem with features that have never been considered in the literature: the electric vehicle relocation problem (E-VReP). For it, a mixed integer linear programming (MILP) formulation is provided together with some techniques to speed up its solution.

In Bruglieri et al. (2014b), realistic instances of the E-VReP are created through a simulator applied to some data provided by the Milan transport agency AMAT and by the main energy supplier company in Milan, A2A (www.a2a.eu).

In Bruglieri et al. (2017a), the economic sustainability of the E-VReP is investigated in order to understand the practicability of this relocation approach,

especially from the car sharing managers' point of view. To this purpose, the authors introduce the costs related to the use of the workers and a revenue is associated with each relocation request satisfied. While the original problem aims to handle as many requests as possible (neglecting the worker costs), the purpose of the new problem is to maximize the total profit. Since this new problem revealed to be more challenging than the original E-VReP, two heuristic approaches have been designed. The first heuristic iteratively builds the solution guided by the critical factor, i.e., an indicator of the difficulty to satisfy a request if further delayed. The second solution algorithm consists in a ruin and recreate metaheuristic, and it is applied from a starting solution built through the nearest neighborhood criterion. To test the economic sustainability issue, the authors built a new set of instances (V-AMAT) based on realistic data in Milan. In the V-AMAT set, the revenue associated with each relocation request depends on two components: a variable one, proportional to the rent-time associated with the request and a fixed one (FRC). The FRC represents a "future revenue" since a satisfied customer is likely to require the service again in the future. A sensitivity analysis on the FRC was performed in order to understand its impact on the solutions. A significant contribution of this work, derived from the above sensitivity analysis, consists in the conclusion that the direct revenue associated with the EV rental by some of the users is not sufficient to cover the worker costs and therefore, it is necessary to include an FRC of at least 15 euros to ensure that relocations are carried out (assuming the values of the data used in their case study).

In Bruglieri et al. (2017b) an *adaptive large neighborhood search* (ALNS) metaheuristic is developed introducing several insertions and removal heuristics (necessary to the ALNS) tailored for the E-VReP. The new solution approach is able to solve in few seconds also instances of big size (i.e., order of one hundred relocation requests), outperforming all previous metaheuristics for the E-VReP.

In a similar context, but assuming the service on reservation, Gambella et al. (2017) introduce an exact relocation model for operating hours (*dynamic relocation*) and explicitly consider the consumption and recharge process of electric vehicles batteries. In addition, the model is extended to the relocation operations to be performed at night, namely when the system is not operating. They also introduce two model-based heuristics to solve the relocation problem for operating hours on large-scale systems. The solution approach is tested on realistic data derived from an existing car sharing system. The experiments investigate the scalability of the proposed model and highlight the circumstances under which the relocation operations can improve the service performance.

Concerning the bike sharing relocation, usually a fleet of capacitated trucks is used to redistribute the bicycles throughout the network. To this purpose, Dell'Amico et al. (2014) study the static rebalancing problem for the case where each station has a specific positive or a negative demand. Their objective function consists in minimizing the total routing cost. They represent the problem as a one-commodity pickup-and-delivery capacitated truck routing problem and propose four MILP formulations, which they solve by branch-and-cut. In order to assess the quality of their algorithms, the authors introduce 60 benchmark instances derived

from 22 real bike sharing systems of different sizes (from 13 to 116 stations).They are able to optimally solve all instances involving 50 stations and obtain relatively low optimality gaps in most of the remaining cases.

2.5 Rebalancing Incentives

Incentives can be used to encourage users to pick up vehicles at stations having a large supply and to return them to low-inventory stations. This is the so-called user-based vehicle relocation (Barth et al. 2004).

For instance, the Paris Vélib' system provides financial incentives to users who return their bicycle to given stations. Although in most systems such incentives are constant during the day (*static incentives*), it is more useful to investigate *dynamic incentives* which can vary along the day. Chemla et al. (2013) and Pfrommer et al. (2014) have studied such a dynamic pricing system. They assume that the price paid by users depends on the current state of the system and on the station at which the bicycle is returned, in order to reduce the station saturation. Pfrommer et al. formulate the pricing problem via optimal control theory. Singla et al. (2015) included in this model a learning mechanism in order to represent the user utility function, and extended it also considering a budget constraint for the operator. They tested their approach on historical data.

Di Febbraro et al. (2012) have investigated dynamic relocation problems arising in a one-way car sharing system. They assumed that the users will sometimes be requested to relocate their car at the end of their trip to a nearby station having a shortage of cars. Their objective is to minimize the rejection of car reservations throughout the day. The authors modeled the system as a discrete event system, paired with a relocation process formulated by integer linear program. Testing their approach on data from the city of Turin, they showed that the number of rejected reservations can be reduced significantly if car relocations are performed by users, provided that the latter are offered enough discounts.

3 Carpooling Services Optimization

Increasing vehicle occupancy allows to reduce the traffic congestion, the energy consumption, and the polluting emissions. Increased vehicle occupancy can be achieved through *carpooling* (also called *ridesharing*). Indeed, carpooling is a transport service based on a shared use of private cars, which can be *casual* or *organized*. In *casual carpooling* (e.g., Jungo, www.jungo.it), usually the driver decides to pick up passengers in order to be able to use a high occupancy vehicle (HOV) lane or to share the trip cost, and the crews are formed on the spot (Burris and Winn 2006). Examples of *organized carpooling* are BlaBlaCar (www.blablacar.com) and eRideShare (www.erideshare.com).

More structured services to improve the effectiveness of the service have been designed, such as the system described in Correia and Viegas (2006). The idea is to set up a carpooling service that suggests a possible matching, using an appropriate algorithm. An example is given by car2gether (www.car2gether.com), a pilot project in Germany that builds on a social network of drivers and passengers. The service matches up users according to their destinations and profiles and suggests a possible rate for the cost of fueling.

In the literature, two main ways of operating the car pooling are distinguished: the *daily car pooling problem* (DCPP) and the *long-term car pooling problem* (LCPP). In the DCPP, some users declare their availability to act as drivers for picking up and bringing back colleagues on a given day. The problem is to assign the passengers to the drivers and in defining their routes in order to minimize the total travelled distance and to maximize pool sizes. While in the LCPP, in addition one wants also to guarantee a rotation of the drivers over the days.

For the DCPP, Baldacci et al. (2004) propose both an exact and a heuristic method based on two integer programming formulations of the problem. The exact method is based on a bounding procedure that combines three lower bounds derived from different relaxations of the problem. A valid upper bound is obtained by the heuristic method, which transforms the solution of a Lagrangian lower bound into a feasible solution. The computational results show the effectiveness of the proposed methods.

Wolfler Calvo et al. (2004) describe a complete system for supporting the operation of a DCPP as a prototype for a real-life application. The service is supported by a database of potential users (employees of a company) that daily commute from their house to their workplace. A subset of them offers seats in their cars. Moreover, they specify the departure time (when they leave their house) and the mandatory arrival time at the office. The employees that offer seats in their cars are named servers. The employees asking for a lift are named clients. The set of servers and the set of clients need to be redefined once a day. Instead of an exact approach like Baldacci et al. (2004), Wolfler Calvo et al. (2004) propose a constructive heuristic based on the computation of a regret for each client i. This regret is given by the difference of the length paths between the two servers which have the least and the second least extra mile when pick up client i. The construction algorithm tries to assign each client to its closest server, considering clients in order of decreasing regrets and the solution found is improved by way of a local search algorithm.

Finally, Teodorovic and Dell'Orco (2008) propose a bee colony optimization metaheuristic and test it in a real case with 97 travelers in Trani, a small attractive city in the southeast of Italy, near Bari, the regional county seat of Puglia.

Concerning the LCPP, Maniezzo et al. (2004) solve the problem with the ant colony optimization paradigm. In particular, they present two ANTS heuristics for the LCPP, one where ants (that act as autonomous agents) construct complete problem solutions and the second where ants construct solution components, to be later combined by an integer programming solver. Computational results are

presented both on datasets derived from the literature about problems similar to carpooling and on real-world carpooling instances.

A different classification of carpooling services has been made in the recent survey of Furuhata et al. (2013). On the basis of the analysis of 39 carpooling services, they classify them in:

1. *Carpooling for workers*: servicing for commuters that share transportation to work in a private vehicle with another worker. Typically, matched participants have a similar OD pairs and prefer ongoing and regular carpooling. For the commuters, it is important to their work locations as well as the start and end times of their work.
2. *Long-distance ride-match*: servicing for travelers taking long-distance trips (e.g., intercity and inter-country). Typical long-distance travelers have more flexible travel schedules than on-demand travelers and commuters. Some carpooling services of this kind provide an alternative search choice consisting in a list-based search. At the beginning, users specify the departure region, and then they search for the candidates in the list. This allows users to select their departure time based on ride availability instead of specifying their favorite departure time. A service of this kind is BlaBlaCar.
3. *Dynamic real-time ridesharing*: providing an automated process of ride-matching (i.e., routing, scheduling, and pricing) between drivers and passengers on very short notice or even en route. This is the most recent class of carpooling services. Among them we can mention: Lyft (www.lyft.com), Flinc (www.flinc.org) and Tripda (www.tripda.com).

Since the matching time window can be very short, the system makes an automated rideshare match including a routing specifying pickup and drop-off locations and times based on the simple input of participants' itineraries and schedules. We observe that the passenger's pickup and drop-off locations may be different from the OD-pair of the driver as long as they are on the route of the driver's original trip. Usually, services of this kind also propose a suggested cost for each participant based on their pricing rules. Further details on the optimization algorithms for the dynamic ridesharing can be found in the survey of Agatz et al. (2012).

In Italy, carpooling was promoted in the national legislation in 1998 with a law on sustainable mobility (Ministero dell'ambiente 1998), which instituted the figure of the mobility manager. The objective of such figure is to rationalize the commuting trips, promote the use of collective public transport, and endorse the introduction of innovative transport systems, such as demand responsive services. Moreover, the mobility manager, whose institution is compulsory for companies with more than 300 employees, designs the company transport plan for the home-to-work trips.

In this context, Bruglieri et al. (2011) developed a decision support system (DSS) for a carpooling service dedicated to the students and employees of the Politecnico di Milano and Università Statale universities (PoliUniPool project).

The fact that the system is restricted only to people belonging to these universities allows to create a sort of club of users. Indeed, the primary goal is to provide a common minimum level of trust among its members and improve the psychological acceptance of the service (Correia and Viegas 2010). Besides suggesting a matching between the users, the DSS provides the expected schedule for their trips. In addition, the users may indicate other users they would prefer to carpool with (friends) or they do not want to, and the drivers can also set partial pre-arranged crews.

Moreover, the system estimates the costs for each user, in order to let the users know how to share them. Indeed, carpooling consents a saving in the travel costs and in the total kilometers travelled by the carpoolers. On the other hand, the carpool driver takes a little more time. Such account of the trade-off between the monetary saving and the increasing in travel time helps the users to decide whether to carpool or not.

4 Collaborative Logistics Optimization

In the last years, the number and the volume of urban freight delivery have hugely increased mainly due to the growth of e-commerce (+17% in Italy in 2017 compared to 2016, according to the e-Commerce B2C Business Report of Politecnico di Milano). However, last-mile deliveries generate several negative effects on the city, such as high traffic, increasing of the parking lots occupied, polluting emissions. Collaboration among carriers who have to serve common customers within the same time period may result in significant savings in such a scenario. Carriers could serve part of the demand for other carriers without too much lengthening their routes and better exploiting the vehicles capacity, thus obtaining savings both in terms of number of vehicles used and distance travelled.

The benefits of collaboration in the freight transportation field have received attention, especially in the last decade, due to the availability of communication technologies that enable collaboration. Collaboration among companies at the same level of the supply chain is known as horizontal cooperation.

According to Verdonck et al. (2013), when dealing with road transportation, horizontal cooperation among carriers can be further classified in two operational collaboration modes: *order sharing* and *capacity sharing*. *Order sharing* encompasses all situations where collaborating carriers share or exchange customers' orders or requests. In this case, the fleet of each collaborating carrier and the starting depot of each vehicle remain unchanged. Vice versa, in the *capacity sharing* mode, carriers may obtain additional capacity from collaborative partners to satisfy their customer demand. In this case, collaborating carriers do not share customer requests and every carrier delivers its own orders.

In the context of order sharing last-mile logistics, Fernandez et al. (2018) introduce the shared customer collaboration vehicle routing problem (SCC-VRP), a new collaboration model that optimizes the potential benefits derived from alliances

among carriers. In the SCC-VRP, multiple carriers jointly operate in the same area, each of them, serving its own customers, from its own depot with its own fleet of vehicles. While some customers require service exclusively from only one carrier, others have service demand for multiple carriers (shared customers). The objective of the SCC-VRP is to exploit the benefits derived from allowing carriers to deliver products to the shared customers on behalf of other carriers. One peculiarity of the SCC-VRP is that different carriers operate from different depots. Another characteristic is that not all customers can be shared. Moreover, the subset of carriers that can serve a given shared customer is not fixed, since it depends on the customer. For this problem, Fernandez et al. propose two alternative MILP formulations for the SCC-VRP. The first formulation is a vehicle-based model inspired to classical formulations for the multiple depot vehicle routing problem with decision variables modeling both the arcs that are traversed and the customers that are visited. Even if reinforced with several families of valid inequalities the vehicle-based formulation is computationally heavy. Therefore, a load-based formulation is also proposed. The main advantage of this formulation is that the number of binary decision variables reduces considerably, since they are only associated with depots, but no longer with vehicles. However, this is only possible adding a set of continuous load variables to guarantee that the balance constraints redistribute correctly the loads of the different routes. For each formulation, they discuss several families of valid inequalities as well as the solution to the separation problems for the families of constraints of exponential sizes. An exact branch-and-cut algorithm is proposed for the solution of each formulation. Computational experiments on different sets of benchmark instances compare the performance of the two proposed formulations and find the maximum size of instances that can be solved to optimality with the best formulation.

Although the literature on carriers collaboration is very large (see Verdonck et al. 2013, for a survey), few works address quantitative models for decision support to carriers in a collaborative framework. Most of them model the interactions among partners through auction systems (Dai and Chen 2011; Figliozzi 2006; Kuyzu et al. 2015).

An important issue in order sharing collaboration is how to partition the savings among all the collaborating carriers. To this purpose, in Krajewska and Kopfer (2006), Krajewska et al. (2008), and Lozano et al. (2013), the behavior of collaborating partners was modeled with a game theoretic approach.

5 Conclusion and Perspectives

We showed different contributions of OR both in shared mobility services, such as car/bike sharing, carpooling, and in collaborative logistics. Although the OR with its methodological tools allows to improve the performances of such services,

solving a wide range of decision problems, there are several aspects not yet addressed that deserve to be studied.

For instance, according to Laporte et al. (2015), in shared mobility services there are some interesting and challenging combinatorial problems that remain to be investigated, e.g., determining the optimal inventory level at the stations. On the methodological side, the design of exact algorithms for the multi-truck rebalancing problem has not yet been investigated and seems rather difficult for instances of reasonable sizes. Its stochastic version is also significant. Finally, another important challenge is the study of several rebalancing problems in an on-line environment.

Concerning collaborative logistics, as stated by Speranza (2018), collaboration initiatives may fail for several reasons and the lack of exploitation of the potential benefits is one of these reasons. Here is where OR can contribute. Partners of a collaboration initiative decide to work together because they expect to improve the performance of their own business through collaboration. Since each partner is more interested on its own business than on the global performance, integration must be mediated with individual interests to make the collaboration initiative successful. This essential concept in collaboration may make models for decision support in collaboration initiatives different from models for global optimization. For instance, in the SCC-VRP described in Sect. 4, the profit coming from a shared customer will be in part collected by the carrier "owning" the customer and in part by the carrier actually serving the customer. Thus, in the solution where the sum of the costs of all carriers is minimized, each carrier will serve its customers, some of the customers shared by other carriers, and possibly some of its own shared customers that may become convenient when combined with customers shared by others. This solution will generate savings with respect to the total cost of the solution where carriers do not collaborate. However, such solution may be such that the profit of a carrier is lower than its profit without collaboration. Such a situation may become unacceptable to a carrier, especially if it does not happen only occasionally, and may cause the collaboration failure. For this reason, in Fernández et al. (2016), a model is proposed where the profit of each carrier is constrained to be not lower than the profit that would be gained without collaboration. Thus, the collaborative solution will be advantageous to each individual carrier and the collaboration failure is prevented.

Another significant challenge in shared transport services is the stakeholders' actual participation in decision processes. Indeed, any shared transport service involves different stakeholders with different interests. For instance, in a carpooling service the main stakeholders involved are the *area mobility manager* that is interested to reduce the total amount of circulating cars (environmental aspect), the firm mobility manager that aims to minimize the cost associated with the economic incentives to provide and the *users* which are interested to the service quality (the so-called level of service) including in it both the generalized transport cost (i.e., travel time and monetary cost) and the matching preferences satisfied in the car pools formed (Bruglieri et al. 2008). The problem is that the existing decision-aiding models are not able to adequately support the stakeholder participation. In fact, according to Mazri et al. (2014), on the basis of an exploration of

both the decision-aiding and participatory process literature, there is a methodological gap making analyst's interventions extremely limited in their ability to respond to participatory challenges. Their hypothesis is that these limits derive from the focus in decision aiding on the analyst–client interactions leaving the other stakeholders with little explicit space to shape decision process evolution.

Therefore, they suggest including in the decision-aiding process an explicit reflection on the way stakeholders should participate in all steps of the decision process. Through the concept of *participation structure*, they propose to explicitly consider, in the first steps of a decision-aiding process, the organizational arrangements through which different stakeholders may interact with the analyst and the client. Finally, they suggest an enhanced model of decision aiding to better characterize the way an analyst should organize interventions in participative contexts.

While traditional problem formulations in OR are established a priori and often they focus on a precise method to be used, the problem formulation becomes a more complex issue when stakeholder participation needs to be considered. "Indeed, decision makers in organizations are usually faced with a stream of intricate and dynamic issues instead of clear and formulated processes. This situation is amplified in public contexts where several legitimate problem formulations may coexist. Therefore, the definition of the problem to be resolved needs to rely on an explicit and organized approach that addresses this social complexity of decision issues." (Mazri et al. 2014).

In this context, problem statements and consequently formulations can be very different, as shown in Colorni and Tsoukiàs (2013). To deal with these limits, a constructivist vision of decision aiding is necessary. As directly stated by Mazri et al.: "Constructivism in decision aiding relates to the co-construction by the analyst and the client of the rationality on which decision will be based. This construction aims at guiding the client through the inherent complexity of decision making in order to satisfy both his preferences and scientific validity criteria. By doing so, the analyst is not anymore an expert implementing and interpreting optimization models, and he becomes a stakeholder influencing the decision process through a set of procedures, models, and methods he injects in the decision process."

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Regulating (and Self-regulating) the Sharing Economy in Europe: An Overview

Guido Smorto

Abstract The article describes the main legal challenges for regulating the sharing (or collaborative) economy in Europe and explains how the existing body of EU law applies to these new business models. In the last part, it makes a few brief comments on the need for future regulation.

1 Defining the Sharing Economy

In recent years, the progression of the sharing economy has been so rapid that it has prevented not only the development of clear rules but even the emergence of a shared terminology. In 2015, the Oxford Dictionary defined it as "an economic system in which goods or services are shared between private individuals, either for free or for a fee, typically by means of the Internet".[1] The European Commission decided to adopt the expression "collaborative economy" to designate those "business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals".[2] In addition, a plethora of other expressions is used in the current discourse as synonyms or with slight changes in meaning: not only sharing or collaborative, but also peer-to-peer (p2p), platform, on-demand or gig economy, and the list could continue.

[1] https://en.oxforddictionaries.com/definition/sharing_economy.

[2] "The term collaborative economy is often used interchangeably with the term 'sharing economy'. Collaborative economy is a rapid evolving phenomenon, and its definition may evolve accordingly". See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "A European agenda for the collaborative economy" {SWD(2016) 184 final}, p. 3, ft. 7 (hereinafter referred to as "Communication").

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Beyond such discrepancies, these expressions refer to business models that provide services via online platforms enabling transactions between decentralised economic agents, and the related possibility for non-professionals to offer goods and services which, up to a few years ago, used to be delivered entirely by professionals. This new economic environment is leading to a new "crowd-based" mode of production and exchange, in accordance with two key directives—decentralization and de-professionalization.

This paper provides an introductory 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.

2 The Need to Regulate the Sharing Economy in Europe

In October 2015, the Single Market Strategy was adopted, through which the EU Commission announced the development of "a European agenda for the sharing economy, including guidance on how existing EU law applies to collaborative economy business models", as part of the Commission's Digital Single Market Strategy.[3] From September 2015 to January 2016, a public consultation was carried out within the Internal Market Strategy for goods and services, with the aim to gather the views of public authorities, entrepreneurs and individuals.[4] In March 2016, a Eurobarometer survey on collaborative platforms was also published.[5] In June 2016, the European Commission published its communication on "A European agenda for the collaborative economy". Finally, in June 2017, the European Parliament adopted a Resolution on the collaborative economy.[6]

What clearly emerges from all these documents is a noteworthy economic potential for the sharing economy. New services are growing rapidly, gaining significant market shares in relevant economic sectors. However, a number of unsolved questions are still on the table. Compared to platforms operating in the USA, European platforms are facing several hindrances to their development. These difficulties can partly be justified by cultural and linguistic differences and unequal

[3]Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "A Digital Single Market Strategy for Europe" {SWD(2015) 100 final}. Brussels, 6.5.2015. COM(2015) 192 final.

[4]Public consultation on the regulatory environment for platforms, online intermediaries, data and cloud computing and the collaborative economy, 24/09/2015.

[5]Flash Eurobarometer 438—March 2016. "The use of collaborative platforms".

[6]European Parliament resolution of 15 June 2017 on an European Agenda for the collaborative economy (2017/2003(INI)).

development in different countries.[7] They are also exacerbated, though, by a fragmented regulatory environment and divergent regulatory approaches, both at national and local level. This causes a consequent degree of confusion still surrounding rights and obligations, which deters people from participating in the sharing economy and discourages investments due to the dangers of future legal challenges. Hence—as the Commission concludes—it is crucial to offer legal guidance and policy orientation to public authorities, market operators and interested citizens on how the existing EU law should be applied to the sharing economy.

3 Regulating Peers. The Service Directive

The main challenges for regulating the sharing economy are linked to the wide range of very diverse individuals proposing via online platforms goods and services traditionally offered by professionals. These new opportunities for non-professionals cause the blurring of established lines between consumers and providers, employees and self-employed, the professional and non-professional provision of services (Sundararajan 2016). Therefore, the legislator's ability to lay down distinctive rules for professionals and non-professionals results undermined. Since peers are no longer full-time large-scale professionals, they are unable to support the costs associated with full regulatory compliance, and the rules designed to regulate professionals' sale of goods and provisions of services are inadequate to regulate p2p activities in many highly regulated economic sectors (e.g. hotel regulations for who occasionally rents out a spare guest room).

As always when a massive technological transformation takes place, the bipartisan appeal is to establish fair rules that "level the playing field" and leave the market ruling on winners and losers, in application of the well-known adagio "the State should not be picking winners". But the problematic aspect concerns the actual identification of such rules: the debate revolves around "regulating up versus down deregulating", a drastic revision of the existing rules through a massive deregulation or the application of professional standards to peers (Koopman et al. 2015).

[7]See the European agenda for the collaborative econom—Supporting analysis {COM(2016) 356 final}, Brussels, 2.6.2016 SWD(2016) 184 final: While societal drivers play an important role in the development of the collaborative economy (e.g. population density), Internet technology is the most essential driver of the new economy. Thus, the collaborative economy appears to be developing more quickly in EU Member States with high levels of Internet access and usage, but less in others.

Under European Union law, such debate should be viewed in the context of the Treaty on the Functioning of European Union and the Service Directive.[8] The Service Directive establishes that any national measure on market access requirements which prohibits, impedes or renders less attractive EU nationals' exercise of freedom of establishment—guaranteed by the Treaty—must be regarded as a "restriction" within the meaning of Article 49 TFEU.[9] Such restriction is permitted only if it is equally applicable to nationals and non-nationals and justified by a legitimate public interest objective.[10] Furthermore, it must be proportionate to that objective,[11] meaning that any restriction appropriate for ensuring the attainment of

[8]Consolidated version of the Treaty on the Functioning of the European Union (2012) C-326/49, Art. 56 (ex Article 49 TEC) and Art. 49 TFEU (ex Article 43 TEC); Directive 2006/123/EC on services in the internal market ("Services Directive").

[9]Equality of treatment not only forbids overt discrimination by reason of nationality or, in the case of a company, its seat, but also all covert forms of discrimination which, by the application of other criteria of differentiation, lead to the same result. See Case C-330/91 *The Queen v Inland Revenue Commissioners, ex parte Commerzbank* [1993] ECR I-04017. According to the Court's case-law, Art. 56 of TFEU requires not only the elimination of all discrimination on grounds of nationality, against providers of services established in another Member State, but also the abolition of any restriction. This even if it applies without distinction to national providers of services and to those of other Member States, which is liable to prohibit or further impede the activities of a provider of services established in another Member State lawfully supplying similar services". See Case C-544/03 Mobistar v Commune de Fléron [2005] I-07723; Joined Cases C-369/96 and C-376/96 Arblade [1999] I-08453; Case C-165/98 Mazzoleni and ISA [2001] I-02189; Case C-49/98 Finalarte [2001] I-00787; Case C-350/07 Kattner Stahlbau [2009] I-01513.

[10]In order to define the legitimate criteria that can be adopted for regulating the provision of p2p services under EU law, it is essential to focus on what amounts to a "justified restriction" of services. As mentioned, such restriction is permitted if it is equally applicable to the national and the non-national, justified by a legitimate public interest objective and proportionate to that objective. Restrictions that are not equally applicable may be saved only by reliance on Treaty exceptions, viz public policy, public security or public health, and only when a genuine and sufficiently serious threat occurs, affecting one of the fundamental interests of society. As regards equally applicable measures, various justifications may be put forward, and the list is not closed. According to Art. 4, par. 8, Services Directive: "'Overriding reasons relating to the public interest means reasons recognised as such in the case law of the Court of Justice, including the following grounds: public policy; public security; public safety; public health; preserving the financial equilibrium of the social security system; the protection of consumers, recipients of services and workers; fairness of trade transactions; combating fraud; the protection of the environment and the urban environment; intellectual property; the conservation of the national historic and artistic heritage; social policy objectives and cultural policy objectives".

[11]"National measures liable to hinder or make less attractive the exercise of fundamental freedoms guaranteed by the Treaty must fulfil four conditions: they must be applied in a non-discriminatory manner; they must be justified by imperative requirements in the general interest; they must be suitable for securing the attainment of the objective which they pursue; and they must not go beyond what is necessary in order to attain it": Case C-55/94 *Gebhard v Consiglio dell'ordine degli avvocati e procuratori di Milano* [1995] I-04165. See also Case C-79/01 *Payroll and Others* [2002] I-08923; Case C-442/02 *Caixa Bank France* [2004] I-08961; Case C-157/07 *Krankenheim Ruhesitz am Wannsee-Seniorenheimstatt* [2008] I-08061.

the objective pursued, should not go beyond what is necessary for that purpose.[12] This call for proportionality of restrictions is of great significance in regulating private individuals that provide services on occasional basis, as it clearly points to distinctive rules for peers and professionals and less restrictive requirements for the latter. As stressed by the Commission, private individuals offering services via sharing platforms on a p2p and occasional basis should not be automatically treated as professionals, since such an extension would produce a disparate impact on the latter. At the same time, while there is a strong need for different rules and lower standards for peers, the Service Directive also urges national authorities to review existing national legislation for professionals, in order to avoid the risk of unfair competition among comparable categories of economic agents.

4 Regulating Platforms. The E-Commerce Directive

A second critical aspect concerns the nature of online platforms that connect peers. The EU Commission affirms that these platforms create an "open marketplace" for the temporary usage of goods or services, and most sharing platforms depict themselves as networks or marketplaces. Defining platforms as marketplaces bears important legal consequences: rules for service providers are dismissed as immaterial, and public authorities are called to enforce regulation only against individual providers. Therefore, only peers are responsible for ensuring safe and reliable services, since platforms are neither part of p2p transactions nor responsible for breach of contract or illegal conducts by the parties.

While at times accurate, describing the sharing platforms as "marketplaces" not always reflects their genuine role, and a closer observation may result in a more changeable scenario. In some cases, platforms offer a truly open infrastructure that facilitates the matching of supply and demand among its users providing ancillary services for the smooth functioning of the market. In others, they maintain a tight control on the transaction, lay down the rules for the exchange, manage and organise the selection of peers and the quality of services, exercise a strict supervision on information and communication flows, and influence or even fix prices. In sum, online platforms differ from each other for the level of control or influence that they exert over peers, and their business models cover a wide spectrum, ranging from marketplaces to hierarchies. Some of them may be regarded as service providers with new employment models (Cherry and Aloisi 2017; De Stefano 2016), others as "digital marketplaces" connecting peers or firm-market hybrids (Sundararajan 2016; Sénéchal 2016). Given the variable features of online sharing platforms, it is essential to develop well-defined principles for a case-by-case

[12]Case C-140/03 Commission v Greece [2005] ECR I-04505. Indeed, the Member States must prove the existence of a link between the national measure and the invoked justification. See Case C-243/01 Gambelli [2003] ECR I-13031.

appraisal on their nature. As a first rule of thumb, when sharing platforms exert a high level of control and influence over peers, they should be regarded as service providers; conversely, when platforms limit their activity to the matching of demand and supply, enabling peers to deliver the underlying services, they should be deemed as intermediaries.[13]

Under European Union law, this dispute should be viewed against the background of the E-Commerce Directive. Platforms may be defined as "marketplaces" when platforms' activity is limited to delivering an "information society service" for remuneration, at a distance, by electronic means and at the individual request of a recipient.[14] In this case, they cannot be subject to prior authorisations or any equivalent requirements for the underlying services, and they benefit from a limited liability regime.[15] On the contrary, when considered as providers, sharing platforms are subject to market access requirements applicable to a relevant sector-specific regulation, including business authorisation and licensing requirements.[16]

Along these lines, the Commission has laid down several factual and legal criteria that can play a role in this ad hoc assessment, based on whether the sharing platforms: (a) set or recommend the final price to be paid; (b) set key contractual terms, other than price; (c) own the key assets used to provide the underlying service.[17] While for the most part, these criteria are effective proxies for the degree of control exerted by the platform on online p2p transactions, in some cases they

[13]See Communication, p. 8: "Whether or not collaborative platforms can benefit from such liability exemption will need to be established on a case-by-case basis, depending on the level of knowledge and control of the online platform in respect of the information it hosts".

[14]See Article 2(a) of Directive 2000/31/EC (E-Commerce Directive) and Article 1(1)(b) of Directive 2015/1535. Cf. Communication, p. 5.

[15]See Art. 4(1) of the E-Commerce Directive. Internet intermediary service providers should not be held liable for the content that they transmit, store or host, as long as they act in a strictly passive manner. The Directive distinguishes between: "Mere conduit" service providers (Art. 12), "Caching" providers (Art. 13) and "Hosting providers" (Art. 14).

[16]According to C-324/09 *L'Oréal/eBay* [2011] I-06011, the service provider plays an active role if "it provides assistance which entails, in particular, optimising the presentation of the offers for sale in question or promoting them".

[17]In addition, other relevant factors are also mentioned by the Communication, based on whether: the collaborative platform bears the costs and assumes all the risks related to the provision of the underlying service; there is an employment relationship between the collaborative platform and the person providing the underlying service. When most criteria are met, there are strong indications that the collaborative platform exercises a significant influence or control over the provider of the underlying service, thus acting as a service provider employing peers to perform the offered services, whereas the contrary is true when a small degree of influence and control are exerted. C-434/15 Press and Information Asociación Profesional Elite Taxi v Uber Systems Spain SL. The European Court of Justice the Court declared that the intermediation service provided by Uber, the purpose of which is to connect, by means of a smartphone application and for remuneration, non-professional drivers using their own vehicle with persons who wish to make urban journeys, must be regarded as being inherently linked to a transport service and, accordingly, must be classified as "a service in the field of transport" within the meaning of EU law. Consequently, such a service must be excluded from the scope of the freedom to provide services in general as well as the directive on services in the internal market and the directive on electronic commerce.

may bring about contentious outcomes. A more general question regards the potential tension between liability exemption for a platform's technical, automatic, passive conduct and the goal of encouraging a responsible behaviour aimed at communication.[18] Finally, doubts persist on whether the E-Commerce Directive is the most suitable instrument to assess the nature of the platform and its legal regime, as its application has proved to leave many questions unsolved at national level, providing widely diverging interpretations in different cases and countries. The risk of contradictory interpretations is especially acute for p2p markets, which are not the original target of the Directive, and further considerations are necessary on the opportunity to review this piece of legislation with regard to the new online p2p marketplaces.

5 Protecting Customers. Consumer and Marketing Law

EU consumer and marketing legislation is based on the distinction between "trader" and "consumer", as EU consumer law applies only to those who qualify as "traders" and engage consumers in vis-à-vis "commercial practices."[19] The EU consumer and marketing legislation clearly applies to traditional business-to-consumer transactions, in addition to sector-specific legislation, but its relevance is questionable in the sharing economy. If peers are not professionals and platforms limit their activity to transactional services, thus acting as "information society services", consumer law does not apply to the provision of the underlying service. Hence, a legislation developed in an era of full-time professional service providers in order to keep customers safe is not suited to face the many challenges of the sharing economy. The emergence of a p2p economy may lead to both old and new safety and health concerns, and since these market failures are only partially addressed by private ordering (see *infra*), the need to protect customers in p2p transactions is no less compelling than in b2c ones.

In short, while a lighter regulation may be recommendable for peers and platforms, if neither the platform nor the peer qualifies as "trader" p2p transactions fall outside the scope of consumer legislation, leaving consumers without adequate legal protection. Weighting the two conflicting aspects—having distinctive rules for peers and for marketplaces while at the same time protecting consumers—is one of

[18]Communication, p. 8: "The Commission, at the same time, encourages responsible behaviour by all types of online platforms in the form of voluntary action, for example to help tackle the important issue of fake or misleading reviews. Such voluntary action aimed at increasing trust and offering a more competitive service should not automatically mean that the conduct of the collaborative platform is no longer merely technical, automatic and passive".

[19]A trader is a person "acting for purposes relating to his trade, business, craft or profession"; a "consumer" is a person acting "outside his trade, business, craft or profession". See Article 2 Directive 2005/29/EC ("Unfair Commercial Practices Directive").

the most crucial challenges posed by the rise of the sharing economy (Busch et al. 2016; Možina 2016).

6 Fostering Competition. EU Antitrust Policies

At this early stage, the competitive dynamics of the sharing economy are arduous to assess, due to the difficulty to identify stable indicators for market power in fast-growing sectors characterised by frequent market entry and short innovation cycles.[20] Notwithstanding, it may be useful to briefly mention how the sharing economy may impact the structure of the market (Podszun and Kreifels 2016; Lougher and Kalmanowicz 2015).[21]

According to many observers, most online p2p markets bear an ingrained tendency towards monopolies and display an anti-competitive structure, often reduced to a single operator (*winners take all*). The main reason that leads to identify the risk of dominant positions is the occurrence of (indirect) network externalities, so that the increase of participants of a given group rises the value of their participation for the other group of users. This potentially leads to overwhelming difficulties for potential entrants to collect a sufficient amount of initial customers in order to be competitive (Rochet and Tirole 2003; Caillaud and Jullien 2003; Evans 2003). In addition to network effects, the huge amount of data held by platforms can give a very significant competitive advantage to a single operator. Indeed, the higher the number of interactions occurring via the platform, the better the algorithm governing transactions and the mentioned service.[22] In conclusion, the combination of network effects and data gathering may generate significant competitive advantages and lead to the dominant position of a single platform.

[20]On the difficulty to identify stable indicators for market power in these sectors see Commission, 3.10.2014, COMP/M.7217—*Facebook/WhatsApp*, para 99.

[21]See also Autoritat Catalan de la Competència, "P2P Transactions and Competition" [2014]; Federal Trade Commission, "An FTC Staff Report. The Sharing Economy. Issues Facing Platforms, Participants and Regulators" [2016] https://www.ftc.gov/reports/sharing-economy-issues-facing-platforms-participants-regulators-federal-trade-commission.

[22]On the effect of data on competition under EU law, see Google case, http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_39740. See also Monopolies Commission, "Competition policy: The challenge of digital markets" (2015), Special Report by the Monopolies Commission pursuant to Sect. 44(1)(4) ARC; Autoritat Catalan de la Competència, "The Data-Driven Economy. Challenges for Competition" [2016]; Autorité de la concurrence—Bundeskartellamt, Competition Law and Data (2016). See also Federal Trade Commission, "Big Data: A Tool for Inclusion or Exclusion? Understanding the Issues" [2016].

7 Ex Ante Monitoring Versus Ex Post Enforcement

Online transactions entail a high risk of opportunistic behaviours, since geographical distance, little chance of repeated interactions and trivial exit costs, together with the absence of a framework of agreed rules, potentially amplify information asymmetries, especially for low-value economic transactions. These concerns are further amplified in p2p transactions, where parties do not possess a business reputation.

In the absence of ex post tools to enforce individual rights, ex ante monitoring mechanisms have been created in order to alleviate the lack of trust, to establish credibility and to limit non-performance risks. While not so long ago these systems were extremely expensive—this being so far the limit of these systems especially for low-value transactions (Bernstein 2001; North and Weingast 1990; Kornhauser 1983; Macaulay 1963)—the recent, drastic reduction of transaction costs is spurring an unprecedented diffusion of ex ante control systems (Gillette 2001). Owing to the enormous mass of data available and the reduction of communication costs, we are witnessing the widespread adoption of crowd-based "reputational systems", technologies that enable information about individuals' actions and reputations to circulate efficiently among members of society" for determining individual trustworthiness, facilitating transactions and disseminating relevant information (Rosenberg 2011; Farmer and Glass 2010; Strahilevitz 2008; Moorhouse 2003).

Since a good or bad reputation may result in substantial economic advantages or disadvantages, in some cases a reputational system creates an especially efficient structure of incentives which may play as a central self-regulation tool for markets and social systems, favouring consumers' learned choices (Strahilevitz 2008; Resnick et al. 2002). Moreover, these systems give incentives also for providers to improve the quality and range of services offered and to foster the lowering of prices (Thierer 2014). The threat of "reputational penalties" alters individual behaviours with no need of legal sanctions, without waiting for complex and costly legal systems to intervene. In a word, reputational systems are believed to create what has been defined the "second invisible hand" (Goldman 2011) helping the invisible hand of the market reduce market failures, which traditionally justify external regulation (Thierer et al. 2015a, b; Tabarrok and Cowen 2015; Steckbeck and Boettke 2003).

While it is crucial to recognise the importance of reputational systems in p2p transactions, it is also essential to understand their many limitations. A first constraint of these systems concerns the manipulation of results ("gaming"). The growth of the economic value of reputation also increases incentives to game the systems, thus leading to an overinvestment in reputation with a twofold negative effect: a waste of resources and a decreased informative value of reputation systems. Besides intentional alterations, other potential modifications of the information framework may derive from the diffuse tendency to express an opinion only under given circumstances. Several empirical studies have shown that people are more inclined to give their feedback if they want to report very positive or very negative

facts; contrariwise, they are less motivated to do so when their evaluation falls within the average. This bias may explain the anomalous percentage of high evaluations occurring in many platforms (Dellarocas and Wood 2006). The reliability of information may also be tainted by (explicit or tacit) collusion, by the fear of a negative judgment or by social norms that regulate interpersonal relations, which makes it harder to express negative judgments when a direct contact between the parties occurs, regardless of the actual level of satisfaction (Dellarocas and Wood 2008). In addition, other issues still to be solved range from "reputation milking" for established sellers and "cold start" for new entrants[23] to the disproportionate weight given by users to the most dated opinions compared to the most recent ones (Salganick et al. 2006). And despite many solutions have been suggested and implemented to correct these alterations,[24] there are still many failures of reputational systems to be solved (Slee 2015; Bolton et al. 2013; Farmer 2011; Pasquale 2007, 2008).

8 Self-regulating the Sharing Economy?

The current debate on regulating the sharing economy is deeply intertwined with a growing reflection on the marginalization of public regulators, and the emergence of new sophisticated forms of self-regulation by private entities.[25] Legal rules and centralised instruments of control are being gradually replaced by a diffused monitoring, which is becoming a substitute for the implementation of rights before courts. Accordingly, it is often being argued that the State should foster the spreading of reputational systems and remove the regulatory barriers in order to create an optimal information flow.

The pervasive depiction of platforms as a self-sufficient economic system, with little need for external rules, is usually built on some basic assumptions. The unprecedented amount of data and ratings now available on the Internet provides a complex information framework for ruling the market. Further, platforms not only possess information through which they can regulate the marketplace but they also

[23]See Federal Trade Commission, "An FTC Staff Report. The Sharing Economy. Issues Facing Platforms, Participants and Regulators" [2016] https://www.ftc.gov/system/files/documents/reports/sharing-economy-issues-facing-platforms-participants-regulators-federal-trade-commission-staff/p151200_ftc_staff_report_on_the_sharing_economy.pdf.

[24]Among them, allowing users to express judgements invisible to the other party (the so-called double blind system), giving a different timing to each party or eliminating this possibility for one of the parties (the choice of who is allowed to express an opinion depending on many factors, i.e. if the risk of moral hazard is greater for one of the two categories). In order to curb the risks of gaming, many tools can be employed, such as verification of the personal identity of the "rater" or giving the right to reply. In addition, meta-moderation mechanisms have been developed to verify the reliability of users' ratings and feedbacks and to avoid distortions.

[25]See Federal Trade Commission, "An FTC Staff Report. The Sharing Economy. Issues Facing Platforms, Participants & Regulators".

have a compelling interest to do so. In fact, the quality and the economic success of an online platform deeply intertwined with economic transactions take place through the platform. Since facilitating safe transactions among peers is the aim of p2p platforms, their interest is typically aligned with the societal one.

In sum, platforms have an interest in regulating p2p transactions and they have all the instruments to do so. This produces a strong argument for reconsidering the scope of regulation, making the role of public intervention more and more marginal. In addition, other familiar justifications in favour of self-regulation are usually raised. Legislators—it is often observed—cannot follow the pace of technology, running the risk to provide solutions fatally doomed to a rapid obsolescence (Bennett Moses 2013; Brownsword and Somsen 2009; Hadfield 2008). Moreover, legislators are exposed to the risk of being "captured" by the very same targets of their regulations, established interest groups whose aim is to obtain more favourable rules for themselves, such as barriers to entry and other protectionist measures (Botsman 2014; Peltzman 1976; Krueger 1974; Stigler 1971; Olson 1965). Following this line of reasoning, the widespread conclusion is that these marketplaces may be self-regulated, leaving to platforms the task to make the market safe or delegating regulation to self-regulatory organizations (Cohen and Sundararajan 2015).

However, there is still much information that users are not able to verify and that reputation systems are not able to convey. Neither individual consumers nor crowd-based reputational systems may be able to check compliance with certain standards, especially for qualities that are difficult for users to detect. Besides, the quality of reputational systems is not only a matter of conveying accurate information: in some cases, platforms may have no interest to disclose specific information, for instance because potentially harmful to their own reputation. Further, they may have no reason to correct externalities and to take into full account the negative effects of the transactions with respect to parties not involved in the platform, leading to an oversupply. In many cases platforms make frequent use of boilerplate, architecture and algorithms to leverage their power over users—whether customers or providers—and it is still not clear to what extent effective market-based solutions are emerging to tackle these issues (Smorto 2018). For these reasons, a well-functioning reputation system can surely complement more traditional forms of regulation, but it is also important to identify which issues platforms are unable or have no interest to address and when external rules are still necessary.

The need of regulation is further reinforced when taking into account other goals, in addition to the correction of market failures and efficiency concerns. So far, the economic and social impact of the sharing economy has not been explored enough and evidence is mixed. Some studies conclude that p2p activities potentially benefit the below-median-income part of the population, more than the above-median-income one, and that sharing firms can be used as means to redistribute income. The explanation for such conclusion lies in the fact that these firms offer non-owners the opportunity to affordably access goods and services, thus avoiding the need to buy capital goods and making the ownership of these goods less compelling. Further, they provide the opportunity for economically distressed

owners to offset purchase costs by allowing goods to be shared and borrowed in new ways (Fraiberger and Sundararajan 2015; Dillahunt and Malone 2015). Other analyses point to the opposite direction, as they emphasise that the sharing economy has a disparate impact on race and gender and leads to the risk of a potential technological hurdle that may impede or deter access to a significant part of the population. Said analyses highlight that many sharing services are often unavailable to poor areas, people with disabilities and underserved communities (Schor 2017; Schoenbaum 2016; Smorto, 2016; Reich 2015; Edelman and Luca 2014).

Other-related matters potentially relevant for legislators concern "commodification" and "surge pricing" mechanisms. Thanks to lower transaction costs and the possibility to coordinate peers, the sharing economy is giving rise to the commodification of goods and services that were not exchanged on the market until the recent past (housing affordability and gentrification are crucial issues in this regard, as the rising short-term rentals are diminishing the availability of long-term rental houses in many urban areas, especially affordable ones). In sharp contrast with many regulated industries, sharing firms adjust prices for their services according to market fluctuations, so they allegedly help to match supply and demand. Despite these measures have been radically limited by companies as they have proved to be highly unpopular,[26] they are still at the very centre of the price mechanism of the sharing economy.

9 Strict Rules and Principles

In order to regulate the sharing economy, it is necessary to make a first choice between strict rules and principles or, more likely, a combination of the two. In some instances, minimum standards may be the most appropriate solution, ensuring legal certainty to economic agents. In contrast, a principled and flexible approach can be better suited in other circumstances.

A strict rule is preferable for establishing the scope of application of professional rules versus new rules in the sharing economy and for defining the non-professional status of peers operating through platforms. As pointed out by the Commission, establishing thresholds under which an economic activity would be considered non-professional may be a suitable way forward. These thresholds can be either general (e.g. income) or sector-specific (e.g. number of days in short-term accommodation). Even if the many peculiarities of service providers may be better described as a spectrum from professional to amateur, rather than as a sharp polarisation between two distinct categories, fixing a threshold to distinguish the

[26]Uber triggers protest for collecting fares during taxi strike against refugee ban", Washington Post, 17.1.2017 https://www.washingtonpost.com/news/dr-gridlock/wp/2017/01/29/uber-triggers-protest-for-not-supporting-taxi-strike-against-refugee-ban/?utm_term=.4951bf15112b.

two spheres is strongly preferable in order to define clear-cut criteria easy to be interpreted and implemented both by public authorities and platforms.[27]

On the other hand, principles may be better suited to address safety concerns and consumer protection issues. Assuming that there is no "one size fits all" measure to regulate such a heterogeneous spectrum, a general principle establishing that regulation should be "proportionate to the scale of operation" can offer the flexibility to address a novel and elusive phenomenon. In adopting such principle, legislation may oblige peers to use their judgment to assess the risk of their own activity and determine what precautions are reasonably practicable and appropriate in the light of particular circumstances. Public authorities should act consistently when responding to suspected breaches, thus choosing the most appropriate action to undertake in the light of the particular circumstances (Smorto 2017).

10 Concluding Remarks

The traditional rules laid down for the provision of professional services in some cases may result too burdensome and thus inadequate to regulate the peers' supply of goods and services. At the same time, though, the absence of legal rules for p2p services raises a manifest problem concerning users' protection, exposing customers to a number of risks, and may generate negative externalities. Moreover, the need of external regulation is further reinforced if other goals are taken into account besides protecting consumers and correcting market failures, namely distributive effects and value orientation.

To tackle these issues—while encouraging the flourishing of p2p activities—a multifaceted strategy is desirable. A first step is leveraging intermediaries' self-governing and enforcing capacity.[28] But this assumption does not imply that public regulators should refrain from defining rules for the sharing economy. Quite the opposite, many market failures cannot realistically 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, especially for those critical aspects that platforms cannot

[27]Member States can use different standards to differentiate between professionals and p2p services, referring to circumstances that point toward one direction or the opposite, such as the frequency of services, the level of turnover and motivations. The greater the frequency of the service provision, and the higher the turnover generated by the service provider, the more evident it is that the provider may qualify as a professional. This is especially the case when the service is provided for remuneration. See Communication, p. 9.

[28]In tackling this aspect, public authorities should consider platforms not only as rulers but also as enforcers, making use of their self-enforcing capacity and urging them to enforce legal rules, without necessarily having to rely on peers' compliance. Cf. "Airbnb to Enforce Limits on Rentals in London, Amsterdam", 1.12.2016, https://www.wsj.com/articles/airbnb-agrees-to-enforce-amsterdam-limit-on-rentals-1480580233.

work out and/or has no interest to address. This conclusion holds both for efficiency reasons—i.e. market failures that platforms cannot solve and have no interest to solve—and, even more important, for other critical social goals.

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Part II
Case Studies

Sharing Economies. For Each One. For All

Maria Rosanna Fossati

Abstract This paper aims to increase awareness of the relationship between sharing economy initiatives and human diversity. The issue is characterized 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. Case studies presented are mostly related to the mobility and hospitality, in Italy and Europe.

1 Introduction

After a couple decades of trial, services of sharing economies based on Internet platforms have arose from just economic and sociological experiments and become more solid and substantiated models (Fig. 1).

In general, one of the key factors for the success of this phenomenon is to have a wide and heterogeneous participants base, but regarding people with disabilities, some services might increase social exclusion (or perpetuate it) causing both intentional and unintentional discrimination due to their lack of accessibility (Ameri et al. 2017).

People with disabilities have a long record of social exclusion (Schianchi 2012) and sharing economies do not seem to reverse the trend. In this paper, "sharing economy" is intended as a broad *umbrella* term that refers to a model based on sharing, trading, or renting rather than "buying the ownership." This model, that enables access or consumption, could include business-to-business, business-to-consumer, or peer-to-peer exchanges. This definition is by Rachel Botsman's work on collaborative consumption. Rising sharing economies provide

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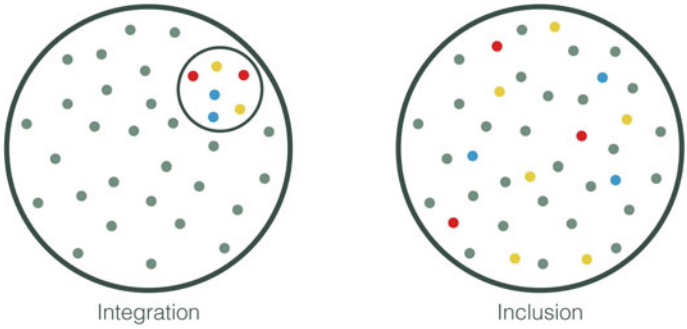

Fig. 1 The idea of social integration vs social inclusion

opportunities to conclude transactions about goods, skills, and services on Internet-based platforms. This model is usually based on social networks, where communities meet and collaborate. Notorious examples are represented by Uber and Airbnb. If, in the recent past, consumers were relatively passive, nowadays they are becoming more collaborative in arranging the production and consumption of assets that are privately owned (Botsman and Rogers 2010). The sharing economy model allows people to participate and share private assets, expanding possibilities and opportunities for many individuals. But this economic model is showing some critical aspects related to service accessibility, creating unintentional (but also intentional) social discrimination.

2 Sharing Economies Refer to Wants or Needs

David Pluess et al. (2016) deepened a specific question: "How can companies design sharing economy models that meet the needs of low-income and under-served groups?" In his text, he writes (in a interview for BSR research): "[…] many existing services target wealthier individuals. Consequently, there is a vast array of sharing models that provide "wants rather than needs". Companies can gain insight into low-income users' specific needs by taking a more human-centered approach to their product- and service-development processes."

Pluess et al. get the issue point with crystal clear accuracy. Specific needs could be solved only if the planning phase is approached from a human-centered approach that refers directly to design discipline, ergonomics and applied cognitive psychology.

Each target has specific needs. In this paper will be analyzed requirements referred to permanent or temporary disabilities that gather specific needs and, if not considered, might exclude totally their bearers from offered services.

If people with disabilities could not access sharing economy's services, a demand in this way is not generated, and writing about this idea, Professor Arun

Sundararajan[1] have noted that "what companies often dismiss as a lack of demand, is actually a design problem that does not cater to end-user needs" (Fox 2016).

If some design flaws generate a lack of demand, it is also true that some emerging issues were solved by designing specific offers and services. Indeed, the sharing economy model could constitute a potentially strong and useful tool for people with disabilities (and its specific needs).

Davis Pluess et al. (2016) write that:

> There is also evidence of specific excluded groups benefiting from the sharing economy over traditional models. Some disabled customers have found that Uber and Lyft make it easier to get around cities. For blind customers, hailing a ride is much easier than before, and because all payments are handled via an app, these customers do not have to worry that a driver might overcharge them (Rodriguez 2015). There are also a growing number of accessibility features included in mobile apps.

This way of promoting and experimenting new services provides the possibility and the strong impulse to satisfy specific market niches through product and service innovations. This market exploration permits to identify new target users and different needs and wants to satisfy. For example, in Europe and USA it is possible to find business that developed specific services for elderly people, such as transportation services, meal delivery, and other on-demand services. Usually these services do not interact with clients by apps or Internet but by phone, sometimes with the help of an operator.

"The service, GoGoGrandparent, was inspired by the developer's grandmother, who lost most of her vision and suffered from various ailments that limited her mobility" (David Pluess et al. 2016)

In the same paper is also cited "HelpAround's Diabetes Safety Net" as another good example of the power of the sharing economy. Diabetic patients can connect with others in their area and search for those who may have an extra glucose meter, test strips, or glucose tabs to share. This helps patients share resources and receive advice from fellow patients or consult with registered nurses."

The research made by AARP[2] examined how people with disabilities view the sharing economy and conducted focus groups and interviews with 43 people who have disabilities or provide care to someone who does. Within the key findings, the research listed some perceived advantages in using services provided by the sharing economy, such as:

- High quality of service. "Participants reported reliable service from courteous providers. For example, compared with cabs, drivers from transportation network companies such as Lyft and Uber were generally described as being more courteous. […] Several participants expressed the belief that the customer rating

[1]New York University's Stern School of Business.

[2]Turtle Bay Institute, Inc., of Princeton, NJ, conducted the research for AARP. S. Kathi Brown of AARP Research oversaw the project. Susanna Montezemolo and Dorothy Siemon (AARP's Office of Policy Development and Integration) provided valuable guidance and subject matter expertise during the course of the project.

system available through many sharing economy companies provides an incentive for service providers to offer high-quality customer service."

- Expanded choice. "Participants felt that sharing economy companies expand choices by giving consumers direct access to more information and options. For example, participants liked that home-sharing service like Airbnb usually includes pictures of available homes and other information."

3 An Emerging Gray Area

Even though there are positive examples around the world that demonstrate how sharing economies services could implement social inclusion in the society for people with disabilities, there is a general, frequent issue that underlines all these new economy services.
How laws and norms regulate these Internet-based services?

The *accessibility of user interfaces* is the very first element that Web sites and apps should deal with, but concerning this topic, private businesses, as opposite at public entities, do not have any normative obligation to be accessible.

The second element to consider is about the *accessibility of the service itself*.

Depending on the country you focus on, for both elements is possible to refer to some unspecific laws (or, more often, general guidelines): While in America the reference law is the Americans with Disabilities Act (ADA), in Europe is it possible to refer to the United Nations Convention of the rights of persons with disabilities (2006). These laws embody general principles, such as the right to participate in society in equal conditions, the right to accessibility and autonomy regardless of personal situation, etc.

On the other hand, for specific activities such as public transport or tourism, where national norms on accessibility are available, many sharing economy-alike services such as Uber or Airbnb, given their not yet documented and analyzed nature, escape from norms and create a gray deregulated area.

As Ameri et al. (2017) write: "the expansion of such services potentially creates a new realm of unregulated activity that blurs the boundaries between public and private space and may undermine the principle of equal access to goods and services."

Ameri et al. (2017) reinforce also the concept by focusing on ADA specific range and purpose, noting that the actual regulations do not cover yet all the permutations among sharing economy services and different disabilities creating a sort of cognitive dissonance among public and private functions:

> The rise of new Internet-based platforms enables many service providers to intentionally or unintentionally avoid coverage by these laws. The ADA and other anti-discrimination laws make clear distinctions between public space (subject to the laws) and private dwellings (outside the scope of the laws). The sharing economy, however, blurs the distinction between public and private space, by commodifying transactions that take place in what is

> traditionally considered private space. This creates a gray area that may reflect a return to the time before modern civil rights laws, and the enlargement of space for exhibiting discriminatory behavior in commercial transactions.
>
> […] While many people benefit from the increased use of platform-based services, public policy and private organizations need to confront this growing grey zone of unregulated activity to preserve the principles of nondiscrimination and equal access for every individual.

For anyone whose job should require to pay some degree of attention to the changes of not-too-far future societies (as designers, architects, politicians, and lawmakers should) it should not be a great surprise that many of the emergent or just introduced technologies (such as Internet of Things devices, self-driving cars, blockchain architectures, crypto-currencies) pose the same normative issues in their respective fields, creating an disheartening friction among users, states, and producers on topics such as privacy, gentrification, lobbyism, and bureaucracy.

4 Emerging Sectors in Italian Sharing Economies Services

"Collaboriamo" is the annual event about the mapping and the state of Italian sharing economy-based platforms, and it clearly shows how transports, goods exchange, tourism, and personal care services are the most used and requested, while food and culture are among the emerging themes among Italian users.[3]

To simplify reading, researches about the topic are here organized as follows:

- Mobility services;
- Accommodations services.

4.1 Mobility Services and Disabilities

In general, mobility deals with the need to move people from a place to another one. Here are considered services related to what is known as "first mile–last mile." Thanks to sharing economy services is now possible to rent different means of transport and to walk for the first and the last mile.

People with mobility impairments and in general anyone with a disability well know very well the issue.

There are already available on the market some specifics Apps that deals with the mobility problems for disabled people (such a Wheelmap[4]), and about the

[3]For more informations visit: http://www.collaboriamo.org/media/2016/11/Sharitaly_2016_MainieriPais.pdf (accessed 10/2/2017).

[4]For more informations, see https://news.wheelmap.org/en/wheelmap-ambassador/ (accessed 10/2/2017).

accessibility of car-sharing services we are seeing the rising of different initiatives prone to sensitize users and providers.

In March 2016, Milano-based street artist Biancoshock reflected on discrimination in car-sharing services by customizing and juxtaposing a wheelchair. He adorned it with colors and the logo of the Enjoy brand (Eni's car and scooter sharing service) and put it in a parking lot reserved for disabled people.

The performance was named "NoJoy" and constitutes a clear provocation made to underline the lack of attention toward people with disability and their accessibility problems in urban mobility.

While most of mainstream car-sharing services are not ready to answer to the needs of those who have mobility impairments, in the province of Palermo, since January 2017, the public transportation system's service "Io Guido Car Sharing" has increased its fleet with four cars with aids that allow people with lower limbs mobility impairments to enjoy Palermo and drive on its streets.

Another initiative in France, called Wheeliz, is trying to answer wheelchairs users needs with a peculiar and target-oriented car-sharing service.

The founding concept is to realize a service that easily connects people with disabilities to owners of adapted cars. De Vilmorin, a 24-year-old lady observed the reality: "It's very difficult to get around when you are in a wheelchair, because public transportation is not accessible. You can't just grab a cab or rent a regular car" she told to Mashable.[5] She estimated approximately 100,000 privately owned adapted cars in France, and she is trying to offer these owners the opportunity to earn extra money by renting out their vehicles, helping people in wheelchair with transportation. Wheeliz is present in Paris, Nantes, and Bordeaux, with plans to expand in all the country and beyond the borders. Prices are affordable, and there are 120 cars available with 900 registered users, including tourists that plan trips to France.

Accessibility issues were met also by people with sight impairments when facing car-sharing services.

It is easy to figure out why, for a blind person, to get a cab could be a paramount if it requires the access to an app for smartphones with no accessibility features, unless there is not a direct involvement with disabled people associations.

For example, an Italian car-sharing enterprise that operates in Turin and called Wetaxi started in 2016 to collaborate with "Unione Italia Ciechi e Ipovedenti—UICI. The result is that Wetaxi implement its app with VoiceOver and Talkback softwares, in order to grant accessibility and usability also to visually impaired users.

The final app did not change, but while subscribing, in the creation of the user profile, it is possible to report sight impairments and activate additional accessibility services. In this way, the app allows accessibility software to operate correctly and taxi drivers are notified of their users' special needs.

[5]Information from Mashable.com Web site, article "How the Paris startup is becoming an Uber for people with disabilities", Jonathan Keane, 10/4/2015.

Moreover, it will be possible to report the presence of a guide dog.

Wetaxi is also working to let their app to be compatible with vocal assistants, such as Siri (Apple), to let blind people to use the app without keyboard or graphical user interface operations (GUI).

Returning to the most known mobility service around the world, Uber has been heavily accused for not being accessible to people with disability and has even been interrogated by the Massachusetts attorney general about their services accessibility.

On the other hand, the organization has developed UberASSIST, a special service where drivers are trained to handle mobility aids and to face disabilities issues.

Regarding its drivers, Uber has also developed visual features in its app for deaf users.

"Uber has partnered with Communication Service for the Deaf (CSD), the nonprofit organization focused on improving quality of life for people who are deaf, deaf-blind, or hard-of-hearing. Together, they are developing new recruitment and training processes to get deaf and hard-of-hearing drivers on board and making accessibility adjustments in the Uber app, such as flashing lights instead of audible notifications when a ride is requested" (source: Uber Web site).

But Uber is developing other features in different services, as reported in BSR research, that try to solve issues strongly related to social inclusion for low-income communities: "UberHEALTH partnered with HealthMap Vaccine Finder to deliver wellness packs for US$10 and free flu shots from registered nurses."

How it's possible to understand, initiatives that tend to solve people with disabilities mobility issues are rising also in sharing economy services, but these few examples clearly demonstrate how diverse are accessibility issues to be solved.

As shown, for example, Palermo initiative solves the need to drive of persons with lower limbs impairments, while Wheeliz offers mainly the possibility to use adapted cars to transport people in wheelchairs, and lastly Wetaxi works on accessibility issues for sight-impaired persons.

Even if in Europe accessibility is a right to everyone as written in the UN Convention on the rights of persons with disabilities (law in Italy since 2009), answering very diversified needs and wants could be complicated on many levels.

4.2 Accessible Tourism and Accommodations Services

Also in tourism sector, sharing economy services are redesigning users' interactions, business models, and welcoming mechanisms. Airbnb could represent a well-defined case study. As for other legal issues in most countries where Airbnb is used, also accessibility for those who have disabilities is an important issue. For instance, in Italy, it is not possible to apply to Airbnb's houses the D.M. 236/1989 that states the regulatory accessibility requirements.

Once again, the only principles that are prescriptive are contained in the generic UN Convention on the rights of persons with disabilities.

About Airbnb case study, at the end of 2015 where made two in-depth surveys signed by the Harvard Business School that highlighted how African-American guests have 16% less chance of being accepted in some american homes, from Baltimore to Los Angeles, compared with "white" guests appellations.

After this report was published, Airbnb announced a new non-discrimination policy (September 2016), requiring all hosts to "affirmatively certify" that they will treat all guests "regardless of race, religion, national origin, disability, sex, gender identity, sexual orientation or age, with respect, and without judgment or bias."

But in early 2017, a new studio backs up the issue again, reporting that not only guests with African-American names but also people with disabilities would have more difficulties looking for a home on Airbnb Web site (this survey is signed by Rutgers University—New Jersey State University).

On the Airbnb Web site, it is possible to read: "Refuse to provide reasonable accommodations, including flexibility when guests with disabilities request modest changes in your house rules, such as bringing an assistance animal that is necessary because of the disability, or using an available parking space near the unit. When a guest requests such an accommodation, the host and the guest should engage in a dialogue to explore mutually agreeable ways to ensure the unit meets the guest's needs".[6]

Ameri et al. (2017) conducted a survey about disability access in sharing economy services, and they specifically focused on the reaction of hosts to fake profiles of disabled people making light on the difficulty of the inclusion for categories:

> We created profiles of people with four types of disabilities that may require accommodations: blindness, cerebral palsy, dwarfism, and spinal cord injury. The key findings are: Hosts were less likely to pre-approve, and more likely to reject outright, the requests from travelers with disabilities than requests from travelers without disabilities. The pre-approval rate was 75% for travelers without disabilities, compared to 61% for travelers with dwarfism, 50% for travelers with blindness, 43% for travelers with cerebral palsy, and 25% for travelers with spinal cord injury.
>
> […] While many Airbnb hosts expressed great sympathy and willingness to consider accommodating guests with disabilities, the overall results indicate that this new institutional form creates substantial challenges in ensuring equal access for people with disabilities.

Ameri et al. (2017), according to the statistical discrimination model, reported also that "hosts may not be personally uncomfortable with individuals with disabilities, but have imperfect information on individuals and base their decisions on perceptions of people with disabilities in general (Arrow 1973; Phelps 1972). Hosts

[6] https://www.airbnb.com/help/article/1405/airbnb-s-nondiscrimination-policy-our-commitment-to-inclusion-and-respect (accessed 08-20-17).

may, for example, perceive that travelers with disabilities will be generally more troublesome or create extra costs or burdens."

However, increasing demand of accessible accommodations[7] is encouraging initiatives that respond to specific needs expressed by people with disabilities. For example, the "Bed & Care" project is an Internet-based collaborative service that allow people with severe disabilities to book specialists and specialized services directly at the travel destination. From 2015, Bed & Care proposes to exchange house among people with similar problems, to reduce costs and to live a really comfortable holiday. Serena Stefanoni and Pier Fabrizio Salberini, the founders said that the service:

> Bed & Care aims to create a comprehensive service network around the disadvantaged tourist by informing them of the services available, which can be booked and coordinated directly through the portal. "Bed & Care" also promotes the development of a **home-sharing network of people with similar disabilities** to offer a person with disabilities or the elderly the opportunity to enjoy a low-cost holiday within a already set up to meet your needs.

Accessible tourism sector carries complex problems and as shown it *deals with mobility and accommodations accessibility, but also with the availability of specific information* useful to people with disabilities to correctly evaluate services accessibility. To solve this concerns and issues, there is an increasing numbers of collaborative Internet-based platforms that permit to share this kind of information.

In Italy, an interesting case study is diversamenteagibile.it that states in the home page: "No one can better review a service then the one who uses it."

On the home page of the Web site "diversamenteagibile.it", it is possible to read this text: "The project diversamenteagibile is a brainchild of Maximiliano Ulivieri who preparing his travels happened to search in the web for wheelchair accessible facilities, such as hotel accommodation, or information on places to visit in the city that does not have architectural barriers, museums, tourist attractions, bars and restaurants, …everything a normal tourist must know before travelling. Information are on the Internet, but often are wasteful, sometimes misleading, and not always correct.

All this information, spread on the Web, is not organized, or even competent and optimized. More often, the information is not very specific and poor picture is post as demonstration of accessibility.

Often happens to read "accessible to disabled" and after a short telephone conversation you realize that it is not. Accessibility could be very subjective and not always a structure that fits a specific disabled person may be fine for another person. In this case the best judgment is made by disabled people themselves, who certainly have capacity of higher analysis, being the real end users.

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[7]European study "Economic impact and travel patterns of accessible tourism in Europe" estimates the size of the accessible tourism market in Europe around 780 million trips for the year 2012. For further informations, see http://ec.europa.eu/DocsRoom/documents/5566/attachments/1/translations/en/renditions/pdf (accessed 04/10/2017).

Here is the idea of creating a Web site/blog where you gather all the experiences of people with disabilities, with written reports, photographs, and videos of their trips, in order to provide useful information to other disabled people who want to attend the same city.

Each traveler will write about the accommodation where he stayed, with photographs and video whenever possible. What we want is the chance to have photographs of accessible bathrooms and the room available, more details on access to the structure, whether external or internal (elevator, ramps, which areas of the hotel are accessible).

We want the structures to understand that is not enough to define itself as accessible, but is necessary to give a complete description to leave to disabled people the judgement."

A last example in tourism field is represented by Izi Travel, a collaborative Internet-based platform that promote self-produced audio guide about sites and museums.

In 2011 izi.TRAVEL.com was kickstarted, with the concept idea of introducing tourists around the world a brand new and innovative way of visiting cities, museums, and their stories through an open, global, and free platform. A middle ground between Facebook and Wikipedia."[8]

The aim is to create a dynamic hub where thousands of users can easily create multimedia guides in order to make visits to museums and cities much "more exciting and educational, for every kind of tourists."

This case study does not refer directly to people with disabilities, since the product proposal reveals an inclusive approach. Overcoming the accessibility barriers of apps and Web sites, for everyone, means that also visually impaired people enjoys very immersive and emotional audio guides, uploaded by private people and professionals.

5 Conclusions

To summarize the case studies presented, it is possible to assume that accessibility issues primarily arise because of two elements:

- accessibility of user interfaces, such as Internet platforms and apps or appropriate information about services provided;
- accessibility of services, product, spaces, and experiences.

It is extremely important to consider that this analysis is conducted on the already available and most popular services, reflecting a broad idea that suppliers

[8]Description from Web site accessed 10/4/2017.

have on accessibility and disabilities. In most cases, the initiatives involve directly people with disabilities or associations representing people with disabilities, while in big enterprises, such as Uber or Airbnb, involvement of people with disabilities to solve accessibility issues is not always granted.

Reflecting on models of discrimination, Ameri et al. (2017) make a breakdown of different cases. From a design field point of view, the most interesting case is represented by the third type of discrimination, based on the inaccessibility of the physical environment. As stated by EIDD "Good design enables, while bad design disables".[9]

As demonstrated in previous publications,[10] environments have responsibility in creating social exclusion and stigma, until the devaluation phenomenon happens, as described by Vash and Crewe (2004). As assumed by Ameri et al. (2017): "…if end users are not meant to be the designers, then they should be designers' target at the least. […] Companies also should foster diversity and encourage inclusion in their own workforce—from executives to engineers to user-experience designers—to ensure that same diversity is considered as part of design, development and distribution of products and services."

Sharing economy experts like Kate Crawford, a Researcher at Microsoft and Co-Chairwoman of a White House symposium on society and artificial intelligence, have emphasized how technologies reflect the values their creators hold. As Crawford (2016) put it: "So, inclusivity matters—from who designs it, to who sits on the company boards, and which ethical perspectives are included." Otherwise, Crawford (2016) argues, "we risk constructing [technology] that mirrors a narrow and privileged vision of society, with its old, familiar biases and stereotypes."

This might sound as a no-brainer, and in fact this design concept is nothing more than the idea that if anyone has to design inclusive solution for humans; it is necessary to always have in mind the importance of contexts within a human-centered design approach.

As Alexander (1964) notes, to help designers figure out this context: *"in professional design, which is a self-conscious design process, designers must conceptualize an actual context in which they are not present and iteratively match their conceptual design to the context. Designers have difficulty shaping a context that they have not experienced. […] Professional designers strive to reduce the gap between their contextualized contexts and actual contexts."*

On the side of good practices promoted by big companies, it is noteworthy to remember how Uber shown itself very sensitive of context and user reported issues, when in Egypt it partnered with a local initiative to combat sexual harassment and trained Uber drivers on how to recognize, prevent, and take positive action against inappropriate behavior (Ahmadein 2015).

[9]EIDD Stockholm Declaration (2004). For further information see: www.designforalleurope.org.

[10]For insights, see: Fossati, M.R., Designing hotel for all, Ph.D thesis, Politecnico di Milano, Milano 2016.

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Think Mobility Over: A Survey on Car2go Users in Milan

Davide Arcidiacono and Ivana Pais

Abstract In a moment when city rethinks mobility and users redefine urban transport practices, car sharing takes on a strategic function. However, the ability to develop a shared mobility encounters different resistances—cultural, social and economic—that need to be considered for a truly effective service design. The chapter analyzes the case study of the car2go car-sharing service in Milan based on data collected from a representative sample of users (N = 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 affect the level of overall satisfaction of the users. This doesn't 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.

1 The Rise of Urban Sharing Mobility

The city is living a new phase of renewal as a space for innovation and sociopolitical experiment (Le Galès 2002). One of the most relevant challenges of urban governance (Fainstein 2001) is rethinking urban mobility and redefining urban transport practices. Access to the city and the problems of urban mobility are a

The chapter is the result of a joint work of the two researchers. However, Sects. 1, 2 and 6 can be attributed to Ivana Pais, while Sects. 3, 4 and 5 can be attributed to Davide Arcidiacono.

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priority in the political agenda. The ability to travel into the metropolitan time-space (Boltanski and Chiapello 1999) is an indicator of the quality of urban life. The urban sprawl has stretched time and commuting costs due to the agglomeration of residents in the municipalities along the metropolitan belt. According to Eurobarometer data (2013), in this growth of movement in and out of the city, the private car continues to be the most popular means of transportation (about 50% of motorised trips), and particularly in some countries such as Italy (66%), Ireland (68%) and Cyprus (85%). However, a private vehicle is being driven on average about an hour a day with an average load factor of 1.4 people (Handke and Jonuschat 2013), and it remains underutilised for about 80% of its life cycle.

Sharing mobility systems (SMSs) fit into this scenario as an articulated transport system based on a digital infrastructure capable of flexibly sharing both vehicles and trails, optimising the use of resources and fostering collaboration within the mobility chain: producers of transport equipment, providers of mobility services, municipal agencies and consumers. The transition from mobility predominantly based on ownership to that based on access could be defined as a socio-technical transition (Geels 2002) because technology has played a key role in making this innovation much more competitive, flexible and able to better integrate with other traditional means of transportation.

Car sharing was the first organised form of sharing mobility, which appeared for the first time in Switzerland in 1948 by the Sefage cooperative, but it only became a more popular practice after 2008, when we saw a real rise in the car-sharing service where it has become active in more than 600 cities in 18 countries (Shaheen and Cohen 2008). Today, it represents the more developed shared mobility system, thanks to the push of the car manufacturing companies and the national railway firms which are increasingly investing in the development of these services.

When we talk about car sharing, even if there is some peer2peer car sharing (i.e. Turo or Getaround in the USA, Tamyca in Germany, Buzzcar in France or Auting.it in Italy), we refer mainly to on-demand market services managed by companies that offer their own cars.

We can distinguish the more traditional *station-based systems*, whereby vehicles are parked in designated areas, from the more actual *free floating systems*, where vehicles can be picked up and deposited everywhere in a predefined urban area. This service is based on access to a vehicle shared among a plurality of users, and any user can rent the vehicle shared. So a negative reciprocity mechanism prevails (Bardhi and Eckhardt 2012), whereby only one subject (in this case the provider) appropriates most of the benefits generated by the transaction. The outcomes recognised by the use of this system are mostly of optimising the vehicle fleet, with important effects on the level of urban traffic congestion (Cervero 2003), or improving the ecological impact of urban mobility because most of the shared vehicles are newer and in some cases also electric with zero emission (Ademe 2015).

The majority of the studies available on this topic are concentrated on its environmental impact (Cervero 2003; Rydén and Morin 2005; Martin et al. 2010), while few studies (Bardhi and Eckardt 2012; Ball 2000) have examined how the

user experience could be a key element of the success and failure of car sharing and how this is a critical factor. The ability to develop mobility sharing encounters different resistances—cultural, social and economic—that need to be considered for a truly effective service design. As argued by Daconto (2017), mobility choices are confronted with the opportunity of options available, the access conditions but also the individual skills and capabilities, or even the presence of any economic or social barrier.

The following paragraphs in this chapter attempt to address this issue, presenting the results of a research study carried out among the users of one of the most successful car-sharing services in Milan.

2 Objectives and Methods

The presented study aims to analyse the car-sharing service from the perspective of users and their customer experience. The research aims to answer the following questions on car sharing:

- What are the main reasons for using the service: comfort, cultural exploration or affordability?
- What is the impact of this sharing practice on the use of other means of transport? Is there a substitution effect or a complementary effect?
- Are there elements of the service design that are critical for the user experience? If so, what are the solutions proposed by users?

In order to achieve these objectives, a survey was conducted through a representative sample of users of car2go in Milan. The questionnaire was administered using the CAWI method (Computer-Assisted Web Interview) through the Qualtrics software. Data were processed with a specific statistical analysis programme (SPSS) using factor analysis for the detection of specific user segments.

For the analysis of users' customer satisfaction levels, a range of scales were used (with a score from 0 to 10), compared to four fundamental dimensions of the service: the Service Delivery mode; Affordability and Sustainability; Vehicles; Customer Services and Complaints. This measurement system was inspired by different customer satisfaction assessment tools, such as the TRIM-Index model (Jankal 2003) and the SERVQUAL (Parasuraman et al. 1985).

The survey was conducted from 21 March 2016 to 18 April 2016, and it was completed by a total of 3,758 users.

Respondents (68.9%) are male and the remaining 31.1% are female. The profile of the sample by gender is consistent with that of the entire customer base of car2go in the city (M: 64.5%; F: 35.5%). Moreover, 27.2% of those interviewed are under 35 years old, while the most significant segment of respondents is between 36 and 45 years (32.5%), followed by those between 46 and 55 years (26.9%) and those over 55 years (13.4%). Also, in this case, the sample is sufficiently consistent with

the customer base: the age group 36–45 years is still the most significant (almost 30%), followed by those between 46 and 55 years (22%).

The analysis of the results will be developed as follows: in Sect. 3, the different user profiles and their motivation will be described; in the next paragraph, the impact of car sharing on mobility styles will be examined; finally, customer satisfaction items will be analysed. In the concluding paragraph, the most critical issues and prospects for improvement are discussed in order to provide specific highlights that are useful for mobility service designers.

3 User Profiles and Their Motivations: Comfort, Cultural Exploration or Affordability?

The user profile analysis allows us to highlight some salient features about the access and the use of the service that could be useful to understand their motivations.

More than a third of users live in two-people households (32.5%), with the addition of nearly one-third of respondents who are single-person households (28.5%). Families with three members are 19.7%, while those with four or more are 19.3%. Clearly, this is related to the age of our sample, where almost a third is less than 35 years old, in a country where people usually get married and have their first child only after thirty years old.

Our respondents (63.8%) have a university degree, while a third have a high school degree. Those with a lower level of education (middle school, elementary, vocational qualification) are residual (4.3%). According to census data for the Province of Milan, the incidence of people with at least a diploma is about 64.2%, with a prevalence for high school graduates compared to graduates from university. In our study's sample, the proportion of highly educated people is overturned, confirming that the use of car sharing is largely widespread among those with a higher human and cultural capital.

87.7% are employed, when the percentage of gainfully employed persons between 20 and 60 years old is around the 70% in the Province of Milan. 35.7% are self-employed (entrepreneur, freelancer, professional, etc.), while those who have a dependent job make up 56.7% of the sample. Inactive persons (housewives, students and retired people) represent only 7.7% of the sample. It is easy to see how the mobility needs of the latter are more limited, also because car sharing requires a certain degree of economic capital.

The main reasons for using the service (Fig. 1) are mainly linked to its flexibility and versatility in terms of freedom of movement (46%) or even to guarantee greater freedom of transit in restricted traffic zones (38%). Twenty-two percentage use the car-sharing service because they do not own a car. If the pragmatic reasons are prevalent, these are also explorative motivations, such as the desire to experiment some new forms of urban mobility (37%). Comfort and cultural experimentation

Fig. 1 Reasons for subscription to the car2go service (multiple choice %)

seems to prevail over affordability: 14% of the sample use the service because of car ownership running expenses (cleaning, taxes, fuel), 13% because it allows them to save money when compared to other means of transport (i.e. their own car, or a taxi service) and 10% because of its affordable price. Finally, the environmental motivation appears to be the least significant (8%), although communication and rhetoric on shared mobility systems are often centred on this feature. Conversely, this result appears entirely consistent with what emerged in other surveys on the sharing economy, highlighting how ethical and environmental drivers take a lower weight than the more pragmatic or economic ones (Nesta 2015; Owyang and Samuel 2015).

The reservation service is almost exclusively via apps (95.6%), and only a residual part is via the Internet (4%) or call centre (0.4%), demonstrating how mobile systems and the always-on connection represent a crucial revolution that allowed the car-sharing system to spread so rapidly in recent years, making it even more dynamic and flexible for daily commutes. Despite the potential, the overall levels of use are still only modest. In the sample interviewed, only 20% claim to have used it at least once a week, while the vast majority uses it monthly (almost 66%).

A factor analysis and subsequent clustering through the use of the K-medium method were carried out in order to identify a specific customer segment. The following types of users were identified (see Table 1):

1. *Flexible Moving Families (27%)* mainly use it for its flexibility (48.8%), versatility and potential of access in urban areas with traffic restrictions. There is a slightly higher usage profile among inactive persons such as housewives or retirees (13.6%), or the self-employed (49.2%) aged over 46 years (39%), married persons (73%) and in families with 4 or more members (21.8%). It is not surprising that they have become aware of the service through the printed media (33.6%), considering the comparatively older age of this consumer

Table 1 User profiles (cluster—%)

	Flexible Moving Families (27%)	Smart Workers (46.4%)	City Users (26.7%)
Gender	Female (32%)	Male (72.3%)	Female (36.3%)
Age	Over 46 (39%)	26–45 (64.5%)	18–25 (13.9%)
Education	University degree (65%)	University degree (65%)	High school degree (37%)
Number of family members	Four or more (22%)	Single (29%)	Three members (33%)
Employment status	Unemployed housewives or retirees (13%)	Dependent worker (85%)	Unemployed students (13%)
Level of use	Less than once a week (83%)	Less than once a week (83%)	Weekly (30.6%)
Motivation of subscription	Movement flexibility (49%)	Experience a new way of mobility (40%)	Economic affordability (30%)
Main mobility style	Use their own car (86%)	BlaBlaCar user (51%)	Subscribers to public transport (47%)

profile. These are people who largely have signed up to the service since its opening in 2013 (47.2%), but they are not intensive users (83.2% use it less than once a week). They are residents in the municipality of Milan (83.8%), and they prefer to use their own car (85.8%), so car sharing remains a residual option.

2. *Smart Workers (46%)* are the most common profile. They are users with a strong experiential approach to mobility and who love to experiment with new ways of mobility (39.4%). We call them "smart" because they adopt multiple layered styles of mobility: they use carpooling and ride-sharing services (50.5%); they are also active users of the main competitor (Enjoy—74.1%), and they have a strong preference for public transportation (47.4% are subscribers to public transport). They are mostly men (72.4%), employed (99.3%) in a dependent job (84.7%), between 26 and 45 years (64.5%), and slightly more present among those without a car (19.3%). They are often one-person families or young couples. They heard of the service mostly through the Internet (44.4%) and joined from the beginning (61.6%) even if they are not intensive users.
3. *City Users (27%)* are the lowest component but also the ones that use the car-sharing service the most (more than a third uses it at least once a week), driven mostly by economic reasons (about 30%). They predominantly live in the province outside Milan (11.9%), so they are City Users for study (13.9%) or work, and as self-employed (41%). They are under 26 years of age (14%), often graduates, some of them live in the family home or share a flat with colleagues. Their use of car sharing is combined with traditional public transport (47%). They consider car sharing especially playful and designed to meet their leisure (35.4%) and consumption (14.9%) needs.

This typology, therefore, enables the linking of motivations to users' socio-economic profiles and their frequency of service use: "Flexible Moving Families" are motivated predominantly by comfort, "Smart Workers" by cultural exploration and "City Users" by affordability. It is important to note that the latter are small in number but make an extensive use of the service.

4 The Impact of Car Sharing on Mobility Patterns: Substitution or Complementary Effect?

The study of the socio-environmental impact of car sharing is one of the most debated issues in mobility research, but the results are ambiguous. Elliot et al. (2010) suggest that car sharing would eliminate between 90,000 and 130,000 cars from the roads. In a comparison between the European and the American use of car-sharing services, Shaheen and Cohen (2008) show how the effects on the number of vehicles removed would be higher in North America, but also with wider variation levels (between 6 and 23 cars for each vehicle shared), compared to the European market (between 4 and 10).

Several studies have also sought to assess the car-sharing enviromental impact and, in particular, if it could reduce the use of private cars or promote the use of collective transport (e.g. bus, train, metro). Some studies show, for example, certain vehicle traffic reductions in terms of vehicle kilometres (vkm): in some cases with a station-based system, the reduction is minimal and it is almost 6% (Cervero 2003); in others, it appears more substantial, up to 45% (Rydén and Morin 2005). Deviation with the free floating system is less extensive and would be between 6 and 16% (Martin et al. 2010). The same study has also highlighted that the impact of car sharing depends on the number of vehicles owned: on average, users that do not own a car use the car-sharing service more than users who own a car; if the user owns more than one car, that user drives much less when compared to other drivers registered with a car-sharing service. Moreover, the survey carried out by the *French Environmental Protection Agency* (Ademe 2015) shows how, after joining a car-sharing service, journeys on foot increase by 31%, cycling by 30% and the use of urban public transport by 25%.

An analysis of movements in car sharing in Milan shows that 90% of journeys are between 1 and 11 km (average 6.27 km) and on average last for 19.28 min (not including stops), a result very similar to the mobility path made with a personal car (Onsm 2016).

Users interviewed do not live in large families, and therefore, they do not have a large number of vehicles available: nearly half of them only own a single car and about 22% do not own one. This feature also appears consistent with the use of their vehicle, mostly for a few days per week; only 23.2% of the sample declares an everyday use of their own car. This evidence is confirmed by the fact that more than

half reported low mileage with their car, even less than 10,000 km/year. Therefore, car-sharing users are mainly those people who already make lower use of their car.

In terms of access to the service, this is direct (56%) in the majority of cases, reaching the shared vehicle without other means of transport. Moreover, the adoption of diversified mobility patterns is evident. When matching mobility needs and the means of transport used (Fig. 2), the private car is the main means of transportation. Public transport is the main alternative to a private car and is especially used for trips to/from home/school or work (33.8% versus 38.2% of those who mostly use a private car), or for business trips (30.7% versus 34.1% of those who would rather use a private car). However, car sharing occupies a relevant place in mobility patterns that are mostly for fun or leisure reasons (29.2% use it to go out at night, 11.7% to visit friends and relatives and 7.7% to go shopping). The functional reasons related to work are less relevant (only 2.6% use it as the predominant means of transportation for home/work commuting, and only 4.6 for business trips). Therefore, car sharing is the more suitable option for people who have a very active and rich social life, hold many activities with friends, go out relatively often and frequently visit a café or restaurant.

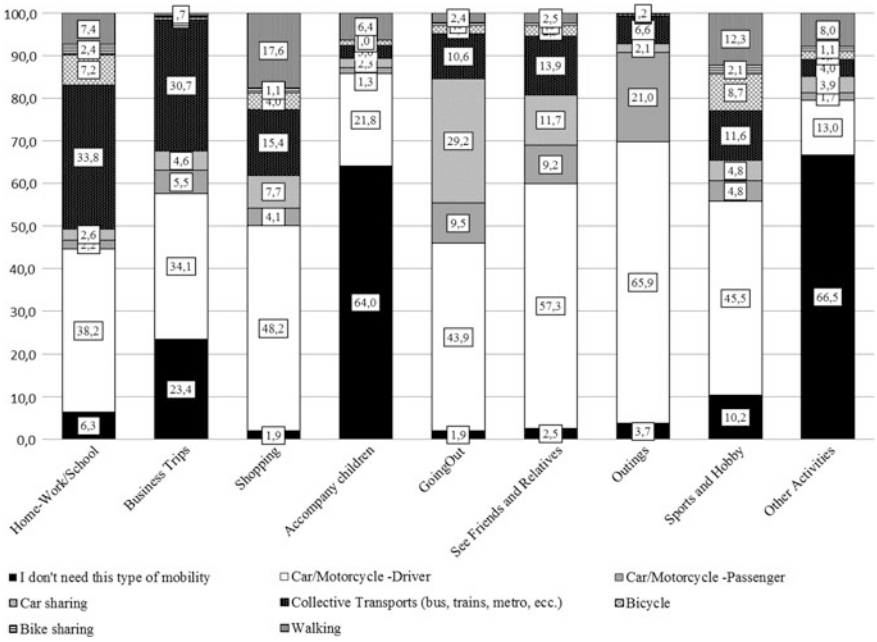

Fig. 2 Which kind of transport do you mainly use for the following trips? (%)

However, it should be noted that in most cases, users, despite being frequent consumers of public transport services, do not subscribe to them on an annual or monthly basis (almost 54.8% say they buy tickets as needed). Only 40% say they routinely use public transport with a monthly or annual subscription; the majority of them (76.8%) have signed a subscription before joining a car-sharing service, while the remaining 23.2% stated that they subscribed to the public transport service at the same time or even after joining the car-sharing service. It is an important result that demonstrates a certain potential in car sharing for the development of an intermodal urban mobility system. These data confirm the results of another study (Ademe 2015), rejecting the major fears about car sharing as a deterrent of the use of public transport and other collective means of transport, adversely impacting on urban traffic congestion. However, data confirm the flexibility of the car-sharing mechanism, especially with the free floating system (the one adopted by car2go), in developing intermodality.

When assessing the impact of car sharing on individual mobility, it seems interesting to evaluate whether the experience of the use of this service somehow contributes in some way to changing the mobility patterns adopted. When we asked how users would go about commuting had there not been a car-sharing service option, 48% of respondents stated they would turn to the public service, confirming the concerns on the negative impact of car sharing that would deviate from the use of public transport. However, a third would opt for a higher use of their own car, with the addition of a further 14% who would use a taxi. The answers should also be analysed in combination with another question (Fig. 3) which aims to highlight

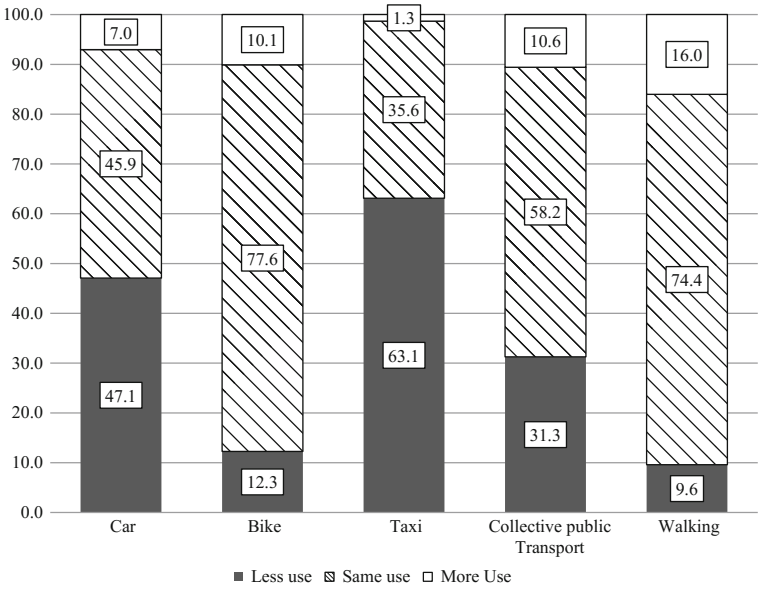

Fig. 3 How have your mobility choices changed since you started using car sharing? (%)

how the use of car sharing impacted on the frequency of use of other available transport modes. Clearly, the use of the car-sharing service led respondents to declare a less extensive use of private cars (47.1%) and taxi services (63.1%). Comparatively, there is a lower impact on the use of public transport services (31.3%) which, on the other hand, is one of the outcomes promoted by shared mobility (slightly more than 10% say they started using public transport more often after they began to use the car-sharing service), exceeded only by the option of those who would decide to commute on foot more (16%).

Milan is one of the city centres where sharing mobility services are being favoured by users and it is also testified by the plurality and competition of car-sharing suppliers. It is known how low access costs in the launch phase of many of these services have legitimised a multi-provider strategy among many users. Actually, in Milan, competition seems to be consolidated between car2go and Enjoy. In fact, 70% of respondents are also users of the Enjoy service. Share'Ngo (with electric vehicles), with approximately 17.4% of the active users interviewed is the third service provider, followed closely by Guidami (the only car-sharing station based in Milan), used by 14.8% of respondents. Interestingly, Guidami is the service with the highest percentage of non-active users (19.2%), confirming a consolidated preference for the free floating system.

Considering the other forms of shared mobility available in the city, respondents were asked if they were members of services such as BikeMi (the bike-sharing service in Milan) and BlaBlaCar (the most popular carpooling platform in Europe). The results gathered highlight a clear preference for BikeMi service (43.3%), which is used again mainly for needs related to sports and hobbies (2.1%), but also for trips to/from home/work. It is significant to note that 19.2% of users have also adopted the carpooling service, demonstrating just how structured shared mobility services are in an increasingly varied and synergic supply, to respond more effectively to the different mobility needs in the urban space.

On assessing whether there could be some kind of connection between the use of the service and the future intention of buying a car, 21.6% already decisively declared they are not going to purchase a new car, but 51.9% said that they would buy one. 22.8% stated they would obtain it through arrangements such as long-term rental, 16.4% declared a preference for lease purchasing, and 2.5% would consider buying the car together with other owners.

On discussing this issue (Fig. 4), 20.3% stated that they have already given up at least one of the family cars, with another 24.5% saying they might consider it. Just over half (55.2%) excluded this possibility.

All the results that emerged in our study confirm the limited impact of car sharing on influencing the future choice of purchasing a new car (11%), in contrast to other surveys in North America and Canada (Martin et al. 2010), that demonstrate a possible impact where between 25 and 71% of respondents have decided against buying a new car in the future. Therefore, a lower impact in renouncing a change in the use of a car seems to highlight the importance of car ownership in a country with an individualistic model of urban mobility, more culturally anchored on the use of private cars. In the Italian case, the preference for the private car is not

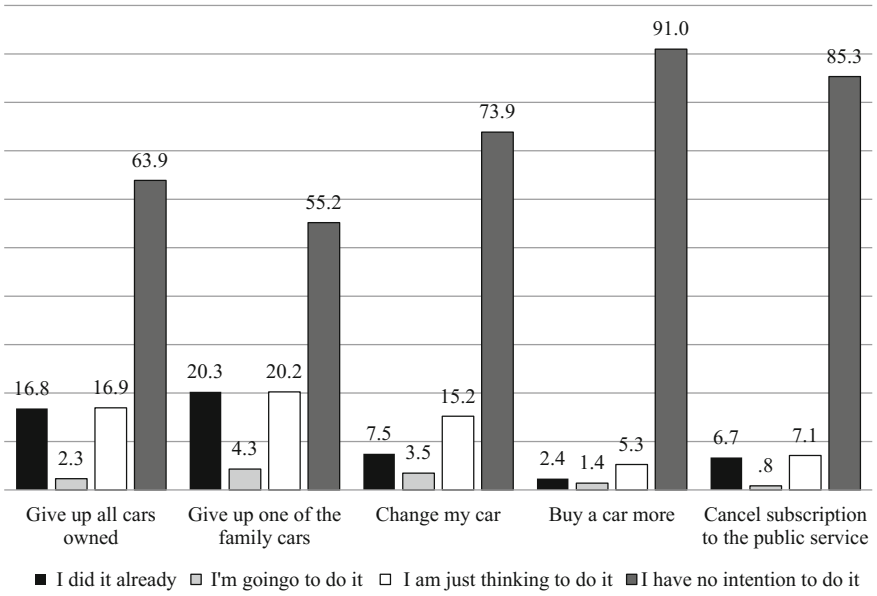

Fig. 4 Now that you can use car sharing, should you…(%)

always a free option but the result of cultural and infrastructural constraints, although Milan is one of the cities where the network and the quality of mobility services are more developed in the country (Arcidiacono 2017). This decision is not related to any of the user profiles analysed that show a similar preference to not give away their own car despite using the car-sharing service.

In conclusion, the impact of the car-sharing service on mobility choices seems limited: on the one hand, there is a reduction in the use of taxis and private cars, while on the other, some users also state that they would use the public service more often in the absence of car sharing, thus highlighting an undesirable risk of a substitution effect.

5 Satisfaction and Quality of the User Experience: Inputs for Service Design

The analysis of satisfaction and user experiences was based on a range of scales from 0 (least satisfied) to 10 (most satisfied), organised into four dimensions (Service Delivery, Affordability and Sustainability, Vehicles and Customer Care), each composed of three or four analysed items (Fig. 5).

A fairly high level of overall satisfaction was registered among the users interviewed: the majority express scores above sufficiency (mean 7.28, standard deviation score 1.66). The high level of satisfaction is also confirmed by 84.6% of

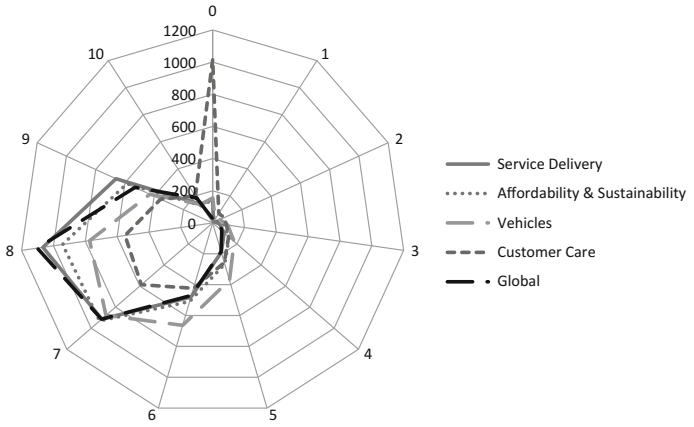

Fig. 5 Customer satisfaction dimensions of the car2go service

the sample who declare that they would recommend the car2go service to a friend. Looking at the rate of dissatisfaction (i.e. those who express a value below the sufficiency level) in the three user profiles, it is possible to highlight that in the *Flexible Moving Family* and *City Use*r profiles, dissatisfied clients represent 8.2% and 9.5% of users, respectively, while they rise to 12.7% in the *Smart Workers* profile. This user profile, more oriented to the experiential and explorative dimension of car-sharing services, and also more experienced in the use of other shared mobility services, seems to be significantly more attentive to all the intrinsic features that compose it, while the other two profiles, motivated more by comfort or savings, seem to concentrate mainly on the dimensions that best match these characteristics.

The most interesting results concern the comparison between the different dimensions that highlight how customer care and vehicles offered are the most critical aspects of the service.

The first dimension is *Service Delivery* composed of four different items: ease of booking, vehicle availability, car locating, car pickup/car return. The data show a higher satisfaction with the booking system (mean score 8.19, SD 1.68). 46.4% assess the service as being excellent with scores between 9 and 10. The pickup/return system (mean 7.79, SD 1.71) and the ease of locating the car system (mean 7.45, SD 1.91) registred a lower leve of satisfaction. Vehicle availability is the item with the lowest satisfaction level, having an average below the sufficiency level, but also with a higher level of variability in the distribution of scores (mean 5.50, standard deviation 2.24, and only 4.9% who consider it to be excellent and expressing a score between 9 and 10). The criticality of this item is also reported by another question in our survey: about 77% of respondents say they often do not find a car available. Considering this feature of the service, there are no significant differences between the different user profiles, where the percentage of satisfied (which expresses a score above sufficiency) is, in any case, between 80 and 83%.

The second dimension analysed satisfaction with the *Vehicles*. This is the dimension that registers the lowest value of satisfaction, albeit with ratings very differentiated with respect to the different items taken into account: onboard equipment, maintenance and cleaning, and models available. Onboard equipment, comparative to other items in the dimension analysed, records a slightly higher satisfaction level (average 7.31, standard deviation 1.93, but only 25% of respondents expressed high satisfaction ratings between 9 and 10). Maintenance and cleaning of vehicles (mean 6.71, SD 1.97) is lower, but the most critical item is the type of vehicle offered (average 6.32, standard deviation 2.50 with 19% of high satisfaction ratings between 9 and 10). Again, there are no significant differences with respect to the user profile, with the exception of a slight and comprehensible greater presence of dissatisfied among *Flexible Moving Families.*

The second dimension is *Affordability and Sustainability* of the service, divided into four items: transparency of price and service conditions, method of payment, cost of the service and environmental sustainability. The method of payment is the item that records the highest level of satisfaction (mean 8.28, standard deviation 1.74, where just over 50% expressed great reviews between 9 and 10). The level of satisfaction on sustainability follows, albeit at a distance from the previous one and with a higher variability (average 7.21, standard deviation 2.12). However, the feedback on the other two items registred a lower level of satisfaction: transparency of price and service conditions (mean 7.01, SD 2.30), but mostly the cost of the service (mean 5.52, SD 2.26). Only 5.3% expressed very high satisfaction (between 9 and 10) with respect to this last item. This result confirms the perceived value of the service which emerged in another question: 66% of the sample considers the cost as adequate but over one-third (31%) complain that it is too expensive. In this case, the least satisfied are *City Users* (about 5% compared to the other two) because they are the ones that use the service most and are likely to expect a more rewarding price system for intensive users.

The last dimension is the *Customer Care* service. In this area, the courtesy of staff is the item that has the highest level of satisfaction with 30.7% of the highest valuations (9–10) (mean 7.39, SD 2.13). The quality and timeliness of assistance for vehicles follow (mean 6.58, standard deviation 2.35). The remaining two dimensions—the possibility of expressing a complaint (average 6.01, standard deviation 2.61) or suggest a proposal (average 5.69, standard deviation 2.59)—are the most critical ones. These two components are substantially complementary in the perspective of customer relationship management, since the possibility of combining voice and the creative effort of clients are increasingly important in service management in terms of perceived value and customer loyalty. In this case, the least satisfied are the more educated Smart Workers who also use the service for professional reasons and, therefore, have higher expectations of a service *surplus*: unsatisfied users total more than 44% when compared to 40% of *City Users* or 37% of *Flexible Moving Families.*

In order to explore these critical issues, we analysed the content of the free proposals/comments section included in our questionnaire.

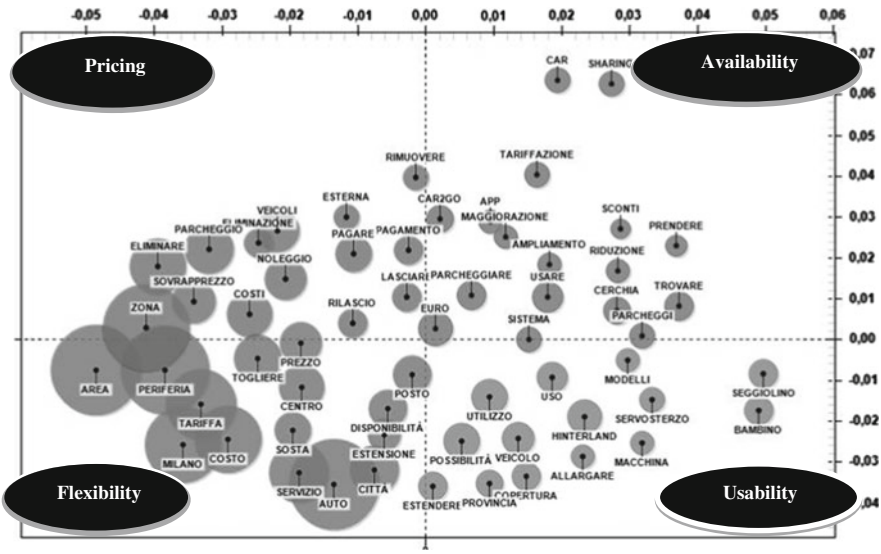

Fig. 6 Thematic map co-occurrence of improvements suggested by car2go users

The occurrence of words such as periphery (135), cost (102), delete (74) and surcharge (49) explains the lower scores in relation to the *Affordability and Sustainability* dimension. Going into further detail in the analysis of the other proposals for improvement noted by users, we also carried out a co-occurrences analysis, reconstructing the thematic map (Fig. 6) of clients' proposals and identifying four possible areas for improvement:

(a) *Flexibility*: users want a more flexible service through a redefinition of the boundaries between the centre and the peripheries, extending the central area in order to encourage a more extensive use of the service, especially by those who live just outside the core centre of Milan.
(b) *Pricing*: the users highlighted the question of tariffs and surcharges, linking it to the issue of flexibility and parking areas. At the same time, they ask for a reward system for all the frequent users or the most virtuous or those with a collaborative attitude (leaving the interior clean, providing fuel, etc.), penalising instead those who are obstructing the "sharing" process, for example those who park the car in a private and inaccessible courtyard.
(c) *Availability*: this requires a larger availability of cars and the possibility of free parking zones.
(d) *Usability*: improving the comfort on board with additional services (child seat, towel for those who transport animals, power steering, etc.) or providing a larger variety of vehicles in order to satisfy all the potential mobility problems and needs of clients.

In the areas for improvement analysis, it seems that availability and pricing are the most relevant issues: more than 69.3% proposed increasing the number of available vehicles, and 56% want more promotions and offers. Some users would also prefer a possible modular rate that considers the number of passengers (41%). The opportunity to develop strong partnerships with public transport services (47.6%) is also strongly welcomed. The potential complementarity is stressed by users who asked for some possible incentives: 51% propose a discount for those who already have a public transport subscription, and 66% suggest introducing some form of economic incentive for car-sharing users like the one provided in Paris for those who use a bicycle to move around the city.

In conclusion, it can be said that the car-sharing service generally generates a high level of satisfaction among its users who particularly appreciate the innovative mode of delivery, enjoyment, its flexibility and convenience. The price is not a critical factor, probably also due to the medium-high social profile of users. However, *City Users* are pushing for a more customisable pricing model that can enhance and reward those who use it more often. Conversely, *Flexible Moving Families* are more interested in being able to use different types of vehicles (even larger and more comfortable to travel in with more people) and with special equipment that meets their needs (for babies or animals). Finally, *Smart Workers* are much more attentive to service add-ons requesting more assistance and customer care.

6 Conclusive Remarks

The conducted analysis shows that car sharing is a phenomenon that could play a strategic role in urban mobility governance. Although data indicate that interest for this service is growing, the National Observatory (2016) estimates that the weight of this practice is still less than 0.3% in the overall mobility market. In large cities like Milan, these numbers are growing and almost reach 0.6%. However, the situation may be quick to change and the car-sharing service could be destined to be more than just a niche product. Perhaps, current data do not suggest that car sharing is destined to become the third dominant mobility mode in society (Frenken 2013) after the private car and the public means of transport, but the increasing returns and number of new users could make car sharing more attractive on the supply side, by lowering costs and widening the variety of shared vehicles. In a sort of self-reinforcing process, it will increase its own dissemination, also creating a new style trend, especially among young people, where using the car less is a new way of standing out (Davis and Dutzik 2012).

The analysis of user profiles highlights how these forms of mobility are developing among specific categories of consumers: mainly men, young, employed and higher educated. As regards the rest of the citizens, these services remain inaccessible due to the absence of an adequate economic and cultural capital. This implies that innovative urban mobility is not only the result of a political choice in

terms of physical infrastructure, or simply in the variety and complementarity of transport options, but also requires working on inclusiveness and the socio-cognitive factors of mobility.

Economic and cultural accessibility to the shared mobility system is a fundamental issue that could inspire specific public policies: educational programmes for digital literacy among adults and senior citizens, aimed mainly at ensuring access to collaborative and sharing markets; the elimination of extra charging in non-central areas; the provision of reduced rates for car-sharing services for socially vulnerable categories of users; fostering the involvement of companies and employers to promote corporate car-sharing or carpooling programmes; even promoting new forms of peer2peer car sharing, which is less developed in Italy when compared to other markets such as Germany or the UK.

Looking at mobility management and urban governance, the expansion of the car-sharing system clearly emerges from the ability to integrate it within the traditional urban and suburban transport system, promoting intermodality in an integrative and more complementary logic rather than a competitive one. Shared mobility, thanks to its flexibility, is able to perfectly fill the mobility "gaps" that develop through the two main means of transport used: the private car and public transport. Possible measures need to be developed to promote a complementarity between car sharing and this other two means of transport: covering areas and times when the public service is most lacking, the provision of forms of integrated subscriptions; and, agreements with garage networks or parking services. Moreover, other forms of integration can also develop between the different forms of shared mobility: from bike sharing to car pooling, from ridesourcing to the micro-transit, etc.

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The Role of European Institutions in Promoting Decent Work in the "Collaborative Economy"

Antonio Aloisi

Abstract This chapter aims at discussing the European approach to regulating the so-called "collaborative economy", by looking at the main legislative initiatives regarding this set of fast-growing digital companies. Despite the potential efficiencies and benefits for customers, more recently, a counter-narrative has started revealing the "broken promise" of managing a contingent workforce mobilised on a "just in time" and "just in case" basis. The second section briefly describes the "collaborative economy" landscape and the dissemination of the heterogeneous category of "non-standard forms of employment" in the European scenario. The third section discusses the *Uber* case, the most visible symptom of a consolidated tendency towards fragmentation of the once solid relationship between the worker and the employing entity. In this respect, a recent ruling by the European Court of Justice on the nature of the service provided by the "transport platform" is analysed in depth. The fourth section investigates the European communications and resolutions which adapt the current legal framework and provide guidelines for regulating work in the collaborative economy, namely the Communication on the European agenda for the collaborative economy, the European Pillar of Social Rights, and other Parliamentary initiatives. The study is based on a theoretical and descriptive methodology. This chapter concludes by recommending a cautious regulatory approach. It has been highlighted that many online platforms are still in their business "infancy", and experts genuinely do not know how they will develop. Consequently, legislative headlong rushes may end up crystallising the present state of the art, thus hindering "peripheral" entrepreneurial initiatives and blocking innovation. Surgical regulatory interventions shall help platform companies to adjust and improve their business model, in order to enter a new phase of "shared social responsibility".

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1 Introduction

The ride-hailing company *Uber* and other labour platforms such as *Deliveroo* and *UpWork* represent an emblematic prototype of broader trends that are reshaping the world of work. These trends include the casualisation and flexibilisation of employment relationships, the fierce global competition, the expansion of the service-based sector at the expense of the manufacturing sector, the rise of precariousness, and the fragmentation of the traditional workplace (Collins 1990; Weil 2014).

Indeed, the number of entrepreneurial initiatives adopting 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 work on-demand are threatening secure employment relationships and jeopardising workers' rights. Such a perspective is of the utmost importance: for the purposes of this short essay, the emphasis will be put on the "professionalised" segment of the collaborative economy (Codagnone et al. 2016b), bearing in mind that the original scheme "*has progressed from a community practice into a profitable business model*" (Böckmann 2013; Hatzopoulos and Roma 2017). Despite the potential efficiencies and benefits for customers, more recently, a counter-narrative has started revealing the "broken promise" of managing a contingent workforce mobilised on a "just in time" and "just in case" basis (De Stefano 2016).

In order to evaluate the European approach to regulating the so-called collaborative economy, it is crucial to look at legislative communications, resolutions, proposals and decisions regarding this set of fast-growing digital companies. Accordingly, the second section of this article will briefly describe the "collaborative economy" landscape and the dissemination of the amalgamated category of "non-standard forms of employment" in the European scenario (ILO 2016). An assessment of its dimensions will be carried out after providing a consolidated terminology aimed at apprehending a socio-economic phenomenon under constant mutation. The study is based on a theoretical and descriptive methodology.

Arguably appealing, this apparently new shift also relies on more complex and up-and-coming societal values, such as trust between strangers and cooperation between neighbours. While *Uber* (portrayed in section three) is currently at the centre of an intricate regulatory challenge (Prassl 2017), the crowd-based economy seems to be here to stay. That is why lawyers, practitioners and lawmakers should concentrate on how the (social) level playing field can be restored or achieved. In this respect, it might be interesting to see how far the Court of Justice of the European Union has gone with the preliminary ruling exercised by a Spanish commercial tribunal on the nature of the service provided by *Uber*.

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. Thus, the fourth section of this article will analyse European initiatives aimed at adapting the current legal system and providing guidelines for regulating work in the collaborative economy. First and foremost, we will focus on the European Communication on Collaborative Economy (356/2016) which has set a range of factors in order to distinguish professional services from "true-sharing" or voluntarist activities (Cherry and Aloisi 2017).

Afterwards, this article will sketch out the main contents of the European Pillar of Social Rights, issued at the beginning of 2017, after an engaging consultation. Although the subsidiarity principle still plays a major role within the employment field, the European Commission is trying to extend rights and protections to all new work patterns, irrespective of their legal form, by means of a social package to be defined precisely. Still on the same subject, the parliamentary efforts will be reviewed critically.

This chapter concludes by recommending a cautious regulatory approach. It has been highlighted that many online platforms are still in their business "infancy", and we genuinely do not know how they will develop. Consequently, legislative headlong rushes may end up crystallising the present state of the art, thus hindering "peripheral" entrepreneurial initiatives and blocking innovation. Having decided how to treat platforms whose influence and command on the ultimate provider is intense, "surgical" regulatory interventions shall help the collaborative economy companies to adjust and improve their heterogeneous business model, building a new phase of "shared social responsibility" (Das Acevedo 2016).

2 An Umbrella Definition for Work in the "Collaborative Economy"

Buzzwords never come alone. Hence, terms such as "sharing economy", "collaborative economy", "platform economy" and "gig-economy" could be used interchangeably, underestimating the nuances of meaning, if any. Furthermore, it should be noted that the vocabulary employed by the main operators misrepresent the exchange of labour that lies at the very heart of these socio-economic patterns: "gigs", "rides", "tasks", "favours" are elusive euphemisms in lieu of "jobs", aimed at conveying a sense of non-remunerated activities and obscuring the reality of underlying arrangements (Butler 2017). Nevertheless, while it is hard to retrace a homogeneous model among platforms classified under this comprehensive label, an autonomous archetype can be described without fear of contradiction. In doing so, similarities will be over-represented at the expense of divergencies. The fact is that

each feature may entail several legal implications and would deserve to be analysed in depth, but due to space constraints not all could be included.

To cut to the chase, and renouncing to the mere ambition of crafting a monolithic definition, a far-reaching notion of collaborative economy could be constructed by borrowing the European Commission's definition which brings platforms at the core of the debate on the future of work:

> Business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods and services often provided by private individuals.

It should quickly become apparent, though, that the original altruistic aspiration has made room for purely commercial arrangements. Thus, the economic actors involved in this subset of transactions are: (i) providers (they can be private individuals—peers—or professional services providers); (ii) users (they can be individuals, families or businesses); and (iii) platforms that connect them and exercise a certain degree of "intrusion" on the material execution, as will demonstrated at a later stage (Smorto 2017). For the purpose of this essay, the above-mentioned formula has to be integrated by zooming in on those platforms:

> (1) that work as digital marketplaces for non-standard and contingent work; (2) where services of various nature are produced using preponderantly the labour factor (as opposed to selling goods or renting property or a car); (3) where labour (i.e. the produced services) is exchanged for money; (4) where the matching is digitally mediated and administered although performance and delivery of labour can be electronically transmitted or be physical; (5) where the allocation of labour and money is determined by a collection of buyers and sellers operating within a price system. (Codagnone et al. 2016a)

As this topic is going viral, it is worth understanding boundaries and set a reasoned perimeter both for academic and regulatory purposes. However, at the moment, a case-by-case assessment rather than a one-size-fits-all approach is necessary, especially when it comes to dealing with unresolved legal dilemmas regarding the demarcation of the relevant market, the classification of workers and the nature of the service provided by online intermediaries, just to list a few.

2.1 Crowdsourcing and on-Demand Work

Although the array of non-standard forms of employment is rich and varied, under this heading, we first pay special attention to "crowdwork" and "on-demand work", alternative (and flexible) working arrangements facilitated by online intermediaries. Legal scholarship tends to "*focus separately* [...] *on online and offline workers, because their places of work (remote versus face-to-face) and relationships with clients (telemediated versus direct) create very different patterns of work, exposing them to different risks*" (Huws et al. 2016)

In particular, crowdwork (or "crowdsourcing") includes services delivered remotely (i.e. over the Internet), encompassing different varieties of activities,

routine (so-called click work) as well as creative and cognitive ones, such as conceiving marketing campaigns or editing long-form journalistic or academic articles. The list of common performances, also labelled as "human intelligence tasks", is rather long, ranging "*from data entry and admin work over graphic design and coding to legal and business consulting*" (OECD 2015). The model consists in breaking down a complex task into its smallest constituent parts and offering each of them to an always available, globally dispersed labour force.

Platforms conceived in this way may propose new opportunities to mobility-impaired professionals, stay-at-home-parents or highly educated and previously unemployed married women with children. Empirical findings are in line with these assumptions. Online intermediaries "employ" a very large contingent workforce, thus reshaping the twentieth-century notion of firm, thanks to lower transactions costs: this manner of arranging a digital infrastructure results in the "pulverisation" of the stable employment relationship.

At the same time, operators do not repudiate the classical hierarchical structure in the management of the relevant relationships, as they exert directive, control and disciplinary prerogatives of certain intensity by means of algorithmic governance, pervasive surveillance, rating system and quality standards (Calo and Rosenblat 2017). Platforms usually reserve the right to reject the final deliverable with no justification, retaining it without paying for the service. They take screenshots of the provider's monitor thanks to special software specialised in remote real-time surveillance. In order to monitor the worker's performance, they may assign "control" tasks to double check the quality of the service.

These "human cloud platforms" are accused of channelling *artificial* "artificial intelligence" (The Economist 2006), as this sort of task is commonly perceived as served by obscure algorithms while, on the contrary, humans are the most suitable "machine" when it comes to labelling items, transcribing audios, editing documents, interacting with costumers, recognising irony and detecting obscene contents. This, in turn, results in workers commonly paid a low rate of pay and forced to brag and beg to secure work.

On-demand work via platforms refers to services delivered materially (mostly performed on a local basis, at the household's premises), such as accommodation, transportation, delivery, maintenance and handyman, cleaning or personal services. In this case, "traditional" tasks are channelled through virtual networks that benefit from digital device penetration (based on effective geo-location systems, ubiquitous connections and online payments).

The common narrative describes such jobs as side-activities for young students or unemployed people—this has been proven to be incorrect or, at least, imprecise (OECD 2016a). On the contrary, under the veil of enhanced flexibility, stress and unpaid waiting time are the rule (Berg (2016), workers spend 18 min of unpaid work for every hour worked and paid). For instance, cycle couriers have to wear a commercial uniform, use their own vehicle, show up in a hotspot, then log onto the app from their smartphone and deliver fresh meals from a restaurant to the customer's address as quickly as possible. They are paid on piecework or, more rarely, an hourly basis.

Needless to say, none of the protections due to employees (subordinate workers) is guaranteed: overtime compensation, paid sick or maternity leave, compensation for injuries or health insurance. In addition to this, costs associated with equipment, maintenance and repairs are at the provider's own expense: no reimbursements for expenses are due. This is feasible since in their "participation agreement" (i.e. non-negotiable contract) platforms specify that the worker is performing his duty as an independent contractor. The most common clause in these "click-wrap agreements" points out that providers use the platform at their own risk.[1] Gig-economy platforms are based on an inescapable duty of loyalty which "blocks" workers in a system with scarce possibility of jumping from an app to a rival one due to high switching costs. In addition to this, workers' accounts may be deactivated, excluding them from the platform with no justifications.

Moving on to other issues, it must be noted that, undoubtedly, the impact of "*platformisation*" in many sectors can be appreciated from a consumerist point of view (Wallsten 2015). According to studies (PricewaterhouseCoopers 2015), consumers welcome the sharing economy because of lower prices, more choice, a sense of community and greater accessibility. If anything, the volume and speed of this profound transformation should warn of the unprecedented effects on the social fabric. Underestimating the fact that most labour-related, fiscal and social security costs are unpaid is tantamount to ignoring a ticking bomb. Nowadays, it seems that "*commercial* "*sharing*" *platforms operate in an institutional vacuum and stand to some extent "above the law*" (Codagnone et al. 2016a) especially when it comes to the way "*producers*" are treated (Bruns 2009).

Literature and journalistic investigations have striven to demonstrate the "dark side" of the sharing economy, maintaining that digital platforms' prerogatives involve: persistent monitoring power, unilateral arrangement of terms and conditions and deactivation privileges. These inquiries have probably diminished the allure of these meant to be independent positions. In considering the background, scholarship has traced three main reasons explaining the rise of the contingent workforce: (i) the need to cope with short-run fluctuations in the demand for goods and services, (ii) the desire to reduce labour costs, (iii) the urgency to meet market pressures on the short-term result and efficiency (Dokka et al. 2015; Eurofound 2015).

The last few months have witnessed the exponential rise of platforms. As for the dimensions of the phenomenon, the value of the collaborative economy in the EU varies from survey to survey, from report to report. It has to be acknowledged that, despite the unstoppable collection of data, it is hard to overcome many intrinsic problems such as the distinction between active and non-active accounts or the use of multiple identities to register on different platforms.

In the absence of official data, we may refer to few consistent, systematic or complementary appraisals. We could describe this group of workers as a subset of

[1]See, for example, Amazon Mechanical Turk's Participation Agreement: https://www.mturk.com/mturk/conditionsofuse.

"alternative work arrangement" (Eurofound 2015), estimated at around 17% of the workforce in 2015. According to more generous estimates, the value of the collaborative economy in Europe exceeds €20 billion (Geron 2013). A very detailed document prepared by PwC for the European Commission (DG GROW)[2] finds that platform economy amounts to nearly €4 billion in revenues and has intermediated €28 billion of transactions (85% of this value is gained by the provider) (Vaughan and Daveio 2016). Yet, participation in the collaborative economy is "*relatively small—but growing*": only 5% of European consumers have participated in this framework, making no more than €1000 (the median of earning stands at around €300). According to a report commissioned by the European Commission (De Groen and Maselli 2015; Harris and Krueger 2015), there would be around 100,000 active workers in the European collaborative economy, representing 0.05% of the total workforce. Of these platform workers, more than 6 out of 100 shall be accounted for as *Uber* drivers. In considering the impact on the labour market, the same paper warns to also take into account the number of jobs that may be or have been lost because of the emergence of collaborative schemes.

What is more, it is contentious whether contracts in the collaborative economy are entered into in order to alleviate the high rate of unemployment or rather because of the total absence of more stable and permanent alternatives. In any case, surveys and reports have demonstrated how online platforms are not generating sufficient income (Fabo et al. 2017). If that should also be the case in future, there could be the risk of platforms acting as brokers for poor and precarious work, rather than for creating labour opportunities. Accordingly, the following section will look into the implications of the sustained growth of this promising subgroup of alternative working arrangements, by taking the *Uber*'s example as a role model to describe the vertical disintegration (or, even better, "*fissuring*") of the traditional structure of the firm.

Available research reveals pervasive directives, reinforced surveillance, constant assessment, arbitrary disciplinary action and very little or no margin in deciding how to complete a task. The model does not contain any entitlement such as overtime, paid holiday leave, maternity leave, sickness payments and statutory minimum wages. Furthermore, workers are excluded from fundamental principles and rights at work such as freedom of association, collective bargaining or protection against discrimination. As a result, advantages such as job market activation, enhanced flexibility and frictionless mobility are coupled with harsh working conditions, income insecurity, less work-related benefits.

[2]The report defines 5 key sectors (peer-to-peer accommodation, peer-to-peer transportation, on-demand household services, on-demand professional services, collaborative finance). According to the authors, there are 275 collaborative economy platforms in 9 member states (Belgium, France, Germany, Italy, Poland, Spain, Sweden, The Netherlands, and the UK).

3 How *Uber* May Drive the Collaborative Economy Crazy

Uber embodies a "disruptive" and controversial force in many cities, where high population density and the inefficiencies of public urban mobility have paved the way to a new competitive player, currently favoured by the apparent "obsolescence" of some sector-specific rules and demonised by outraged reactions of incumbents. The transport sector is a test bench where observing how the initiatives aimed at fixing market failures could result in hindering competition, innovation and consumer choice. Also, *Uber* represents the most visible symptom of a consolidated tendency towards fragmentation between a worker and the employing entity, as described in the previous paragraph. One of its main competitive advantages stems from the fact that drivers do not enjoy full employment rights, being questionably labelled as "independent contractors".

While it is contentious as to whether its template may be successfully translated into other sectors on account of the uniqueness of transport networks, dozens of start-ups have been established and announced to be the "*Uber of something*". After rapid success and global expansion, the platform is progressively getting into the eye of the cyclone (De Franceschi 2016), since it allegedly does not comply with requirements that traditional taxi companies have to meet in order to operate. The European approach to regulating *Uber*'s business varies from state to state: the service has been directly or indirectly banned in Belgium, Denmark, France, Germany, Italy, Portugal and Spain. It cannot be denied that *Uber* has little in common with authentic collaborative practices (some commentators have proposed a different definition: "*crowd-based capitalism*"). Indeed, the company has become a dominant synonym for the decline of labour-intensive industries, and hence for "reinventing" jobs.

The eponymous car-hailing start-up connects passengers to (amateur or professional) drivers offering rides thanks to a mobile app, which can localise their respective positions and estimate the fare for the trip, thanks to a smartphone equipped with the application. The rider can observe how long the driver would take to show up and pick her up at his location, while the driver cannot refuse unprofitable rides since she ignores the destination and the fare in advance. When the ride is over, the customer pays the price automatically via electronic card and can evaluate the "chauffeur" by using a 5-star rating system which affects whether the worker receives further work. Both the driver and the rider are subject to rating.

Uber retains between 20 and 30% of the fare as a commission payment but the price of the service cannot be negotiated since it is set automatically. A tip is expressly forbidden (but drivers are devising creative ways of asking for it). From the outside, this is the general scheme—something could change among different services (from *UberPop*, private citizens not professionally licensed offering rides to *UberX*, professional drivers holding a "medallion", i.e. a licence, and driving Private Hire Vehicles).

The "Term of Service" configures and regulates the relationship between *Uber* and its users (drivers and passengers) as well as between the users. Perspective

Uber drivers (or "partners", a least according to the internal "jargon") must apply on the *Uber* website and pass a quick practical test in order to access the platform. This procedure encompasses a driver's licence check—the vehicle needs to be of a certain type and less than 10 years old—and control of the car registration number and insurance. According to local special rules, drivers may be subject to a city knowledge test. Moreover, just to clarify how penetrating the role of the company is, the "driver booklet" invites the driver to wear smart clothes, it suggests keeping the radio volume low or to play classy music.[3] The driver has to pay for all running expenses (petrol, insurance, taxes) and the car, and assumes all responsibility should an accident occur. *Uber* offers cut-price insurance to all its drivers (Aloisi 2016).

Suffice it to observe here that flexibility is merely virtual and does not work in the drivers' favour since many of them depend on the job and are tied to the platform by other means, such as reputation, data, loans for a lease or a new purchase (Todolí-Signes 2017). Service providers are not in control of their time. In fact, to keep the personal rating over the minimum threshold (and, in the words of *Uber*'s terms, "*if the average rating still falls below the minimum after multiple notifications, you will lose access to your account*"), a driver needs to satisfy the customer, accept a certain number of rides and stay available online at least a number of hours per week. In case of suspension, specific rehabilitation programmes are planned, thus confirming the hypothesis of the power of command exerted over drivers.

At first glance, the *Uber* app performs different activities: (i) directly, efficiently and quickly matching riders to passengers, (ii) real-time tracking of individuals thanks to geo-localisation capabilities, (iii) calculation and fixing of prices, taking into account the distance and time, and arbitrarily implementing surge pricing techniques in order to engage drivers and to maximise profits on the occasion of demand peaks (Cachon et al. 2016), (iv) implementing standards of conduct allowing the two parts to rate each other at the end of the trip, (v) promoting "improvement courses" (i.e. training) when the rate goes below a certain threshold. In view of the above, many legal scholars have concluded that "*such conditions suggest a level of control that goes beyond the mere provision of an introduction between two independent parties, and which resemble closely a traditional employment relationship*" (EU-OSHA 2015; Huws et al. 2016).

3.1 The Legal Disputes Before the Court of Justice of the European Union and Local Tribunals

Last December, the Court of Justice of the European Union (CJEU) ruled that an intermediation service such as that *UberPop* must be regarded as *"a service in the*

[3]O'Connor v. Uber Technologies, Inc., No C-13-3826 EMC, 2015.

field of transport" rather than an information society service. In particular, the Court took the view that the service provided by the platform is more than a matching activity connecting, by means of a digital app, a nonprofessional driver with a private individual wishing to make "urban journeys". Indeed, the provider of that lucrative intermediation service simultaneously organises and offers urban transport services.[4] In C-434/15 *Asociación Profesional Elite Taxi v Uber Systems Spain* (2014) ECLI:EU:C:2017:981 the Court observed that *"*Uber *determines at least the maximum fare by means of the eponymous application, that the company receives that amount from the client before paying part of it to the non-professional driver of the vehicle, and that it exercises a certain control over the quality of the vehicles, the drivers and their conduct, which can, in some circumstances, result in their exclusion"*. The decision by the Luxembourg court defined the nature of the services provided by *Uber* and, consequently, the applicable regulation. Consequently, such a service must be excluded from the scope of the freedom to provide services in general as well as the directive on services in the internal market and the directive on electronic commerce (Geradin 2016). The repercussions of this ruling are far-reaching.

Taking the time to step back, a Catalan trade association named *Associación Profesional Élite* filed a lawsuit against *Uber System Spain* alleging unfair competition practices. To put it bluntly, representatives of the incumbent taxi companies wondered why *Uber* supplies its services without authorisation from the Spanish Transport Authorities. Traditional taxi companies had no interest in justifying an exemption from licensing requirements.

Conversely, the ride-hailing platform maintained to be a mere matchmaker (like an "*eBay for gigs*"), providing a technological intermediation service which connects riders to drivers, through its application. Based on this viewpoint, the service should be covered by law provisions designed to ensure the free movement of services in the EU (E-commerce Directive, *lex specialis* in relation to the Service Directive). In this case, pursuant to Article 4, no prior authorisations or similar requirements are due and the "internal market clause" applies (Art. 3[2]).

Put differently, can *Uber* claim to fall under the scope of art. 49 (freedom of establishment) and art. 56 (freedom of movement for services)? Is *Uber* under the scope of the Service and/or E-Commerce Directive? Presumably, if that is the case, the service shall be subject to no prior authorisation in the providers' home State, and other Member states shall be prevented from raising any obstacles. A State may impose an authorisation regime, diverging from the liberalised system, if public policy, public health, public security and consumer protection make this a necessity.

Without going into the details and putting aside the intricate corporate structure, this case opposes two conflicting logics. If the answer of the CJEU was that *Uber* is

[4]Case C-434/15: Request for a preliminary ruling from the Juzgado Mercantil No 3 de Barcelona (Spain) 7 August 2015 – Associación Profesional Élite v Uber System Spain, S. L., OJ 2015, C. 363/21.

running an "information society service" ("*any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services*", Art. 1.2 of Directive 98/34/EC as amended by Directive 98/48/EC), its regulation would be limited to protecting objectives of public interest and proportionate to the fulfilment of the same objectives. Nevertheless, this interpretation does not perfectly fit *Uber*, while it is appropriate for authentic digital intermediaries through electronic means, e.g. platforms which do not exert any managerial prerogative on the provision of the underlying service.

Such a service must be excluded from the scope of the freedom to provide services in general as well as the directive on services in the internal market and the directive on electronic commerce. Thus, the ride-hailing company must comply with rules governing traditional taxi association at the national level. Concomitantly, Member States might use this window of opportunity to update obsolete rules on urban public transport.

While many analyses have covered the issue from the perspective of competition law, the *Uber* case also raises so much attention on allegedly circumventing labour laws. This is why one may propose a two-stage reading in conjunction with a landmark case ruled by a British Employment Tribunal.[5] In the "landmark judgment" *Aslam v Uber Bv,* the court focused on the "practical realities" of the relationship between *Uber* and its drivers.

By conceptualising the conclusions, *Uber* drivers could be reclassified as workers (eligible for minimum wage, sick leave and paid holiday provisions) instead of independent contractor, as maintained by the company in the "terms of service" (Sachs 2016).

In particular, the British court, denying the fact that the company exercises a mere enabling activity of interactions between two opposite groups of users, emphasised that *Uber* does not provide the opportunity for personally negotiating the content of the obligation, while tasks are performed personally, with no possibility of being replaced temporarily ("*the notion* [...] *is to our minds faintly ridiculous*"). In line with these assertions, let us quote some of the main arguments:

> (1) The contradiction in the Rider Terms between the fact that ULL purports to be the drivers' agent and its assertion of "sole and absolute discretion" to accept or decline bookings. (2) The fact that Uber interviews and recruits drivers. (3) The fact that Uber controls the key information (in particular the passenger's surname, contact details and intended destination) and excludes the driver from it. (4) The fact that Uber requires drivers to accept trips and/or not to cancel trips, and enforces the requirement by logging off drivers who breach those requirements. (5) The fact that Uber sets the (default) route and the driver departs from it at his peril. (6) The fact that UBV fixes the fare and the driver cannot agree a higher sum with the passenger. The supposed freedom to agree a lower fare is obviously nugatory.) (7) The fact that Uber imposes numerous conditions on drivers (such as the limited choice of acceptable vehicles), instructs drivers as to how to do their work and, in numerous ways, controls them in the performance of their duties. (8) The fact that Uber subjects drivers through the rating system to what amounts to a performance management/

[5]Case 2202551/2015 & others, *Aslam, Farrar & Ors* v. *Uber BV & Ors,* judgement of 28 Oct. 2016.

> disciplinary procedure. (9) The fact that Uber determines issues about rebates, sometimes without even involving the driver whose remuneration is liable to be affected. (10) The guaranteed earnings schemes (albeit now discontinued). (11) The fact that Uber accepts the risk of loss which, if the drivers were genuinely in business on their own account, would fall upon them. (12) The fact that Uber handles complaints by passengers, including complaints about the driver, (13) The fact that Uber reserves the power to amend the drivers' terms unilaterally.

More recently, Appeal Tribunal fully upheld Employment Tribunal's findings. If this trend continues, and if the multifactorial analysis defined in the Communication on the Collaborative Economy should be applied in a strict sense, there might be a "knock-on effect" in Europe.

This assumption seems to be grounded, also in the light of Advocate General Szupunar's opinion. Indeed, it must be said that the response of the Court of Justice is based on an assessment of the relationship between the platforms and its drivers. In May, the Advocate General issued a non-binding opinion stating that the service offered by *Uber* is a "composite" one since it includes two main components: the one provided by electronic means, and the other part essentially consisting in urban transport.

It is worth emphasising Szupunar's analysis: two requirements need to be met for a composite service to be classified as falling within the concept of "information and society service", thus benefiting from liberalisation. Firstly, the "material" activity has to be economically independent of the service rendered by electronic means (such as platforms for the purchase of airline tickets or hotel reservations), secondly, the provider has to supply the service as a whole or to exert a significant influence over the conditions of the electronic service (the prevailing part). The observations of the Advocate General seem to follow settled case law on the intrinsic connection between the two activities, as the digital infrastructure would not exist without rides. Accordingly, *Uber* is not considered to be a mere match-making intermediary (something like a "broker") between drivers and passengers, but rather "*a genuine organiser and operator of urban transport*".

Although the issue relating to workers' classification is extraneous to the subject of the opinion, many of the arguments used could be read in the sense of considering them as employees rather than contractors.

However, it should be noted that many scholars suggest a similar interpretation according to which, platforms like *Uber* "*are directly involved in the provision of the transportation service and are unlikely to qualify as mere providers of online services*" (Hatzopoulos and Roma 2017) due to their conditions on cars, facilities and prices and should therefore be considered a supplier of transportation services. It is also undeniable that this allegation is sufficiently substantiated by the fact that *Uber* creates added value by providing rides and exerting significant indirect control over how drivers perform their jobs (Rosenblat and Stark 2016). Accordingly, demonstrating the intense power of command could be even easier if the platform under scrutiny should offer a tangible service.

4 From Deregulation to Innovation? From Litigation to Regulation?

Rebutting the charge of ill-adapting out-dated legal arsenal and national regulations to this new mode of doing business, starting from 2015, the European institutions developed a framework for (collaborative) online platforms. This journey's milestones are several: after the adoption of the Single Market Strategy in October 2015, the Commission focused its attention on carrying out a public consultation and a valuable Eurobarometer survey.

Finally, two Communications on Online Platforms and the Collaborative Economy were released between May and June 2016. Since the first is rather wide-ranging (it contains principles such as a level playing field for comparable digital services, responsible behaviour of online platforms, transparency, openness and non-discrimination), a hands-on analysis of the Agenda for the Collaborative Economy will be provided.

4.1 The Commission's European Agenda for the Collaborative Economy

Although programmatic, the non-binding guidance on how existing EU law should be applied to the collaborative economy is pretty clear and rather specific, revealing a deep knowledge of the values and concerns at stake. The Communication, built on several "impulse papers", admits the importance of the collaborative economy from a socio-economic perspective, by taking into consideration its growing dimension and its potential contribution in fostering competitiveness and growth.

The Commission emphasises that platforms are already subject to existing EU rules in areas such as competition, consumer protection, protection of personal data and single market freedoms. Compliance with and enforcement of these rules is then crucial in order to restore a level playing field. Also, the European Commission proves to be aware that "*regulatory grey zones are exploited to circumvent rules designed to preserve the public interest*" (p. 2). The document deals with five key issues:

(a) market access requirements and the underlying services;
(b) liability regimes;
(c) protection of users;
(d) labour law and worker classification;
(e) taxation

According to the Commission, the emergence of the collaborative economy is a powerful "stress test" to assess the validity of objectives pursued in existing legislations both towards new and traditional service providers. As for point (a), it needs to be stressed that, under EU law, barriers such as business authorisation,

licensing obligations or minimum standard requirements must be justified by a public interest objective, proportionate to achieve the public interest and non-discriminatory, according to the fundamental freedom of the Treaty and the Services Directive.[6]

Moreover, whereas barriers to entry cannot be eliminated for traditional service providers, the Commission recommends making things easier for participants in the collaborative economy, provided that many activities such as customer reviews are already "sourced out" and may be used to address specific public policy concerns regarding access, quality or safety. Nevertheless, total bans and quantitative restrictions have to be handled as a last resort measure together with administrative procedures, when required, that have to be clear, transparent and simple.

Another cornerstone of the Communication resides in the classification of activities. If the distinction between true and commercial sharing can easily be rooted in the switch between "compensation costs versus remuneration", regulators are constantly asked to distinguish between professionals and individuals who turn to collaborative economy platforms on an occasional basis, when services are provided for free or at a price that barely covers costs. Experts suggest establishing a narrow set of criteria such as the frequency with which a service is rendered, the provider's profit-seeking motive (although reasons behind the commitment should not matter from a legal point of view) and the relevant payment (Petropoulos 2017). Yet the issue is far from being unravelled. Lines between categories are now increasingly tangled (and sometimes this uncertainty seems to be sought deliberately in order to avoid due legal compliance).

In particular, this paragraph focuses on the multilayer analysis drafted by the Commission as regards the offer of the *"underlying service*" as a way to understand which regulative *corpus* should be applied to the platform. According to the 2016 document, if the platform results in the provision of a "real-world" service (i.e. transport, delivery, cleaning and short-term rentals), in addition to an information society service,[7] it could be subject to "*relevant sector-specific regulation, including business authorization and licensing requirements generally applied to service providers*".

The provision of the "underlying service" has to be assessed concretely by considering three key concurring elements: (i) the determination of the price; (ii) the definition of principal contractual terms, other than price; (iii) the ownership of assets used to offer the underlying service. Other criteria may be considered: for example, the fact that the platform incurs the cost and assumes all the risks related to the service or whether an employment relationship exists with the worker performing the particular task. The criteria are not extremely stringent since, for

[6]Directive 2006/123/EC on services in the internal market, O.J. 2006, L. 376/36. This Directive excludes from its scope of application: transportation services, financial services, healthcare services, temporary work agencies and social services.

[7]See Article 1(2) of Directive 98/34/EC as amended by Directive 98/48/EC.

instance, merely assisting the very provider of the underlying service or arranging a rating system does not "*constitute proof of influence and control*".

When most indexes are satisfied, there are robust signals that the collaborative platform exercises a noteworthy influence or control over the provider of the underlying service, thus the platform may be considered as offering much more than the mere intermediation service. To sum up, orchestrating or participating in the underlying service means acting as a service provider, employing providers to perform the offered services and requiring compliance with the sector-specific regulation in force at European and national level. Moreover, if the platform does not merely act as broker or a "notice board", but offers ancillary services, this cannot be read as an index of influence or control over the underlying service.

As for point (d), although labour law is still a national competence, a minimum threshold set by the European Union (the so-called social *aquis*) cannot be ignored. The Commission refers to the notion of worker developed by the Court of Justice ("*... for a certain period of time a person performs services for and under the direction of another person in return for which he receives remuneration*"). The Communication indicates three criteria to be met in order to detect the existence of an employment relationship: (i) the existence of subordination; (ii) the performance of effective duties; (iii) the presence of remuneration.

The clarification of the Commission is relevant to the extent of this analysis: a subordinate relationship can be described as the exercise of the power of direction by the platform, which determines the content of the activity, how the performance is accomplished and the form and quantity of the remuneration. It has to be stressed that management and control on a continuous basis is not decisive, just as limited working hours or a low rate of productivity are not enough to exclude the existence of an employment relationship. What is relevant to this line of reasoning is that an employment relationship can be identified, according to the OECD's assessment, when platform workers have no choice but to follow detailed instructions by the operator, or when the latter utilises customer ratings to control or even dismiss providers.

However, taking a closer look, one may connect this analysis with the previous one on the provision of the underlying service. If so, the existence of an employment relationship would be sufficient to "reclassify" the platform as a provider of the "real-world" service, thus resulting in the subject to sector-specific requirements in a circular way. In the light of this scrutiny, "*Uber is the one most likely to qualify as being based on an employment relationship*" (Hatzopoulos and Roma 2017).

As for the nature of the work and the presence of remuneration, the debate on how to set a threshold for distinguishing between "peers" (or amateur/occasional providers) and professional service providers are still fierce. The European Commission support analysis mentions different elements: annual turnover for transport services, and the frequency of the activity for the accommodation sector (i.e. the services are offered regularly or marginally). A key question to answer in this context is: which threshold would be adequate in which sector to safeguard micro-earners, to reduce possible income tax loss and to protect consumers, while permitting a proper volume of non-professional occupation to prosper?

The Communication concludes advocating an intervention of Member States aimed at "*assessing the adequacy of national employment legislation*" in relation "*to the different needs of workers and self-employed individuals in the digital world as the innovative nature of collaborative business model*" and to "*provide guidance on the applicability of their national employment rules in light of labor patterns in the collaborative economy*" (Cauffman and Smits 2016).

Much could be done by implementing the present rules when suitable and by crafting new solutions when loopholes are authentic.

4.2 The European Pillar of Social Rights and the Parliamentary Resolution on Collaborative Economy

Last April, the European Commission presented its proposal on the European Pillar of Social Rights (hereinafter "EPSR") in two legal forms with identical content: a Commission Recommendation, adopted on the basis of Article 292 TFEU and effective as of that date, and a proposal for an interinstitutional proclamation by the Parliament, the Council and the Commission. To this must be added a Communication, two "staff working documents" and many other papers.

The institutional effort is aimed at building an EPSR achieving the goal of "upward convergence" towards better working and living conditions across the EU thanks to pre-existing initiatives, new legislation and soft law measures. It consists of 20 "rights and principles" grouped under three broad groups of recommendations: (i) equal opportunities and access to the labour market, (ii) fair working conditions and (iii) social protection and inclusion. The second section of the Pillars is more pragmatic and presents four concrete propositions encompassing contracts, wages, information about employment conditions and protection in case of dismissals and social dialogue and involvement of workers.

The document advocates the prevention of *"employment relationships that lead to precarious working conditions"*: abuse of atypical contracts should be prohibited. Moreover, in order to extend social protection to workers with an atypical contract (or status) as a result of more flexible forms of work in an increasingly digitalised economy, the EPSR is launching a consultation with social partners. According to Garben (2017), the ambition of the initiative is *"to provide new and tangible minimum protection and security for workers in atypical employment and for the (dependent) self-employed"*. From a social convergence perspective, the "Pillar package" could contribute to expand the personal scope and increase the level of protection afforded for certain groups of people (workers, unemployed, self-employed and others) who still find themselves on the margins of the job market (Rasnača 2017).

The EPSR, indeed, will require further legislative initiatives in order to raise the pan-European social standards, as both the recommendation and the proclamation

are soft law instruments without legally binding force. This is not necessarily a criticism.

In the meantime, in October, the European Commission issued a proposal to reinforce social standards for workers with ultra-flexible working hours and no regular salary. The first step could be a possible revision of the Written Statement Directive in order to make sure that all EU workers in need of information receive a written and timely confirmation of their working conditions. Underlining that effective improvements are possible, the REFIT evaluation demonstrates how the notification of a written statement to employees is not an excessive burden compared to the benefits it brings, e.g. legal certainty for both parties and fewer litigations.

After publishing an in-depth analysis on the situation of workers in the collaborative economy, last January, the European Parliament adopted a resolution on a European Pillar of Social Rights, including a methodical and progressive reflection on a set of pressing issues that are closely related to the social and economic risks faced by workers in the platform economy. The document calls on an update of existing labour and social standards, demanding a proposal for *"a framework directive on decent working conditions in all forms of employments, extending existing minimum standards to new kinds of employment relationship"*, in the light of *"insufficient protection of working conditions of a growing number of workers, including those in new and non-standard forms of employment"*.[8] Albeit the text does not explicitly refer to the collaborative economy, formulas such as "regardless of the type of contract or employment relationship" seem to be a restrained technicality aimed at including alternative working arrangements within the scope of the EPSR. Accordingly, it must be said that, at least, the European Parliament explicitly bars the way to possible detrimental exemptions for workers in this sector.

A list of rights to be guaranteed to employees and all workers in non-standard forms of employment is provided including equal treatment, health and safety protection, protection during maternity leave, provisions on working time and rest time, work-life balance, access to training, and in-work support for people with disabilities. This initiative could be quite rightly considered to be a significant step forward, aimed at earning Europe a "social triple A", especially if read in connection with the unequivocal reference to the right to adequate information, consultation and information, freedom of associations and representations, collective bargain and collective action. Future enforcement of these provisions may result in an extension of security and social coverage for under-protected workers.

[8]See also Commission Staff Working Document accompanying the Document Consultation Document Second phase consultation of Social Partners under Article 154 TFEU on a possible revision of the Written Statement Directive (Directive 91/533/EEC) in the framework of the European Pillar of Social Rights, p. 10 (providing an overview of the results of the first phase consultation and an analytical background to a second phase consultation of the European social partners on possible legislative action).

At the same time, when it comes to addressing the issue of "work intermediated by digital platform", the document calls for a decisive action aimed at clearly distinguishing workers who are *"genuinely self-employed and those in an employment relationship"*. A particularly striking feature is the reference to "symptomatic" indexes for determining the status, as well as the level of social protection and the identity of the employer. Particular concern has been aroused by the fact that platforms may abuse their dominant positions through improper terms and conditions. Likewise, as stated above, in order to tackle—in the European Parliament's words—*"the spread of socio-economic uncertainty and the deterioration of working conditions for many workers"*, the resolution urges the Commission to reinforce the implementation of already existing directives devoted to precarious employment (i.e. the Fixed-Term Work Directive, the Part-Time Work Directive and the Temporary Agency Work Directive).

At the current stage of the (soft) legislative procedure, it is easier to *"expect an indirect impact of the Pillar in the (revision of the) existing legal* 'acquis'" in the EU social dimension rather than "looking for direct legal consequences arising from the Pillar document(s) itself" (Hendrickx 2017).

Moving on to other issues, it would be interesting to expound on the draft report on a European Agenda for the Collaborative Economy prepared by the Committee on the Internal Market and Consumer Protection, then approved as a Parliamentary Resolution. The relevant aspect, in this case, is the attention paid to the safeguarding of workers' rights, conditions and protections, avoiding social dumping and combatting illegal practices. The Committee also adopts a clear and balanced position on this issue, tackling "the risk that on-demand workers might not enjoy genuine legal protection" (this original version has been amended) but recognising that the collaborative economy *"generates new and interesting entrepreneurial opportunities, jobs and growth, and frequently plays an important role in making the economic system not only more efficient"*.

In June, the European Parliament has called on the Commission *"to publish guidelines on how Union law applies to the various types of platform business models in order, where necessary, to fill regulatory gaps in the area of employment and social security*". According to the European Parliament, in fact, *"certain parts of the collaborative economy are covered by regulation at local and national level"* (Para 14) therefore member States are encouraged to *"step up enforcement of existing legislation"* by recurring to all available tools.[9] Its main demand is to *"to ensure fair working conditions and adequate legal and social protection for all workers in the collaborative economy, regardless of their status"*. The resolution is not binding and, at the time of writing, is still subject to public debate. The Parliament has urged *"the Commission to work together with the Member States to provide further guidelines on laying down effective criteria for distinguishing between peers and professionals, which is crucial for the fair development of the collaborative economy"* (Para 15).

[9]Para. 15.

Hailed as a "landmark moment" for Europe,[10] these initiatives might create an "important political momentum" that must be seized, in times of political disenchantment and distrust. Despite its more exhortatory than mandatory nature, the Pillar deserves a great deal of praise since it marks a new ambitious stage in the process of strengthening the EU social dimension, neglected for a long time. In order to restore the level playing field, the "integrationist logic" could be applied to avoid a downward spiral of reductions in labour standards, thus preventing unfair business competition and delivering new and more effective rights for workers.

5 Towards "Social Responsibility by Design"

The aim of the previous paragraphs was to further elucidate the fact that employment implications of the collaborative economy cannot be underestimated at this stage. As we hope to have demonstrated, the collaborative environment is, simultaneously, a place for experimenting in new forms of investment and a legally uncertain labyrinth. At the same time, the manipulative forces of platforms raise many concerns. The promise of new employment opportunities may turn into a "social race to the bottom" if the "*laissez-faire*" approach should last above and beyond (Fabo et al. 2017).

The second goal of this contribution was to reconcile new forms with old challenges. In this respect, claiming that these models need to be supported or incentivised merely because of their allegedly innovative nature and their increased contribution to the participation of young workers in the labour market seems to be groundless.

On the other hand, the constant trend reveals that collaborative business models may be used to overcome or substitute a stable organisation of the workforce with economically or at least organisationally dependent workers. It has to be said that the standard employment relationship between employer and employee appears to be "under attack", traded with a *smart* new paradigm where users are imaginatively turned into "their own boss" where they can enjoy the rewards—and face the risks—of this opaque situation. Indeed, it would almost appear that the chance to externalise costs associated with direct employment is a powerful driver for the proliferation of such arrangements. Much of this criticism also asks for intervention in fields such as consumer protection (including privacy and data security) and the promotion of public health and safety.

Much could be done by the existing rules in view of new and emerging practices; further research will be required on this specific topic—possibly on a state-by-state and service-by-service basis. In view of the above, analysing the

[10]See EUROPEAN COMMISSION (2017), *Statement of President Juncker on the Proclamation of the European Pillar of Social Rights*, retrieved from http://europa.eu/rapid/press-release_STATEMENT-17-4706_en.htm.

widespread factual complexity of the collaborative economy should be the regulatory authorities' first priority.

In fact, a mere "wait-and-see" approach is costly and risky since each Member State (or even municipality, region or local authority) is tackling the issues arising from this economic segment by using different, sometimes contradictory, tactics (Noto la Diega 2016a). A common frame of reference is much more desirable, while a patchwork of differing legislations may result in an open invitation to legal arbitrage or jurisdiction shopping. In this sense, the European current attitude is perceived as a fair balance between supporting entrepreneurs' confidence and implementing workers' protections.

It goes without saying that a "one-size-fits-all" intervention is unlikely to achieve its regulatory goals effectively. Given the unprecedented scale and scope of the "collaborative transformation", a reckless or "*hastened regulation or deregulation on a weak evidence base is likely to result in unintended consequences rather than achieve the desired objective(s)*" (OECD 2016a). Negotiating a more equilibrated social compact related to social platforms is urgent.

Over the next few years, the number of workers "*piecing together a livelihood from a range of different tasks*" (Huws et al. 2016) could pose a threat to the social fabric, as the precarious employment models developed in these contexts are here to stay. Thus, the enabling role of platforms in creating new and decent job opportunities cannot be hampered. That is why European institutions have to enable a competitive and inclusive playing field where platforms comply with certain obligations with regard to employment rights, putting an end to the constant circumvention of statutory protections afforded to workers classified as employees or, if so, regulations for genuine casual work. Therefore, exploiting the legal arsenal to the maximum is the correct route to ensure the most convenient imbalance between the promotion of innovation and decency of work.

On top of this, having extensive opportunities to design and shape the concrete functioning of their platform, operators must be sensitive to the needs and demands of workers and users, by implementing new features and renovating their embryonic business model (Aloisi et al. 2017).

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From Shared Public Spaces to Public Spaces for Sharing Activities. *#Sharing. Lab Milan + London*

Giovanna Piccinno

Abstract As shown in the previous pages the *phenomenon of sharing* is one of the main ones that will affect the world the most in the coming years. The greater willingness to share was made possible thanks to a change in mentality in people who are more willing to make their private life and their thoughts visible on social networks, with the consequent creation of a collective consciousness and a increase of mutual trust through the act of sharing.

1 Collaborative Consumption and Sharing Activities

New forms of collaborative consumption, often associated with the sharing economy, find applications in different sectors as the private, public and non-profit (Bauewens et al. 2012), and collaborative consumption turns to areas that have previously been of non-collaborative nature. This is the consequence of a different approach and behaviours from social, economical and technological drivers (Owyang et al. 2014).[1] Collaborative consumption takes so place in organized systems or networks, in which participants conduct actual sharing activities, **in the form of renting, lending, trading or bartering, and swapping of goods, services, transportation solutions, space or money and others**.

Indeed, the **rise of the Internet** plays a key role in this process, as it facilitates and keeps facilitating the establishment of communities and Internet-based networks at reduced transaction costs; in times of financial crisis and growing scepticism towards capitalist structures, many consumers are increasingly turning to

[1]Jeremiah Owyang, Alexandra Samuel, Andrew Grenville, *Sharing is the new buying*. Available online: www.web-strategist.com, 2014).

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Research for Development, https://doi.org/10.1007/978-3-319-78099-3_12

alternative forms of sustainable consumption.[2] In addition, **smartphones and mobile apps** allow an even more immediate exchange of information (Bardhi and Eckhardt 2012; Hamari et al. 2013).[3]

For the American business scholar Russel Belk—whose research involves the meanings of possessions, collecting, gift-giving, sharing and materialism and his work is often cultural, visual, qualitative, and interpretative—**collaborative consumption is located between the traditional forms of sharing within a family context and the usual market exchange activities**.[4]

Collaborative consumption might refer also to **business-to-consumer (B2C)** services such as commercial car sharing; it might refer to **consumer-to-consumer (C2C)**, or also to **business-to-business (B2B)**, where sharing happens in the form of redistribution markets or collaborative lifestyles such as accommodation sharing marketplaces, with the latter often being facilitated by an external provider like an online platform (e.g. Airbnb).[5]

The extensive analysis, to which the students attended at the ***Spatial Design Studio #Sharing.Lab Milan + London*** was conducted about apps and Web-services, took this aspect into account.

2 New Pathway to Sustainability

Herald Heinrichs, Professor of Sustainability Politics,[6] observed that despite the success of some initiatives and environmental and sustainability measures in the decision-making process, in both companies and in society, general trends follow an unsustainable path. "...***Especially in the field of production and consumption of goods and services****, environmental sustainability and social equality remain critical challenges. Therefore, new approaches are needed alongside existing*

[2]Rifkin, 2000; Kozinets and Handelman, 2004; Albinsson et al. 2010; Neilson, 2010; Ozanne and Ballantine, 2010; Albinsson and Perera, 2012.

[3]Bardhi F, Eckhardt GM. 2012. Access-based consumption: the case of car sharing. *Journal of Consumer Research* 39: 881–898; Hamari J, Sjöklint M,Ukkonen A. 2013. The sharing economy: why people participate in collaborative consumption. Available online: papers.ssrn.com.

[4]Belk Russel, *You are what you can access: sharing and collaborative consumption online*, in *Journal of Business Research* 67(8), 2014.

[5]Botsman R, Rogers R. 2010. *What's mine is yours—the rise of collaborative consumption*. HarperCollins: NY.

[6]*Herald Heinrichs* , Professor of Sustainability Politics at the Institute for Environmental and Sustainability Communication and the Institut of Sustainability Goverannce at the Leuphana University Lüneburg (De).

strategies and policy instruments. The sharing economy has the potential to provide a new pathway to sustainability—and *trans-disciplinary sustainability science has the opportunity to co-shape and accompany this pathway*"[7] (Heinrichs 2013).

In this sense, our design approach would like to propose—**using *public sharing spaces* for *sharing activities* linked to the *sharing economy***—also a new, more sustainable way. Indeed, it promotes the saving of resources both in terms of use of public space, through the sharing of goods, services and knowledge, furthermore experimenting with systemic constructive technologies able to implement the reuse of materials of the various components of the new spatial devices in other urban contexts, also with different layout configurations.

In one of the first publications studying the sharing phenomenon, *What's mine is yours*, the authors Rachel Botsman and Roo Rogers (2010) differentiated between three features of the sharing economy: *product service systems* (PSS); *redistribution markets*; *collaborative lifestyle*.

Alongside product service systems, such as car-sharing or leasing tools and redistribution markets, from second-hand stores to eBay, they elaborate the idea of collaborative consumption as a new form of peer-to-peer sharing. The concept implies individuals who exchange, redistribute, rent, share and donate information, assets and talents, either organizing themselves or via commercial organization by social media platforms. Different studies have shown that online peer-to-peer sharing comprises different sorts of platforms in various areas of consumption and that today it develops very quickly.

Some scholars believe that today the concept of the sharing economy should not be limited to collaborative peer-to-peer practices (Scholl et al. 2013).[8]

New developments with relevance for sustainability seem to appear especially at the interface between product service systems, **redistribution markets and collaborative consumption**.[9]

As seen in Chap. 3, **as an interior and spatial designer,** we are studying that also the urban **physical spaces**, **public or private**, have to be considered today as new entities involved in the sharing phenomena, **as able to support along with their environmental**, **functional and aesthetic characteristics the sharing activities**. Altogether, these services, despite their differences, have common languages, values and operative modes. They all favour goods access and usage instead of property, exchange instead of purchase, trust instead of distrust and a short distribution chain as an alternative to the long one.

[7]Abstract from > http://www.ingentaconnect.com/content/oekom/gaia/2013/00000022/00000004/art00005.

[8]Scholl,G et al., *Peer-to-peer Sharing*, Report, 2015, Berlin www.peer-sharing.de; Scholl, G., M. Gossen, M. Grubbe, T. Brumbauer. 2013. Alternative Nutzungs - konzepte – Sharing, Leasing und Wiederverwendung. Berlin: Institut für ökologische Wirtschaftsforschung.

[9]Heinrichs, H. (2013). *Sharing Economy: A Potential New Pathway to Sustainability*, Gaia, 22(4), 228-231.

3 Design Studio Activity *#Sharing.Lab Milan + London*

Starting from this premise and analysis, the design studio ***#Sharing.Lab Milan + London*** investigated this phenomenon through an experimental approach, **testing in which way the physical aspect of public and private spaces**—in our cities now subjects to great transformation processes—**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**.

We explored, **through the spatial design approach**, the following new hypothesis of urban scenario and design question:

> **are we moving from shared public spaces to public spaces for [sharing]** ***sharing activities*****?**[10]

We chose to develop the ***#sharing spatial design project*** in reference to the following *sharing areas*, selected from the Collaborative Economy Honeycomb Diagram by Jeremiah Owyang,[11] subjects more related to **develop the sharing activities** at the location in London—the Hornsey Town Hall—and suitable to convert those "***space***" *in* "***place***":

[10]The Studio has been led in coordination with the *Middlesex University London (UK), School of Art and Design*. #INSIDEOUT_Interior Architecture Studio: Professors: Francesca Murialdo, Naomi House, Benjamin Koslowsky, Peter Thomas.

[11]http://www.web-strategist.com/blog/2016/03/10/honeycomb-3-0-the-collaborative-economy-market-expansion-sxsw/.

- FOOD #shared food prep #shared-food
- GOODS #pre-owned goods #loaner products #bespoke goods
- TRANSPORTATION #transportation services #loaner vehicles
- LEARNING #instructor-led #peer to peer
- SPACE #work space #place to stay
- SERVICES #professional services #personal services

The **SPATIAL DESIGN APPROACH proposes** to design urban spaces—both interior and exterior or in-between—and its related urban fittings/equipments system, **through innovative environmental, relational and logical configuration strategies—both progressive and regressive—sometimes even systemic** (Piccinno 2008).[12]

The main features are **to design sustainable spatial actions** able to express some of these characteristics and qualities. The projects must be: flexible, reversible, transportable, modular, adaptable, multi-performative, multifunctional, systemic, replaceable and able to low the spatial consumption (Piccinno 2012).[13]

Therefore, after analysing more than 130 international apps, Web-services and start-up case studies, the ***#Sharing.Lab Milan + London Studio*** experimented the opportunity of creating public urban spaces capable of hosting the sharing activities that some of these apps and services are able to initiate, also according to the new urban behaviours that citizens practice more and more:

- to work everywhere with different devices;
- to practice outdoor urban sports;
- to be very mobile;
- to use various apps to support their activities;
- to do business meeting in public places;
- to spend their leisure time in urban areas by visiting exhibitions, cultural events, shows,…;
- to meet unknown people in groups of common interest;
- to eat street food;
- etc…

[12]G. Piccinno, Space Design. 4 riflessioni = 4 lezioni, Maggioli (IT), 2008.

[13]G. Piccinno, E. Lega, *Spatial Design for in-between urban spaces*, Maggioli (IT), 2012.

foodcloud

foodcloud.net

GENERAL INFORMATIONS

FoodCloud is a not-for-profit social enterprise that connects businesses with too much food with charities that have too little.

LINK/SOURCES

foodcloud.net

WHAT IS SHARED

FoodCloud provides a simple way for food businesses to contribute to their communities in a meaningful and practical way and reduce their impact on the environment. By donating surplus food to various charities, businesses can assist them in reducing their food costs and therefore allow them to redirect funding to programs assisting those who are disadvantaged, creating tangible and long lasting local benefits.

NETWORK

business to community

SCALE

City

COMMUNITY

Food business, charities

TOOLS

Digital map

USER EXPERIENCE

Using this app, or through the website, participating businesses can upload details of their surplus food and the time period in which the food can be collected. This automatically sends a text message to the most appropriate charities in their community. The first charity to accept the offer collects it directly from the business.

#sharing.lab Milano+London

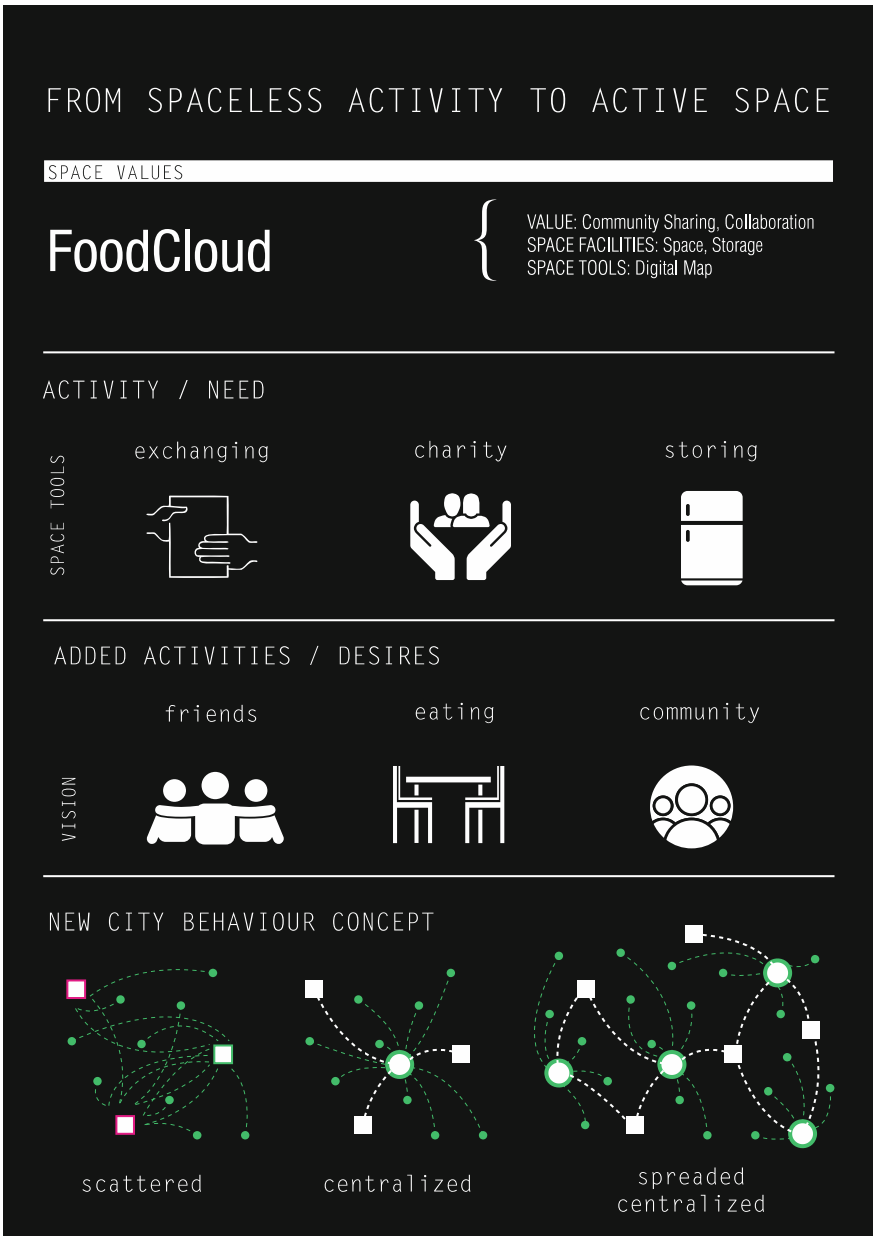
POLITECNICO DI MILANO | SCUOLA DEL DESIGN

CORSO DI LAUREA MAGISTRALE IN INTERIOR DESIGN | INTERIOR DESIGN STUDIO | A.A. 2015|16 - Sez. I3
Professors: Giovanna Piccinno, Andrea Morgante|Shiro Studio, Alessandro Piva
Assistants: Cristina Foglia, Cristina Zambonini - Internship: Alice Zingales - Communication Consultant: Cristina Morbi

> Format Census cards_Apps and webservices_ Card/front

General information

Case study n. 1/130_App FoodCloud_ International students team_08



> Format Census cards_Apps and webservices_Card/back
From spaceless activity to active space
Case study n. 1/130_App FoodCloud_ International students team_08

4 Spatial Design Proposals X Urban Public Spaces X Sharing Activities

The Design Studio activity was structured in the following phases, producing for each step different research and project outcomes:

PHASE #1_Investigation

- Six Sharing "macro-areas" studied: FOOD, GOODS, LEARNING, SERVICES, SPACES, TRANSPORTATION;
- 13 working groups;
- more than 130 sharing services examined (apps, start-up, web-services).

The different case studies are arranged in a card, **one side with information about the analysed service** (name, basic info, object of sharing, user experience, etc.), other side with examination of the **spatial qualities**, **existing or potential**.

It was also observed whether the services are based on relationships between business-to-consumer (B2C), consumer-to-consumer (C2C) or business-to-business (B2B).

PHASE_#2 Strategies [a]

The students teams presented their **#sharing Strategies**.

From space-less activities to active space. Boards and study models are created from a **#sharing vision to design conceptual possible spaces**.

PHASE #3_Strategies [b] Design concepts

The students teams presented their Phase #3 Projects on the desks: **scenarios, drawings**, **diagrams and conceptual models**. **Identification of the spatial concept** that they want to develop and the location selected in *Horsney Town Hall*, related to the strategy chosen.

PHASE #4_Final projects

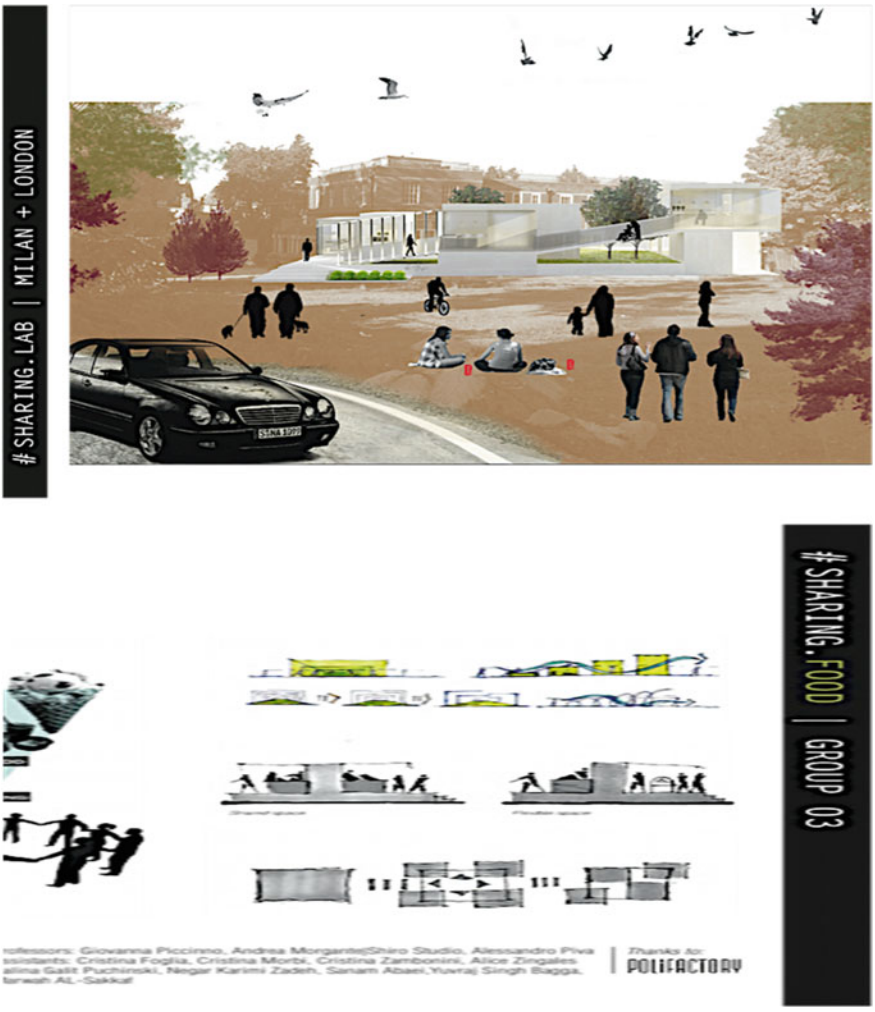
Planimetric drawings of the chosen location within the contextualization (insertion) of the spatial concept, study models, main elevations and sections, scaled and dimensioned of the spatial solution project, planimetric diagrams of the location in relation to flow paths, the proximity/distance with the environment elements (library, garden, fountain, hall, etc.), proxemics relations between people and environment, video to explain the concept, material samples, sketches and so on, to define the project.

> **Sharing projectsDesign Studio activities**: Census Cards, Diagrams, Maquettes, Sketches, Study drawings, Some Sharing-gate Workshop design proposals.

- **FOOD AREA**

PROJECT > *CUBeat*
[#CONNECTING THROUGH FOOD #CUBICAL GAME #SHARING FOR THE PEOPLE]
International Team 03_ Galina Galit Puchinski, Negar Karimi Zadeh, Sanam Abaei,Yuvraj Singh Bagga, Marwah AL-Sakkaf.

CUBeat is: connecting, exposing, creating new opportunities. The idea is **to create a place where people discover new ways of enjoying and thinking about food**.



PROJECT > *FOOD-US*
[#STAGE #VISIBILITY #AFFORDANCES]
International Team 08_ Aleksandra Rastik, Dinullah Bayu Ibrahim, Kiana Talebpour, Vera Irawan.

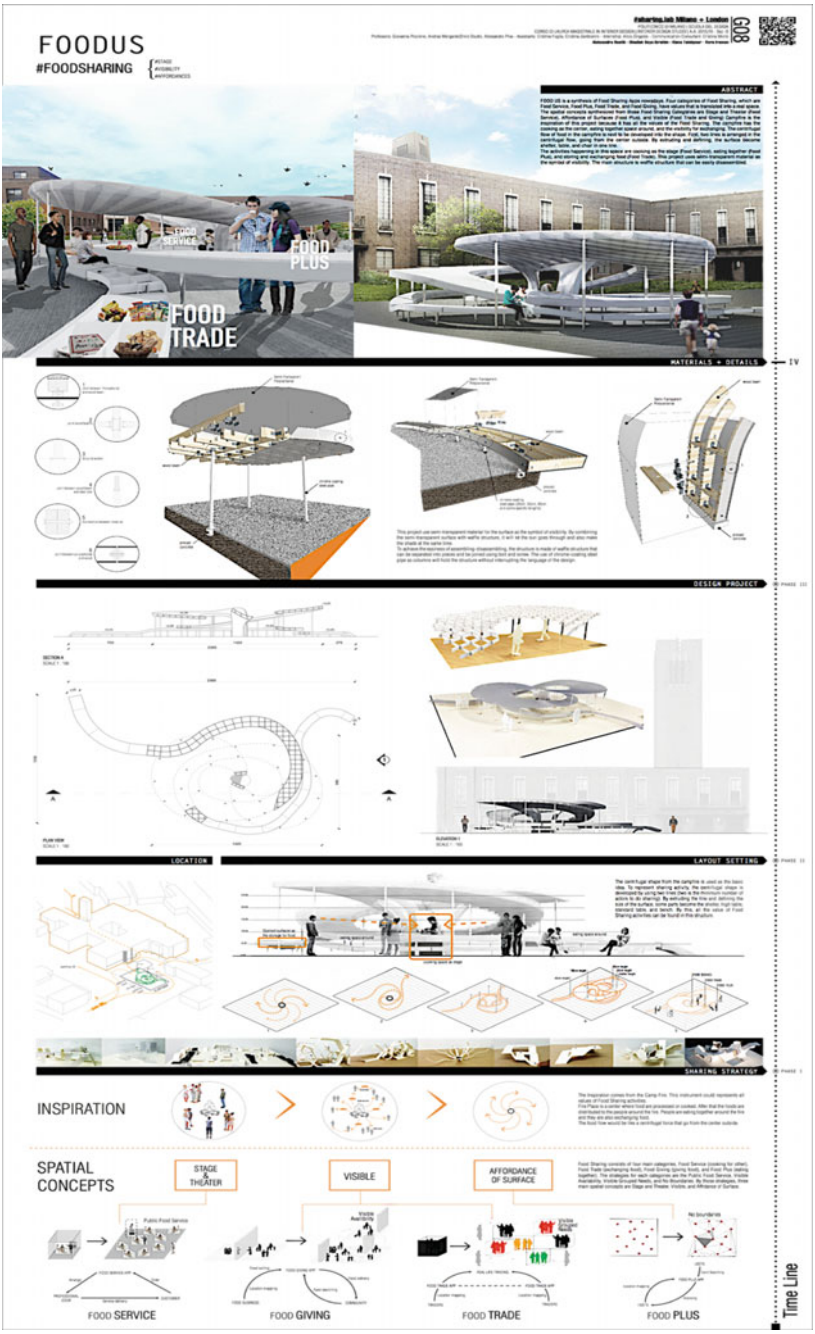
Food-us is a synthesis of Food Sharing apps nowadays.

The proposed pavilion provides spaces for cooking as "***on the stage***" (Food Service), **eating together** (Food Plus), **and storing and exchanging food** (Food Trade).

Four categories of Food Sharing, which are Food Service, Food Plus, Food Trade and Food Giving, have values that are translated into a real space.

The spatial concepts synthesized from those Food Sharing categories are Stage and Theatre (Food Service), Affordance of Surfaces (Food Plus), and Visible (Food Trade and Giving).

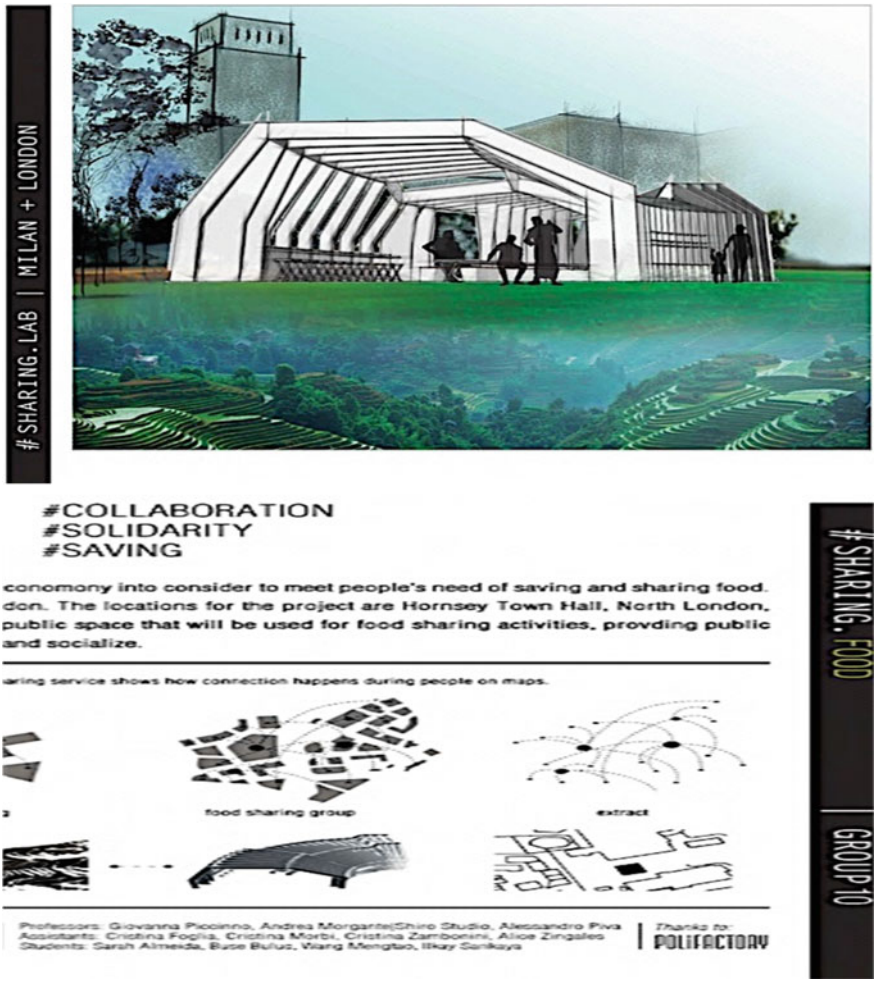
Campfire is the inspiration of this project because it has all the values of the Food Sharing. The campfire has the cooking as the centre, eating together space around, and the visibility for exchanging. The centrifugal flow of food in the campfire is next to be developed into the shape. First, two lines is arranged in the centrifugal flow, going from the centre outside. By extruding and defining, the surface becomes shelter, table and chair in one line. This project uses semi-transparent material as the symbol of visibility. The main structure is waffle structure that can be easily disassembled


FOODUS
#FOODSHARING
ABSTRACT
FOOD SERVICE
FOOD PLUS
FOOD TRADE
MATERIALS + DETAILS
DESIGN PROJECT
LOCATION
LAYOUT SETTING
SHARING STRATEGY
INSPIRATION
SPATIAL CONCEPTS
STAGE & THEATER
VISIBLE
AFFORDANCE OF SURFACE
FOOD SERVICE
FOOD GIVING
FOOD TRADE
FOOD PLUS
Time Line

PROJECT > *HOUSE - O - FOOD*
[#COLLABORATION #SOLIDARITY #SAVING]
International Team 10_ Sarah Almeida, Buse Buluc, Wang Menghao, Ilkay Sarikaya.

The project **House-o-food** takes into consideration different cities' climates, people's behaviours and sharing economy **to meet people's need of saving and sharing food, avoiding the food waste**.

The aim of the pavilion is to create a public space that will be used for food sharing activities, to provide public eating space and to create an environment for people to communicate with others and socialize.

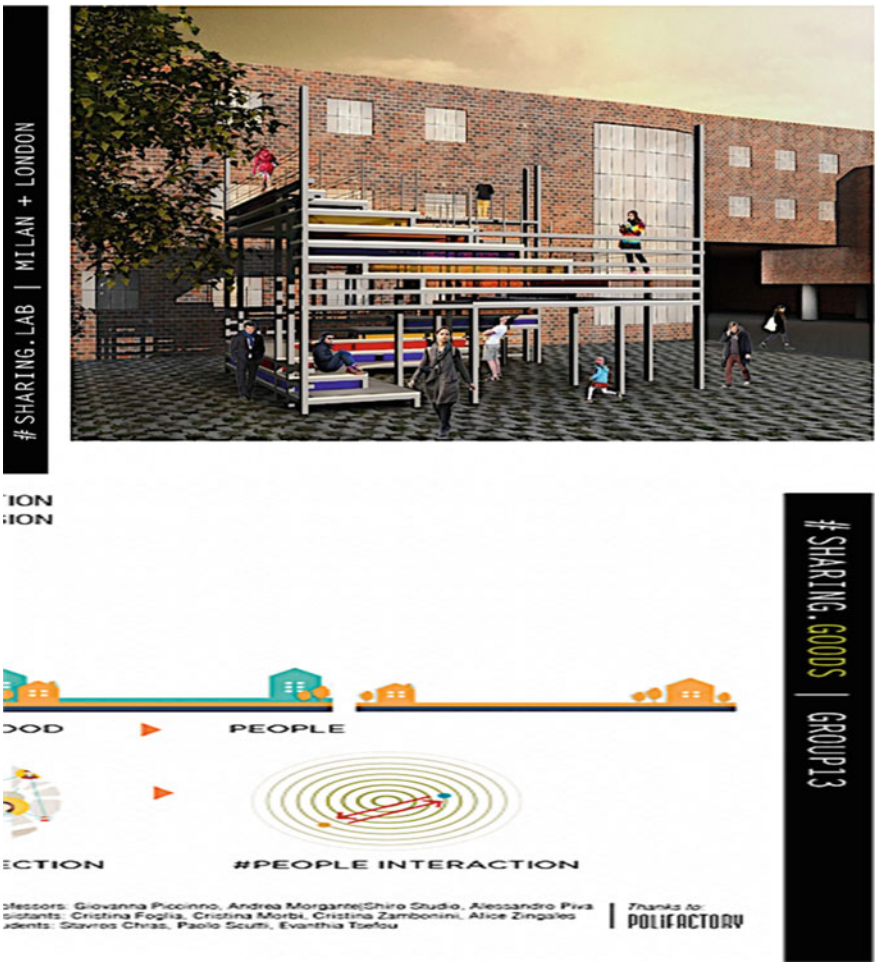


- **GOODS AREA**

PROJECT > *RAC PAVILION*
[#INTERACTION #SHARING #TRUST]
International Team 13_ Stavros Chras, Paolo Scutti, Evanthia Tsefou

Rac pavilion is a platform where people can share their goods but also time and experiences.

This can be achieved by creating a meeting point that helps people interact with each other using lockers and resting on the various seating systems on different levels of the structure.



PROJECT > *DROP*
[#GENERATIVE #FLEXIBILITY #TRANSPARENT]
International Team 09_ Aleksandra Ivanova, Chayati Kaushik, Mutsumi Yamanaka, Sasan Mehran, Betül Ünal

The space Drop is designed for people to share their seasonable and expensive diving goods. The project got inspired by a water drop that touching the surface creates waves and different levels.

The goal of the design proposal is to gather different people with the same interest and passion in one space, spreading the sharing activities along a path.

- **Transportation Area**

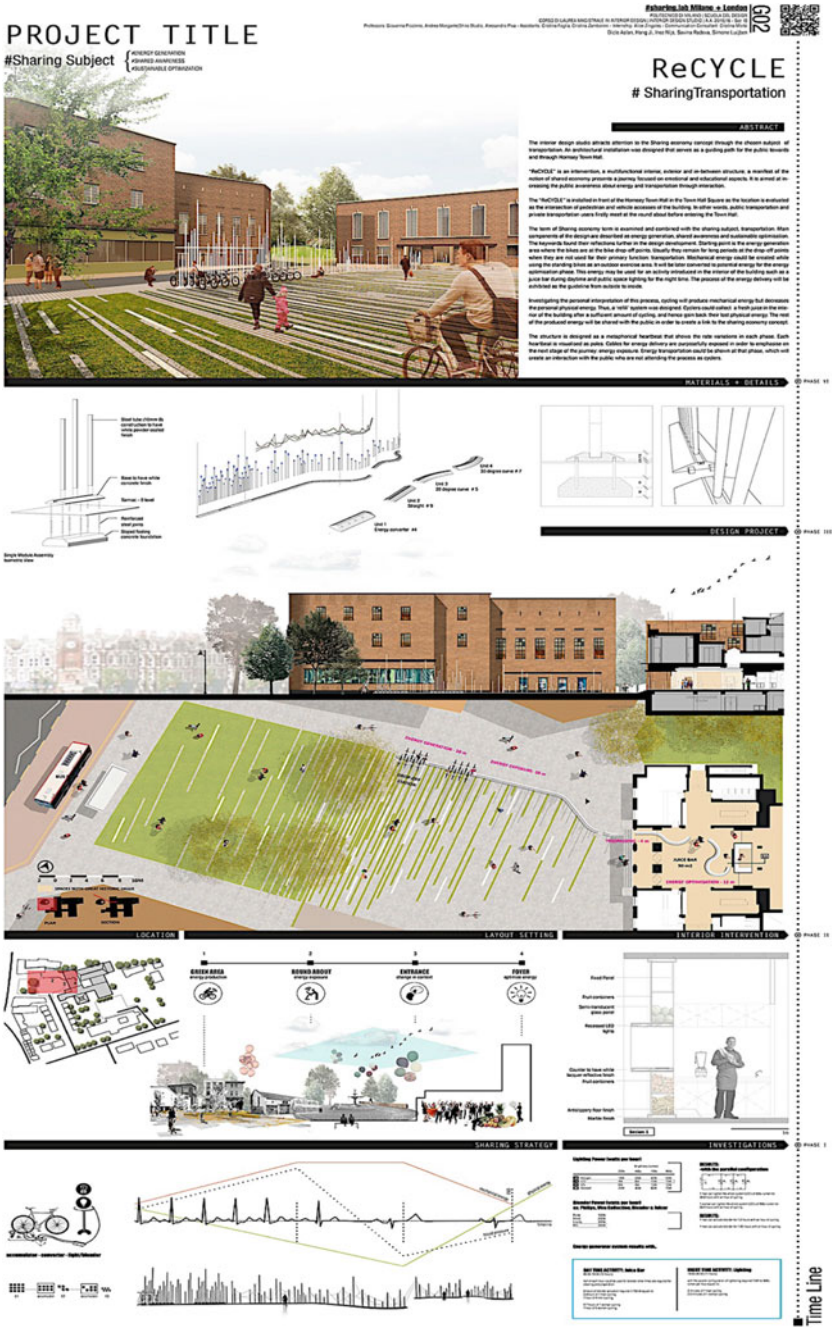
PROJECT > *ReCYCLE*
[#ENERGY GENERETOR #SHARED AWARENESS #SUSTAINABLE OPTIMIZATION]
International Team 02_ Dicle Aslan, Hang Ji, Inez Nijs, Savina Radeva, Simone Luijben

ReCYCLE is an intervention, a multifunctional interior, exterior and in-between structure; a manifest of the notion of shared economy presents a journey focused on emotional and educational aspects. **It is aimed at increasing the public awareness about energy and transportation through interaction**. It is installed in front of the Hornsey Town Hall in the Town Hall Square as the location is evaluated as the intersection of pedestrian and vehicle accesses of the building.

Main components of the design are described as energy generation, shared awareness and sustainable optimization. The keywords found their reflections further in the design development. Starting point is the energy generation area where the bikes are at the bike drop-off points. Usually, they remain for long periods at the drop-off points when they are not used for their primary function: transportation. Mechanical energy could be created while using the standing bikes as an outdoor exercise area. It will be later converted to potential energy for the energy optimization phase. This energy may be used for an activity introduced in the interior of the building such as a juice bar during daytime and public space lighting for the night time. The process of the energy delivery will be exhibited as the guideline from outside to inside.

Cycling will produce mechanical energy but decreases the personal physical energy. Thus, a 'refill' system was designed. Cyclers could collect a fresh juice in the interior of the building after a sufficient amount of cycling and hence gain back their lost physical energy. The rest of the produced energy will be shared with the public in order to create a link to the sharing economy concept.

The structure is designed as a metaphorical heartbeat that shows the rate variations in each phase. Each heartbeat is visualized as poles. Cables for energy delivery are purposefully exposed in order to emphasise on the next stage of the journey: energy exposure. Energy transportation could be shown at that phase, which will create an interaction with the public who are not attending the process as cyclers.


PROJECT TITLE
#Sharing Subject
#ENERGY GENERATION
#SHARED AWARENESS
#SUSTAINABLE OPTIMIZATION
ReCYCLE
SharingTransportation
ABSTRACT
MATERIALS + DETAILS
DESIGN PROJECT
LOCATION
LAYOUT SETTING
INTERIOR INTERVENTION
SHARING STRATEGY
INVESTIGATIONS
Time Line

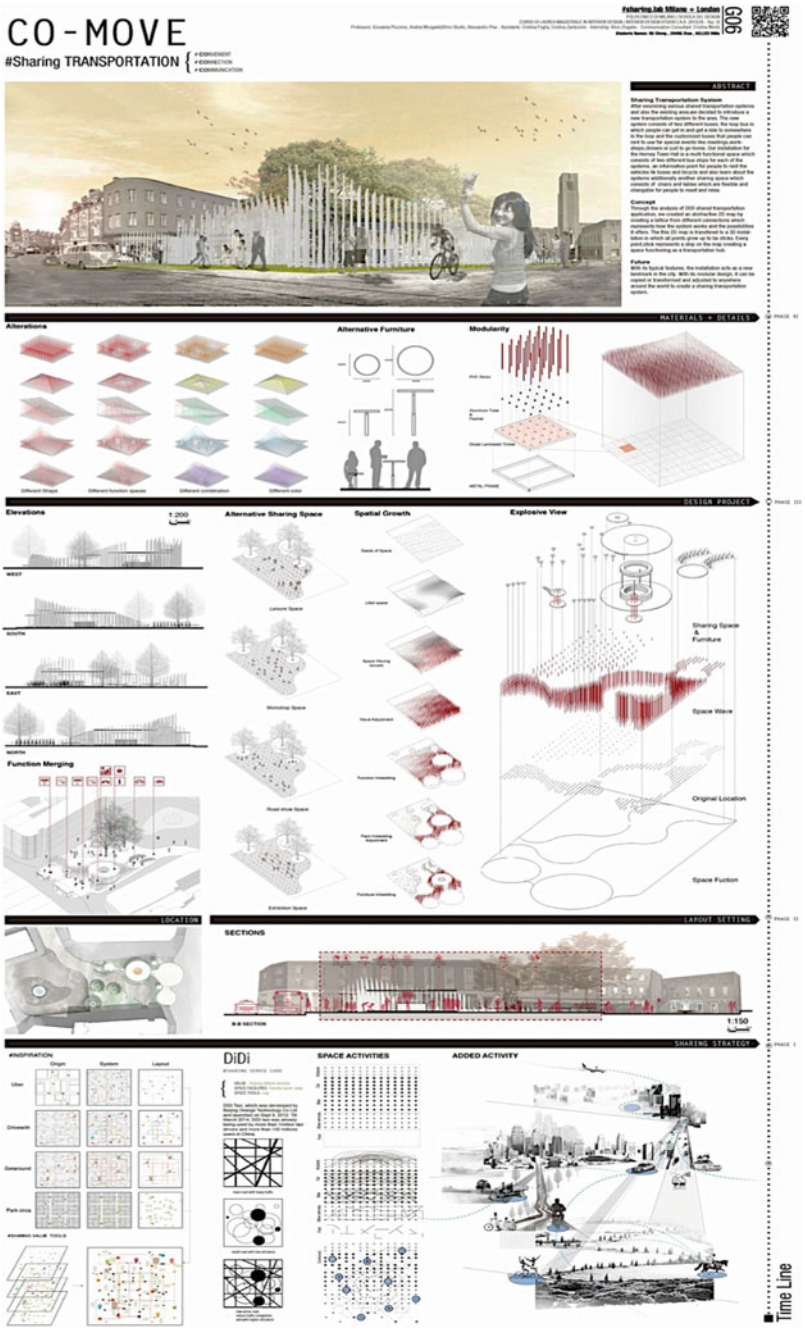
PROJECT > *CO-MOVE*
[#CONVENIENT #CONNECTION #COMMUNICATION]
International Team 06_ Hu Cheng, Zhang Zhao, Kelleci Mille

The installation Co-move acts as a new landmark in the city, sharing loop bus and bicycles in different part of cities, and offering waiting and socializing spaces.

Sharing Transportation System. The new transportation system consists of two different buses; the *loop bus* in which people can get in and get a ride to somewhere in the loop and the customized buses that people can rent to use for special events like meetings, workshops, dinners or just to go home. The installation is a multi-functional space which consists of two different bus stops for each of the systems, an information point for people to rent the vehicles like buses and bicycle and also learn about the system additionally another sharing space. It consists of seats and tables that are flexible and changeable for people to meet and relax.

Concept. Through the analysis of DiDi shared transportation application, students designed an abstractive 2D map by creating a lattice from different connections, which represents how the system works and the possibilities it offers. The 2D map is transferred to a 3D installation where all points grow up to be sticks. Every point-stick represents a stop on the map creating a space functioning as a transportation hub.

Future. With its original features, the installation acts as a new landmark in the city. The modular design permits to be copied, transformed and adjusted to anywhere around the word to create a sharing transportation system.

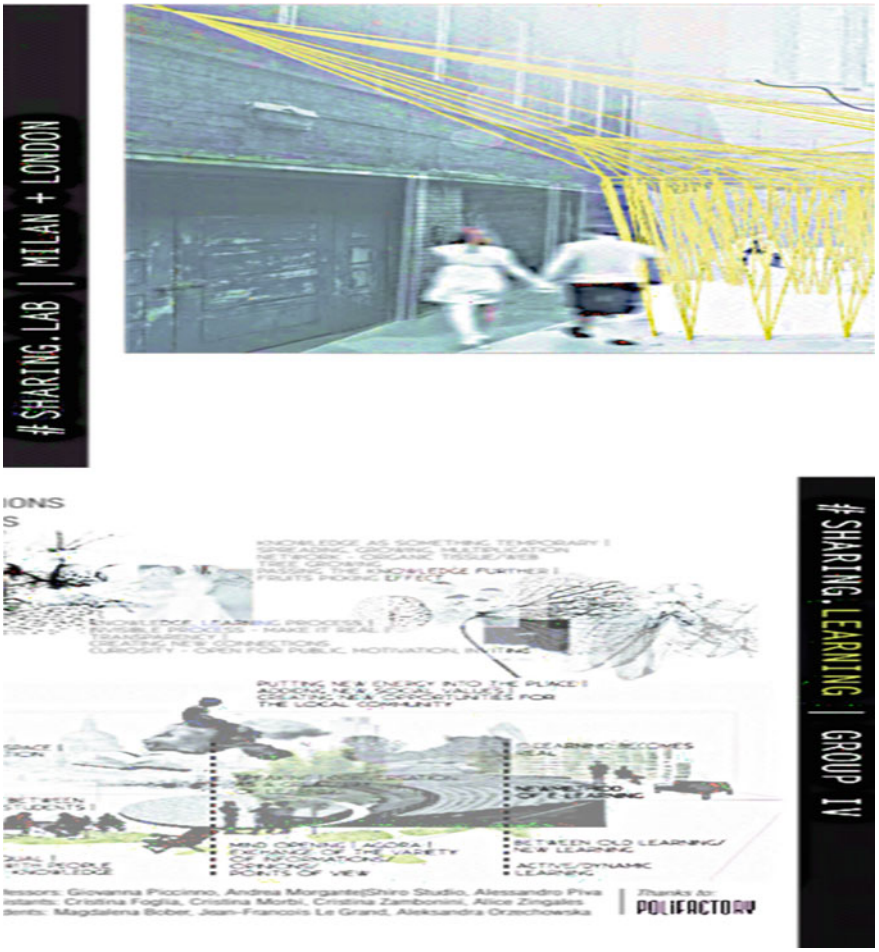

CO-MOVE
#Sharing TRANSPORTATION
+ CONVENIENT
+ CONNECTION
+ COMMUNICATION
Sharing Transportation System
Concept
Future
MATERIALS + DETAILS
Alterations
Alternative Furniture
Modularity
DESIGN PROJECT
Elevations
1:200
WEST
SOUTH
EAST
NORTH
Alternative Sharing Space
Leisure Space
Workshop Space
Road show Space
Exhibition Space
Spatial Growth
Explosive View
Sharing Space & Furniture
Space Wave
Original Location
Space Fuction
Function Merging
LOCATION
LAYOUT SETTING
SECTIONS
1:150
SHARING STRATEGY
#INSPIRATION
Origin
System
Layout
User
Driveshift
Catersound
Park circle
DiDi
SPACE ACTIVITIES
ADDED ACTIVITY
Time Line

- **LEARNING AREA**

PROJECT > *AGOR_AREA*
[# GROWING #CONNECTIONS #LIGHTNESS]
International Team 04_ Magdalena Bober, Jean-Francois Le Grand, Aleksandra Orzechowska

There are many online activities in the field of *learning* that provide knowledge for users via Internet. **Agor-area** tries to find the most important issues connected to e-learning and to react with the physical solution in a real space in London.

It **provides an exchange of variety of information from different points of views, gathering people, inviting them to use a socializing app**.



PROJECT > *AGOREAD*
[# KNOWLEDGE #TRANSITION #INTERACTION]
International Team 01_ Qian Du Phuong, Thao Nguyen, Ioanna Oikonomou, Marta Redigolo, Elena Vezzali

Agoread introduces a particular experience through which people may realize how the virtual world influences their behaviours in using space, in special in relation with others. The space is structured on the sequence of three layers, from virtual to physical, that people must cross: 1st passive space > 2nd transitory space > 3rd active space. **The *learning experience* is mediated by meeting and sharing with other people, in a welcoming and stimulating space**.

- **SPACES AREA**

PROJECT > *FEEL LIKE HOME*
[# COMMUNITY #EQUALITY #PERFECT SHAPE]
International Team 11_ Paria Habibi, Alessandra La Terza, Danli Yu

In the field of sharing economy related to the space, considering the deficiency of different applications and start-ups in the sharing concept just based on advantages and money, **the idea of creating relationships between people and give them the possibility to gather together in an urban space made the basic foundation of the project**.

The urban interior **Feel like home** is designed to recreate domestic comfort by using different materials with various sensory qualities.

To reach that goal, several spatial design characteristics and elements or activities, that could bring together strangers, have also been investigated and selected:

– Light
– Mystery, game, joyful activities
– Warm colours and different materials
– Comfortable spaces
– Chat, connection, sharing of feelings

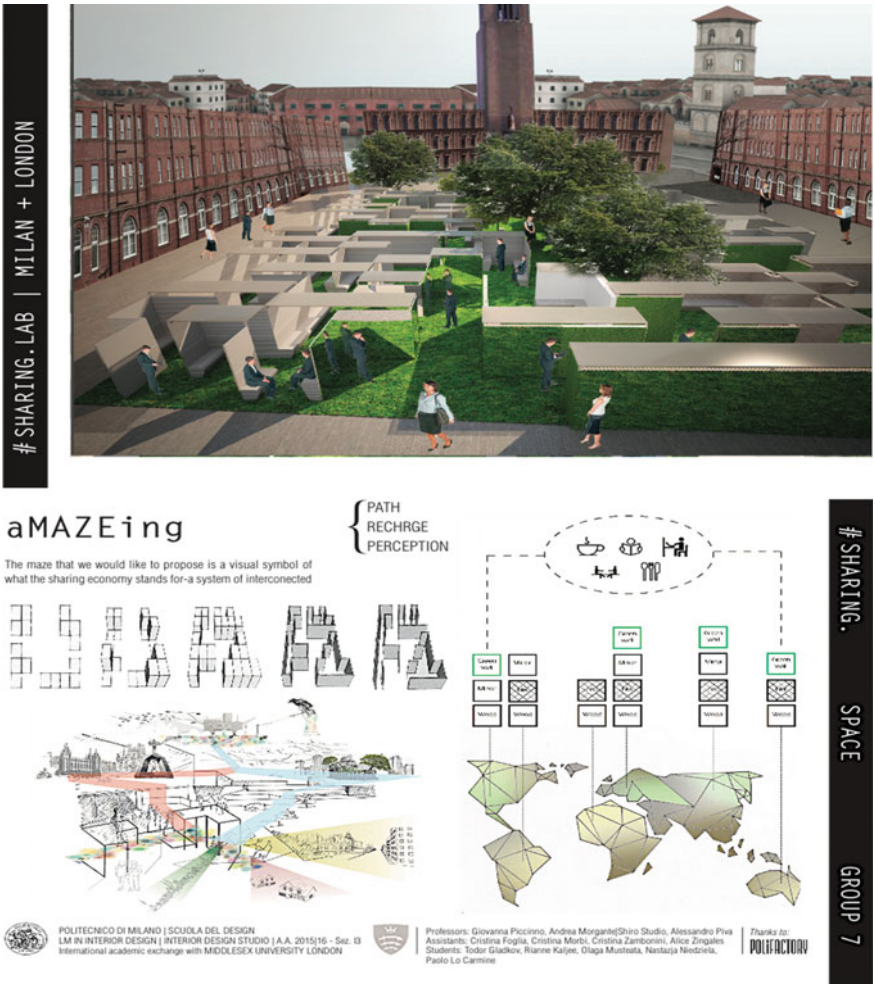
In this installation, people are in an equal relationship with others as in a family 'around a round table' and they can feel so comfortable while having sensorial experiences.


FEEL LIKE HOME
SPACE
ABSTRACT
MATERIALS + DETAILS
MATERIALS
CONNECTION DETAILS
Metal plates coated by silicon
Wood strings (Tanzu)
Rubber Granulate Mat
Cobbled Pavement
PTFE (polytetrafluoroethylene)
DESIGN PROJECT
DRAWINGS
LOCATION
PROJECT LOCATION – PLATFORM
MEETING POINT
LAYOUT SETTING
DIFFERENT LAYER
MODULE OF THE WALLS
SHARING STRATEGY
CONCEPT
Round Shape
Lines
Create Paths
Connection
Time Line

- **SERVICES AREA**

PROJECT > *aMAZEing*
[# PATH #RECHARGE #PERCEPTION]
International Team 07_ Todor Gladkov, Rianne Kaljee, Olaga Musteata, Nastazja Niedziela, Paolo Lo Carmine

The **aMAZEing project represents a labyrinth, a visual symbol of what the economy of sharing represents**: a system of interconnections. The proposed urban space creates different areas where users can share different everyday experiences, with different services to support their activities. The mirror surfaces metaphorically multiply the theme of the endless connections of the web.



Online/Offline Sharing Life

Alice Cristina Jola Zingales

Abstract This chapter, in continuation to Chap. 3, investigates the new concept of contemporary living influenced by digital technology and its relation with the urban spaces of consumption, connection and activity, which define the relationships' 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 Bucharest are analysed in order to highlight 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. Specifically, the references taken in consideration represent examples of best practices which define actual examples of the activation of sharing behaviours in shared spaces.

1 Introduction

The new concept of contemporary living is influenced by digital technology and its relation with the urban spaces of consumption, connection and activity, which define the relationships' places within the public space. These are part of a more complex system consisting of the built environment, the public sphere and digital space, which is represented by Castells' idea of *space of flows*, i.e. an interactive network of information and urban actions.

The flows of information and people, acting in a physical dimension, create a network which is the virtual place for communication and the exchange of information. As a consequence, this network defines new immaterial scenarios which overlap the material system of the urban landscape, in a continuous relationship between physical and virtual spaces. Considering the *QR code* as the physical merging point of the spatial dimension and the informative digital dimension, which defines a virtual place, it becomes evident that the boundary between virtual

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Research for Development, https://doi.org/10.1007/978-3-319-78099-3_13

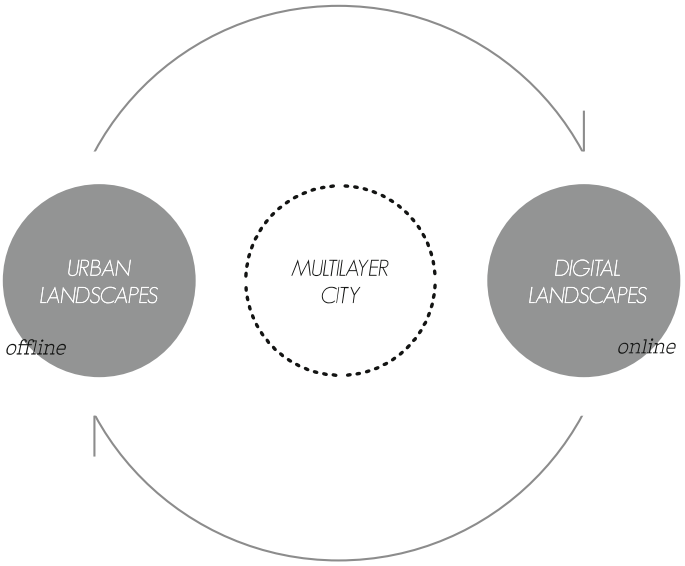

Fig. 1 Continuous overlap between urban and digital landscapes in an on/offline relationship

and physical spaces is getting increasingly 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 dematerialisation 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 the urban landscape and spatial relationships through digital systems, and *cities* may act as *stages of spatial transformation* instead of fighting against the possible disappearance of people' relationships in physical space, in favour of virtual ones.

Users generate an on/offline information landscape through physical–digital actions, which defines flow patterns in both the spaces; spatial design has to provide technology and to consider its actuation in the space, based on users' behaviour which changes in time and which defines the urban landscape itself (Fig. 1).

2 On/Offline Design Scapes

The adoption of ubiquitous computing, mobile devices and rich sources of data is changing how we live, work and play in urban environments. Increasingly, a digital landscape overlays our physical world and is expanding to offer ever-richer experiences that augment—and in some cases, replace—the physical experience: "*The city is the platform, the network, the sensors, and the interface*" (McIntosh 2013).

In many ways, the smart city is already here: public Wi-Fi, location-based services and embedded digital display systems embodying a few of the most present, if not visible, harbingers. And there are deeper evolutions afoot: energy and data infrastructures are becoming more complex and at the same time more seamlessly integrated into the material and structure of the world about. Today, cities consist of a set of new intangible scenarios created by the use of new digital devices and by the technological approach to social relations. The space has slowly and partially abandoned its physical dimension to take on characteristics of immateriality. In fact, all the flows of information produced by people using mobile devices create a network drawing placed between the physical and the immaterial spaces, thereby contributing to modify the urban landscape. The public spaces of the city—of consumption, activity and connection—then take a new connotation of contemporary life influenced by digital technology: it is a connected system where material and digital spaces co-exist, and where technology and information have a role of primary importance. The contemporary city is the place where fixed and tangible aspects of urban life interact with the technological and intangible ones, creating multiform interrelations between digital and urban landscapes.

According to Castells (2008), there exists a space of communication called the *space of flows*, consisting of people flows acting in the physical space plus information flows defining a circuit of digital exchanges. It is important to emphasise that the local dimension is determinant when talking about the space of flows; being a space of communication not primarily digital, it has a close link with the physical space: communications between two cities are, in fact, digital communications yet they could not exist without any space supporting them. Space is the material merging point of the social practices of time sharing, both in the simultaneity typical of the social network and in the physical proximity. Space has, in fact, to be considered as generated by flows of information, transformation, interactions and images. It represents a virtual place for exchange and communication of information, therefore defining a "*new social morphology*" (Castells 2008), which also influences the physical space lived in by the users. Technological innovation and the new communication approach that it proposes may represent the starting point to conceive new urban design strategies and a different way to experience mobility within the urban space, as well as to recreate the binomial system between the ***space of places*** and the ***space of flows***—as defined by Carta (2004).

People that live and inhabit a place create a connection with it that drives its roots in the social and personal dimension of the place's history. Places are not just portions of space with a mainly urban function, but rather a set of cultural meanings and physical environments which are assigned symbolic and social meanings. As a consequence, spaces represent the social or ethnic groups that inhabit them, returning an image of the constructions, trends and social relations of the groups. The design process seems to give more centrality to the symbolic, cultural and relational appearance in an attempt to redefine the project according to a bottom-up approach. This attention for the users seems to be even more urgent as the urban landscape becomes more a stage for representation than a place of daily life. Therefore, according to Michael Jacob's definition, the *omnipaysage*: "*A landscape*

is, a landscape is, a landscape…" *has been born inside the contemporary culture,* expressing the concept that generates the question on the meaning of the contemporary landscape and the paradox of its representation. The landscape is a complex cultural construction: "*The landscape is the artificial, not natural result, of a culture, that perpetually redefines its connection with nature.* [...] *The experience of the landscape is, in general and in the first place, an experience of the self*" (Jacob 2009).

The urban design must be able to relate locations, individuals, communities and global flows through the sharing of public spaces; indeed, this is the key element for connecting experiences. The process of the diffusion and artificialisation of the environment is seen as an opportunity to strengthen the human capacity to live and to manage the physical places, to occupy spaces, to capture information, to make connections and interactions regardless of the materiality of the place itself, in favour of a greater fluidity, decodability, permeability and cross-reading environments. Thus, the boundary between the physical and mental spaces is expected to become increasingly invisible because digital devices are now redefining the landscape in the urban scenario. As a consequence, the definition of a new urban anthropology in contemporary multilayer cities leads to new innovative, informal and self-organised habits; the local relationship within techno-tribes together with new ways of sociality on the Web; a continuous reference between online and offline landscapes, i.e. a strong connection between the digital and physical spaces which creates a sort of new dimension made of infinite links—an "*urban hyperspace made up of invisible cities*" (Soja 2000).

The contemporary urban experience is made up of several layers such as cultural interactions, networks, infrastructures or services, but the common thread lies in understanding the lived human experience. Cities are emergent organisms that have grown along exponential curves, attempting to adapt to changing human needs over generational timescales, according to technology.

McIntosh (2013) affirms that much of the intelligence that cities possess is fine-grained; it is the nuanced fabric and patina of human interaction with materials, machines and each other over time. Smart cities are, in fact, dynamic systems composed of an invisible virtual space overlying the physical one, interacting through a continuous flow of data created by technological devices and driven by smart citizens. The digital landscape is thus defined by the connection system made of ***nodes***—both tangible and intangible points of connection—and ***links***, which represent the connections between the various nodes. The network's morphology adapts the variety of interactions resulting from new technologies in which relations no longer take place in a vertical and hierarchical way but horizontally. This application can be actuated thanks to the physical medium—the ***hubs***—which guarantees the right functioning of the network and permits the virtual connection between existing places. The social system is then strictly related both to the urban environment in which people are and to the network immaterial system where the actual connection takes place, drawing a new intangible level of interaction.

The city appears as a complex stratification of relationships between material and immaterial spaces, mediated by social relationships and human behaviour.

Today, in fact, almost everyone can access technology, so the difference in influencing the space condition stays in the way every individual uses the digital devices and in the way it behaves in the space. The *collective intelligence* established by users in virtual worlds creates a socio-organisational space which influences and modifies the actions in physical space (Lèvy 1996).

Digital devices assume an important role in the redefinition of the landscape in the urban scenario: Townsend (2000) affirms that mobile technologies can change the city's *metabolism*, pushing through the process of information exchange in order to make the city a *real-time city*. The invisible and dense networks generated by digital interactions reflect themselves in the urban space through drawings of intangible but actual connections, creating an overlap between physical and digital spaces. Concerning this, Ratti (2012, pp. 76–80) affirms that the physical perception of a city will be slowly cancelled in time, that public spaces will not be places of exchange anymore, and that virtual reality will eventually prevail. Instead, what it is actually happening is the opposite: through user-oriented design and smart technologies, the cities are ***dressing up*** in order to create connection and interactivity with the users. Cities may be seen as stages, ubiquitous environments where everything provides information and services to the users. The physical–digital actions, which generate this landscape may be interpreted as multiple levels working on the same output surface, which merge together and create invisible patterns, defining a landscape of information and flows. The spatial design needs to provide a virtual network of information to the urban landscape, activated by the physical presence and interaction of the user in the space. Eventually it has to be a variable solution in time, adaptable to the evolution of people behaviour.

3 (Offline) from Transit Space to Shared Space

3.1 Homeplus Subway Store|Digital Metro Library

The UK's giant retailer Tesco applied a marketing strategy to the spatial design of a public space so as to facilitate the use of its service in relation to population habits, introducing "virtual stores", which are essentially a display of products on walls of metro stations and bus stops. Commuters, especially the tech-savvy, ultra-busy lot, could scan the QR codes of the products on display with their smartphones, and place their orders even as they waited for their trains or buses, without losing the physical and visual "experience" of brick-and-mortar stores. In fact, most of the city population has a fast way of life and moves continuously, and has no time to physically go to the supermarket (Fig. 2).

South Koreans spend a significant amount of time on public transportation, predominantly between home and work. What has helped is that public transportation is reliable and inexpensive, and is the fastest and most efficient way to get around. The introduction of Tesco's virtual stores in subways made use of time

spent by commuters waiting for public transportation, allowing buyers to use the little time they have available for grocery shopping. Not only did this change the way buyers shopped, it also increased the potential market for Tesco. These buyers may not have otherwise had time to go grocery shopping between their personal and professional lives, opting to buy take-out instead. All of this implies that grocery customers in South Korea are more time-poor and less price-sensitive. They value convenience and technology to accommodate their busy lifestyle.

The same communicative and commercial matrix is also applied to the creation of the Digital Library in Bucharest Metro, which visually recreates the atmosphere of a library and allows subscribers or people in possession of a valid travel document to scan the QR code of a book or a magazine and to read it directly on its own smart device. This way, when travelling in urban areas of the city, a completely virtual service is available albeit closely linked to the physicality of both the location (library) and its element (book), and users experience a spatially and time dislocated entertainment activity.

The virtual experience is implemented by a review system where users may suggest and give a short review on the book borrowed, creating a virtual library of shared opinions that may help in the decision of choosing one book instead of another (Fig. 3).

As a result, time perception changes when acting according to these environments: the fast flow of people varies from walking fast towards the metro train to catching the first one coming to a slower—sometimes staring—flow of users involved in a different activity, which permits the creation of a new real (i.e. physically present) community that was just existing online before. People behaviour is therefore the connecting element: the interaction between users, space and

Fig. 2 Visual representation of the HomePlus Subway Store by Tesco—Seoul, North Korea, 2011

Fig. 3 Visual representation of the Digital Metro Library by Vodafone—Bucharest, Romania, 2010

technology leads to a change in the global perception of the original *genius loci* of the places. The overall perception is about a switch in the activity due to a spatial design approach, which allows a space to be shared through a change in the main function to meet the needs of users. In this way, public transit spaces such as subway stations take on new meaning thanks to the sharing of a service.

Consequently, a variation from a circulating/waiting space to a shared space happens when including spatial economy in the design process, which allows public spaces to have a second life through virtuality, becoming a merging and meeting place. In fact, the spatial design takes on the role of intermediary for the reactivation of public spaces, and through smart devices, activate levels of connection between users in order to bring on aggregation and sharing of space: public space then becomes a place of exchange (of information, of functions and of services).

4 (Online) Shared Dining Spaces

4.1 Inamo Restaurant

The project for the Digital Restaurant is based on the balance between the technological aspects and the creation of a social space with a strong personality. Its design allows tantalising glimpses of the interior and of the BlackSheep-designed "cocoons" which house the projectors, computers and frames and which sit above each table. The "cocoon" projectors are set at the same height throughout within the

Fig. 4 Visual representation of the tables of Inamo Restaurant—London, UK, 2011

suspended high gloss black ceiling and come in three sizes to light 2-cover, 4-cover or 6-cover tables. When customers sit down, there are white spots for plates and an individual "e-cloth" for each table. Customers use a touch panel to order food and drink or change their table top to one of the seven other patterns available: in this way, the speed of the order allows the kitchen and bar to provide a consequently faster service, but replaces, in contrast, the physicality of the direct relationship with the waiter and the ability to make special requests. Nevertheless, serving staff are available at any time to help customers navigate through their menus or to answer any other queries, but the menus have been exceptionally clearly designed and should be intuitive (Fig. 4).

As intended for Asian cuisine in general, the food service is centred around sharing plates between diners; the dishes are served as they are ready from the kitchen and intended for sharing as they are not served sequentially in a "starter and main course" style. Same intention for the interior design configuration of the tables, as the "cocoon" projectors are fixed in pre-configured places, so diners may not find the needed number of covers and they will eventually have to share their table with strangers. This becomes more interesting when analysing the interactive gaming system which connects every single station all over the restaurant's covers: a selection of games is part of the virtual tablecloth and it makes people interact with each other while waiting. The technology gives diners complete control of their dining experience and involves sharing as a concept for space adaptability and flexibility within the spatial design itself; by sharing a space for different services—in this case, restaurant, entertainment, gaming and a space economy which allows the owners to cover more free seats—it attracts more and different typologies of clients, according to different functions.

More in general, a multiconfiguration space combined with an interactive experience leads to a change in retail perception where users may find physical interaction in changing the space configuration in order to host more people or, on the other hand, in adapting themselves to a fixed configuration in order to share the experience with strangers and, at the same time, they are involved in a virtual interaction where, for example, the ordered dishes are placed on the same level in

order to be shared between diners, or people can interact by using the provided technology even when not seated in front of each other.

Concerning food spaces, the conventional restaurant model is dying, and that is a positive turning point. A smart storefront and the right location are vital in retailing, but commercial real estate in eye-catching urban corridors can be expensive and hard to find. Add to this a tough economy, and many start-up retailers find themselves bunking up both to economise and build their businesses. No longer is a single restaurateur or type of cuisine assigned to a single property, but it is all about feeling the foodie love and sharing space. Spurred by the artisan food movement and more people moving into urban centres, shared dining spaces are the new normal. These restaurants are an extension of the sharing economy, and it allows small businesses that ordinarily would not be able to afford a proper set-up to take less risk, grow and keep profits healthier.

Retail space sharing is not new. Big-box stores began sub-letting in the 2010's to reduce real-estate expenses, and benefit from store-within-a-store branding; for example Wal-Mart and Target offer Apple mini stores, and Sears sub-lets to clothing retailer Forever 21. By integrating space, the business may also develop thanks to the selling of complementary products by different retailers and ends up sharing more than just space.

5 Multifunctional Spaces for Sharing

The role of design in shared spaces has to be defined by a design-thinking approach, which first evaluates the importance of the space and then defines its spatial design configuration and service proposition and management, possibly supported by a digital platform and fast access.

Multifunctional spaces in general may host several services thanks to their flexible and adaptable configuration, and 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 fastly shifting to a virtual scale. A multifunctional space can be described as a true integration of different functions in time and space (Brandt and Vejre 2004). This is different to mixed-use development that compartmentalises the various uses within a community or a landscape. For example, implementing multifunctionality within communities creates spaces that have multiple purposes; these spaces can contribute to a community's vitality due to their access to diverse uses in one place. Moreover, these multifunctional amenities often appeal to diverse community members, allowing them to act as incubators for new ideas, knowledge exchange, shared experience and experimentation. This connection of diverse communities can inspire innovative thinking and provide opportunities for collaboration and partnerships across traditional boundaries.

Sharing activities in the public space would transform the city scenario itself into a stage for people aggregation, where users generate an online/offline landscape of information through physical–digital actions, simultaneously defining and designing flow patterns in both physical and virtual spaces.

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Airbnb: A New Way of Housing Between Individual Experience and Collective Narration

Barbara Di Prete

Abstract The chapter is dedicated to Airbnb. As Joe Gebbia (co-founder of Airbnb) recently declared, Airbnb is more and more interested in investigating the new way of living and the current transformations of private spaces. Their presence at the last *House of Vision* exhibition in Japan shows that they can really change our idea of domestic space in the future. The paper then focuses on the changes affecting the housing paradigm, more and more called upon to face the challenge of a shared and collaborative use: today the concept of hospitality, going beyond the traditional offer, 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 the search for cosiness and sociality, between preserving one's own identity and opening to the other, but especially a possible transformative engine for a collaborative economy that does not only mean exchange of services, while directly involving the users in the building of a new social contract between people.

1 For a New Vocabulary of Living

The concept of home refers to numerous meanings ranging from subjective interpretations to collective narrations. Home "on one hand implies the innate individual pursuit of protection and intimacy, and on the other hand it makes people rediscover the human need to share spaces and live together. This need is also the significant need to be able to welcome others." This is how Giulia Cogoli in *Le case dell'uomo* (Aa.Vv. 2016, inside cover) introduces the concept of two polarities within which the western model home is gambling on its present and putting its future on stake.

The shift from the concept of "nest house," a term that is now considered out-of-date, but still widely acknowledged (Bachelard 1975) to the concept of "open house," is conceptually various. It is an epistemological, sociological,

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and anthropological conceptual leap that obviously entails a radical change in the paradigm of domestic use too. It also directly affects all the people dealing with interior design and service design.

Living has been interpreted in two different ways: On one hand, it can be an individual experience; on the other hand, it can be a collective ritual, a testimony of a shared cultural identity. This dual interpretation is the subject matter of the research by numerous anthropologists, who "combine living with moving" and consider staying only an intermediate stage between living and moving (Remotti, in Aa.Vv. 2016, p. 108).

This interpretation of home as intermediate stage between staying and leaving, between roots and roads seems to be particularly relevant in the contemporary scenario. Nowadays, people live in a more distracted, nomadic, temporary, and promiscuous way. This kind of living cannot be explained using the traditional interpretations: in a moment in which everything rapidly changes, also the domestic dimension, historically characterized by mayor inertia, has to consider a new *Vocabulary of Living* (Mendini, in Parmesani 2004, p. 96).

This vocabulary should be able to describe the paradigm of an open society, that is a various and heterogeneous society, inclusive of differences and based on the intrinsic dignity of the person: The concepts of extroversion, sharing, accessibility, and "collaborative commons" could be transversally applied to different fields of living. They can contribute to redefine the characteristics of the domestic scenario too.

1.1 Extroversion

The idea of a reversible and adaptable project is increasingly becoming popular. This is a project that deals with the extroversion of living and with breaking the dichotomies public–private, indoor–outdoor, individual–collective. In this specific sense, extroversion becomes a "show-off". It becomes publicly sharing fragments of intimacy. These are the typical logics of social networks, which go beyond the mere digital dimension and affect also the discipline of interiors. In this frame, the extroversion of living becomes aesthetization of spontaneous gestures and also spectacularization: The performance component enters into the domestic space and transforms the "backstage" into a "mise-en-scène" opened to the city. The threshold between indoor and outdoor is interpreted as an enormous but camouflaged display, whereas the house becomes a "container of actions." It turns into a backstage for the widespread representation of an informal theatricality. It is the exhibition of daily rituals that makes the "architecture of experience" increasingly popular (Cao and Cantucci 2001, p.162).

1.2 Sharing

The experiences of space and domestic rituals sharing are becoming normal habits, as they are for example in cohousing. This essay will not delve into these experimentations, which by now are validated. It will rather highlight the conceptual origin they are based on. The anthropologists Adriano Favole and Matteo Aria delved into the topic of sharing in a recent study (2015). In this text, they state that sharing regards a completely different sphere compared to both gift and exchange. Sharing is rather an internal relation without formalities, protocols, and calculations.

The external sociality seems to be predominantly dominated by exchange. This inevitably entails risks and fears. On the contrary, the internal sociality is based on sharing, which fosters a feeling of security, familiarity, and intimacy.

This dual human sociality is based on structurally different forms—"the internal one and the external one, the one of interiority and the one of exteriority, the sharing one and the exchange one—both essential and crucial. […] They are not two separate and inevitably opposed spheres. They can narrow, grow larger or even combine and mix" (Remotti, in Aa.Vv. 2016, pp. 104–105).

1.3 Accessibility

There are other features one can consider peculiar to contemporary times; such features are openness, broadened participation, and inclusive accessibility.

Traditionally, the word accessibility refers to a physical quality aiming to overcome architectural barriers. It regards the project of infrastructures. However, nowadays, in a broader sense, first of all, this term refers to the ability to include; it is a physical, social, and mental openness; it is an ability to transform spaces into places where to share "the experience of togetherness without a common purpose" (Joseph 2007, p. 117); it is a propensity for the encounter between differences, which sociologists as German and Gagnon define as "culture of hospitality"(2000).

Therefore, accessibility can be described as "the ability to respond to various use cultures of spaces and living, the ability to offer sharing platforms of common experiences" (Camocini et al. 2017, p. 97), whereas hospitality is the ability to welcome who "faces a physical, social, and cultural context which is alien to him" (Ivi). They are two slightly different interpretations that contribute to create innovative scenarios also for the domestic use. One of them highlights its instrumental component, the other its experiential one.

1.4 Collaborative Commons

There is a fourth interpretation category to interpret the revolution affecting the contemporary age, with consequences in the domestic field too. This category is what Jeremy Rifkin defines as "collaborative commons." This is the first economic system which is an alternative to capitalism and socialism; it has the aim to reduce income inequality and make global economy more democratic and ecological (Rifkin 2014, p. 3).

This emerging model is based on communities, which highly share goods and services. This model seems to further confirm the significant difference between the exchange economy and the sharing economy. This new system gives the latter an opportunity to be successful. "In this new model, which by 2050 will become the uppermost judge around the world, […] social capital is as important as financial capital, access trumps ownership, sustainability supersedes consumerism, cooperation ousts competition, and ≪ exchange value ≫ in the capitalist marketplace is increasingly replaced by ≪ sharable value ≫ on the Collaborative Commons […] by fostering open source innovation, transparency, and aggregate research" (Ibidem, pp. 4, 28).

Rifkin delves into this matter in his book *The Zero Marginal Cost Society* (2014), where he presents the concept of "prosumer." In this text, he also tries to explain the convergence of the factors that are enabling the creation of this new cooperative model:

a. The *prosumer* is the key element of this new system. Thanks to the diffusion of new technologies, the *prosumer* plays the role of both producer and consumer of goods and services.
b. The driving force of this profound revolution can be considered the *Internet of things*. It is a smart infrastructure that currently encompasses new communication systems (global networks), energy systems (renewable sources) and logistic systems (Google cars, Amazon drones, Uber proposal, car sharing…). This convergence is not accidental. As in the past, these three factors are the ones that caused the great production transformations (consider the revolution triggered by information sources as the press, the radio, and the television; by new energy sources as coal and electricity; by new transportation systems as steam engines, combustion engines, containers).

Consistently with this view, the societies, which will supposedly have the opportunity to succeed, will be the ones able to join nets, renew themselves according to a horizontal management, rather than a vertical one and make the most of the disintermediation created by the Internet. In an interesting interview with Wired Rifkin tries to support this hypothesis: "I have no figures, but it is possible that for every Uber and Airbnb there will be new BlaBlaCars and CouchSurfings able to be even more competitive because they are created by users for users. I am absolutely optimistic because I remember that the powerful major musicals and media failed because of millions of Lilliputians as Napster. Also, because I can see

that in the energy sector, vertically integrated big companies are not able to grow in the small markets created by green energies. This immediately creates a space for alternatives models based on collaboration. If many small players manage to connect, they will be able to affect the supremacy of the big ones" (Romeo 2014).

This new economic paradigm is so innovative that it will actually trigger bigger consequences. It can become "a new culture, a new way to see the world, a new hierarchy of values" (Silvestri 2017). This will also affect, and it is partly already doing it, the domestic system.

2 The Case of Airbnb: "Feeling at Home" in Somebody Else's Home

Quintessentially, home represents the mirror of our society, "a real laboratory of understanding and transformation of the world" (Molinari 2016, p. 12). Persico already stated that the new home expresses "the conscience of a new world" (1935). Even if many decades have passed, this statement is still valid.

Therefore, the case study of Airbnb is not only an innovative model of sharing a good (and a personal "world"), which is intrinsically private and intimate. Maybe it is one of the cases that manage to explain the most the complexity of the economic, social, and cultural ongoing revolution.

It is clearly successful. In order to try to understand its roots, one should consider a concurrence of factors: the economic crisis that increased the need to rely on a supplementary income and the research (sometimes creative) of alternative ways to achieve it; the easy access and management of the portal which makes it easily accessible for non-expert users thanks to the diffusion of computer technologies; the wide possibility to rethink and recodify our housing habits; the consolidation of a general culture of hospitality (to be considered both as ability to welcome and as possibility to move).

In short, the Airbnb model is a full expression of the contemporary age. This is because—maybe before and more than others—it met the needs that this essay tried to list in the introduction section. It is an open platform that makes the most of the accessibility and pervasiveness of the net. It stakes on the extroversion of living and stands as an example of "collaborative commons" where users are "prosumers" to all intents and purposes. Furthermore, Airbnb seems to provide a convincing solution to the aforementioned dilemma offering an innovative compromise between individual and collective needs, practical and representative needs, research for intimacy and sociality.

It can be considered a convincing solution because figures themselves regarding its use and spread show its efficacy: Founded in August of 2008 and based in San Francisco, Airbnb is "a marketplace for people to list, discover, and book unique accommodations around the world" (www.airbnb.com). By 2020, it is expected to earn $3.5 billion a year, according to sources close to the company. This would be a

3,400% increase compared to the previous year company turnover (Gallagher 2017). Recent figures regarding Airbnb economic impact on some of the most active cities show the following data (www.airbnbcitizen.com): The flow of money concerning New York amounts to 1.960 billion dollars, then London 1.950 billion dollars, Los Angeles 890 million dollars, Berlin and San Francisco 510 million dollars.

Airbnb users target is very heterogeneous thanks to the wide range of accommodation offers and prices. With a "low from high" price range, guests can choose their favorite match. Moreover, guests are able to explore dreamland destinations listed in the Web site: "from couches to islands and castles" (Anon 2015).

Lastly, it is interesting noticing that the main hosts are women. The number of women in the Web site is constantly higher than the number of men. "It is estimated that currently more than one million women share their home on Airbnb. Since 2008, women have generated more than ten billion dollar earnings thanks to home sharing" (Anon 2017). The same happens in Italy.

Here, since 2012, the number of host-women has increased 26 times. Currently, the remarkable number of host-women amounts to 83.622 (54% of the whole community of Airbnb). Of course, economic implications are the most evident figure. In Kenya, for example, thanks to Airbnb, a woman earns on average a sufficient amount of money to cover one-third of the annual house expenses, in India: 31%, in Morocco: 20%. Moreover, the study shows that, overall, 50.000 women used the earnings coming from home sharing to support one of their business projects (Ivi).

From a contextual point of view, the popularity of this platform can be partially ascribed to the convergence of the three factors Rifkin referred to (communication, energy, and logistic innovation):

1. Information (the Internet) is the platform support instrument.

The Internet implies a radical change in the way people relate to each other. It makes them connect in just one net space creating communities of ideas and actions sharing. Also, the house is already highly affected by these technologies, both those which "enter" in the house and those which "let the house enter" into other worlds (and other people's worlds).

2. Logistics (ease of movement) guarantee the demand for services.

The identity links with a specific place-community have become more transient compared to the past. Thanks to the ease of mobility (of data and people), man lives an increasingly strong ability to relate to far places (Nuvolati 2007).

3. Energy in the strict sense does not entail immediate consequences.

However, it can be interpreted in a more personal way, which means a mental openness to change habits that have been strengthening over time.

This last observation must not be taken for granted. In fact, we live in houses but we could also assert that "houses live in us." The consolidation of the Airbnb model depends also on us questioning our habits: "living forges habits. It is no coincidence that the words "abitare", "abiti", "abitudini" (living, habits, routines) share a common etymological root" (Favole, in Aa.Vv. 2016, p. 44).

Paradoxically, nowadays, maybe the topic of "habits" can qualify the Airbnb experience and distinguish it from the experience of traditional hotels, which are often anonymous places. They are able to welcome different guests because they are usually neutral (excluding the themed ones, which highly target their clients). On the contrary, the Airbnb model seems to "use" its hosts' habits, manias, vices, and mannerisms to attract guests.

The users' profiling makes the most of these features. It is a way to "recognize" the other, a way to find again parts of one's world and domestic perception also in alien places. It is a research for clues, sometimes also unconscious clues, to make us feel at home because "when we say 'I feel at home', we refer to the quality of the relation where we feel understood and acknowledged. It is a relation where we can be spontaneous, in the right place, in our shoes" (Civitarese and Boffito, in Aa.Vv. 2016, p. 32).

This peer-to-peer economy model is based on two main feelings: empathy and trust.

In fact, in the sharing economy models, the feelings are "cooperation, trust, generosity, gratuitousness to create value, [which permit] to rethink capitalism in a redistributive logic" (Scancarello 2015, inside cover).

The personal experience of a user's first experience with Airbnb perhaps is much more telling about the value of these emotions than any other conjecture: "for many people the idea of letting a stranger entering their house or entering the house of a stranger might be creepy. On the contrary, this gave and gives me a feeling of thrill. I can only explain this feeling as a sort of primitive joy, rooted in the awareness of opening to the world and trying its possibilities. This lightness of being sometimes makes us more reckless but less affected […] by social conventions, instilled into our minds since our childhood as irrefutable axioms. Some of them are fear of the other and the absolute protection of our own spaces. […] Airbnb was formalizing a tendency that has already been consolidating in my everyday life: trust others and rely on the neighbor to meet a need" (Ibidem, pp. 7–8).

Airbnb founders did acknowledged the importance of these aspects that seem indefinite but are actually crucial to determine the success of the proposed model. As Joe Gebbia stated, Airbnb aims at designing new forms of "houses" starting from the idea of sharing and believing that people can trust each other. To delve into this idea, it has launched an internal division, Samara. This is a design studio at Airbnb that builds on new attitudes toward sharing and trust. To achieve this objective, Samara builds on hardware and software.

The second element used to describe the *peer-to-peer economy* is *empathy*. It deals with the concept of trust because it certainly fosters it. However, it introduces other observations too. In fact, empathy is an exposure to diversity, which enriches social, economic, and commercial relations. Empathy also enriches all those subjective bonds that in one of his visionary books, Rifkin considers founding relations of the contemporary society (2010). In fact, according to him, the future civilization will be based on empathy, which means on the ability to identify oneself with the condition of another person.

This is a concept that is definitely crucial in the experimentations of the sharing economy too because it is a source of social cohesion and is a "morally educational" feeling, which enables us to understand others and, subsequently, helps us meeting their needs in a more proper way (Sennet 2008, p. 180).

3 Toward a Future Outlook: From Interior Design to the Design of Experience

Airbnb, with its ability to interpret (and often anticipate) market trends, is still able to interpret contemporary times. In particular, the currently offered scenario implies another outlook change. This change shifts from the "simple" sharing of spaces to the sharing of experiences. It can be seen as a slight innovation, but it actually opens a wide variety of offers, which are extremely innovative and different from the traditional ideas of hospitality. The potentiality of such change is still visible, also from an economic point of view.

In fact, every use of other people's domestic space—on holiday or on a business trip, for a day or for a week—implies a component of subjective involvement. In this involvement, the project of interiors plays a crucial role. The immersion in a unique and unusual experience emphasizes the action rather than the place. This means, it seems that experience is more important than the spatial model, relations with the outside are more important than the internal dimension.

From this point of view, the functional component becomes an "underlying" need. The practical needs become an excuse, whereas the emotional aspect (which sometimes enters the category of the extraordinary) guides every project decision. Surely, this point of view regards the entertainment discipline more than the spatial discipline. However, it is interesting to notice that these apparently different fields when combined can sometimes be fruitful.

The Airbnb program called "night at" (www.airbnb.it/night-at/) aims at transforming emblematic places in houses for a magic night, to make a dream come true and create an unforgettable event. Thanks to this program, now it is possible to sleep at a height of 2700 m, at 9000 feet from slopes; to spend the night in a VIP suite overlooking the Chicago Bulls sports fields or the Maracanà, the football temple in Rio de Janeiro, it is possible to rent a floating house on the river Thames, "live" in the Abbey Road Studios, the legendary recording studio that welcomed artists as Beatles and Amy Winehouse. The experience can range from sport cheer to the passion for one's music or movie idol. However, it can also deal with different feelings. On Halloween 2015, a mom and her son spent a "terror" night in the catacombs of Paris. The year after, two lucky people managed to be hosted in the ancient dwelling of the Count Dracula. Again, in 2016, three bold friends slept in an underwater room surrounded by sharks. Fear is sometimes replaced by ludic emotion in "The Ben 10 Rust Bucket," the famous camper, which was rent to open the new season of the cartoon Ben 10. In all the aforementioned cases, it is clear

that the narrative component, emotional aspect, individual and collective memory linked to these places prevail.

It is no coincidence that Airbnb itself does not promote space. It promotes the experience itself.

In this regard too, Alessandro Mendini has been a pioneer. In the nineties, he used to state: "from a utopic point of view, I used to think of significant architectures. They did not have to be linked to the urban function. They had to be linked to the thinking, not the institutional meaning of thinking. They had to be linked to words, proto-philosophical emotional situations. I used to think of a house of the thinking, a house of design, a house of sorrow, a house of legend, melancholy and madness" (Parmesani 2004, pp. 98–99).

To sum up, after the study of the latest experimentations led by Airbnb, one could make at least three observations regarding three different aspects:

1. *Economic*. The economic operators are definitely focusing on experience, rather than service: "today, economy is focusing on the last independent sphere of the human activity: culture. Collective events, social movements, civil commitment, arts, sports, games are increasingly becoming part […] of a new world where acquiring experiences becomes the main consumer good […]. In this society, culture is the most important economic resource, time and attention the most precious goods and everyone's life the best market asset" (Rifkin 2000, pp. 12–15).
2. *Spatial*. It is now clear that the context and the relations with the outside are more important than the internal dimension and that space design goes hand in hand with entertainment design almost becoming a "lived in event." In the light of the above, one must state that this unbalance works because it regards a temporary hospitality. The latter is composed by extemporaneous uses that can neglect some needs, which are usually part of the discipline of interiors (as the ability to welcome). On the contrary, the domestic use cannot exclude such aspect.
3. *Communicative*. The essay previously introduced the term "narration" deliberately. On one hand, it is important to highlight such term because the contemporary society fosters this aspect. On the other, the narration is crucial because every experience of the portal implicitly includes a strong narration. "Over the last decades, we have increasingly gained awareness of the crucial role of narration in our lives"; this is what the North American psychologist, author of the book La fabbrica delle storie (Bruner 2002) stated. According to him, "narration is what enables us to live: we have a strong need to create stories, about us and about others, about what we have lived and what we will live" (Finessi 2016, p. 372).

In conclusion, to assess also the long-term impact of the Airbnb offer, one should ask oneself if the aforementioned model concerns what Neal Gorenflo (founder of the association Shareable and reference person of the collaborative economy) defines as transactional paradigm, or better what he calls transformative paradigm.

"If the sharing economy only increases service exchanges without a commitment of the users to change also human relationships, it will only be a temporary transition of the system. It will not contribute to create a new system. If, instead, as an effect of collaboration and sharing, new bonds and a new social contract between people are created, then we will talk about a transformative effect" (Scancarello 2015, pp. 15–16).

Maybe the following observation is optimistic or premature. However, considering the conducted study and the relational and social implications, it is believed that Airbnb is part of the second category. Furthermore, it is believed that this model can potentially be one of the forces creating a new system of "intimate economies".[1] These are economies composed of a private aspect, which today is shared, networked, transformed into an economic, work, social and cultural resource. In fact, the value of a new encounter is measured in terms of money but also (maybe especially) in terms of all the incentives, knowledge, friendships, and solidarity bonds it generates.

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Italianway: An Entrepreneurial Innovation for Hospitality in Contemporary Cities

Annalinda De Rosa and Martina Mazzarello

Abstract This chapter is devoted to a specific case of sharing economy in Milan, broadening the vision to include the influence that *infrastructuring* processes have not only on the complex socio-technical system (scale-up) but also on a single case at local level (scale-down), supporting the authors in a reflection of the impact of the sharing economy on management innovation. We describe *Italianway*, a Milanese platform that links visitors with the local communities and services to offer an authentic experience of the city; in the creators' words: "Live like a local, welcome to Milan". This 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 milieu.

1 An Organisational Change Process: The Urban System as a Platform for Infrastructural Innovation

The actual social context is characterised by the active involvement of people in the transformation of their existence, acting in their environment to achieve social change. This change is "social" because people[1] are not just asking local authorities or national governments—which are responsible for that change in a top-down model—for economic, political or social transformations in a passive and abstract way but are assuming a proactive role through the development of bottom-up activities and actions, being involved in local organizations and informal groups, and/or through individual initiatives. These processes reveal a growing awareness of specific problems, how to tackle them and how to bring to light common values

[1]In this chapter, the authors use the word "people" to refer to groups of lay individuals not trained in social research, such as clients, customers, users or citizens, according to research branches.

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and beliefs, expanding social networks in more or less local contexts. Activities and initiatives include various subjects, since they are related to specific concerns, but all consequently contribute to improving an immediate problematic situation.

What is remarkable is how the innate creativity and design capacity of human beings to invent and realise something new (Manzini 2015) is stimulating a shift in contemporary society. The strength of this exciting, motivating force lies in the level of diffusion and in the overall impact of these transformational processes. As Manzini states, "their diffusion and character result from the combination of two main factors. The first is, of course, the nature of the problems to be dealt with on different scales, including everyday experience. The second is the pervasive diffusion of information and communication technologies and their potential in terms of organizational change. In such a situation, it is likely that a growing number of people facing a problem also see an opportunity and find a new way to solve it" (Manzini 2015, p. 9). The problems in question are the so-called wicked problems that the contemporary world is facing and that social innovation embraces, addressing specific, complex and always changing issues in a diffused way, and involving multiple actors in multiple configurations of partnerships (individuals, groups, organizations, local governments and trans-national agencies). The diffusion of new ICTs is a fundamental component of this shift, since they "have enabled a variety of local political actors to enter international arenas once exclusive to national states" (Sassen 2004).

This grassroots process has opened the way to innovative scenarios that have challenged the socio-technical and economical systems, asking for a more resilient infrastructure and for an organisational change in the system itself. Today, the context is already favourable for a systemic approach, since infrastructural changes have already grown into place.

These favourable ingredients have led to the rise of a new form of market: the sharing economy model, also referred to as peer-to-peer (P2P) markets. According to Michael Bauwens,[2] "P2P specifically designates those processes that aim to increase the most widespread participation by equipotential participants, [where the shared asset is] a use-value for a community of users [and where] its distribution is a peer property mode, different from private property or public (state) property" (Bauwens 2005). As stated before, permeating factors make the development and spread of a P2P economy possible; Bauwens lists these factors as *infrastructural requirements*: a technological infrastructure (access-based technology); the existence of a software infrastructure and of a legal one; an autonomous communication system. Underneath these, a cultural shift paved the way for the diffused assimilation of concepts like shared ownership, collaborative models and consumption networks. The infrastructure system makes these social transformations viable.

The authors' research focuses on spatial and service design aspects: how urban contexts are affected by such changes in terms of transformation of the urban environment (physical and service infrastructuring), and in terms of uses and

[2]Founder of the P2P Foundation, https://p2pfoundation.net.

identities. Urban contexts are a theatre for important changes and challenges, and they are going through a continuous overlapping of configurations, depending on how people reclaim their use—in terms of time (temporary/medium-/long-term) and in terms of function—how people physically cross these places (new forms of mobility) and new societal dynamics. Urban spaces are not isolated entities but a complex system of places, activities, events, initiatives and actions that happen at the border between *ephemeral*—all that has a short life—and *provisional*—"an event originally intended for a medium-short term but which, for various factors whether external or internal to its provisional nature in itself, moves into the medium-long term" (Fassi 2012, p. 38). Spontaneous or more designed actions modify the urban experience and influence the citizens' everyday life, eliciting social and behavioural change. More widely, the urban territory can be seen as a permeable denationalized platform, activated by multiple interventions and inter-related actions, and thus able to accommodate a collaborative platform. Sassen speaks about the *ascendance of sub- and trans-national spaces and actors*, facilitated by the weakening of the restrictive formal power of states over national regions (Sassen 2004). This geography of local networks activating multiple "micro-spaces of daily life" depicts a holistic system in which even marginal locations can become part of global networks and spread their influence. Therefore, we are in a dense network of connections linking local actions and creating a flurry of initiatives and social change processes.

Summing up, the introduction of collaborative values has been the main disruptive scenario: the bottom-up initiatives have been possible because the cultural push towards proactive engagement of people is spreading and development of the ICTs has created favourable conditions for it. This scenario has already been assimilated in the western context: these values are no longer disruptive but have now been assumed, and the sharing models are no longer unprecedented but have become embedded in the contemporary context. This has been possible because bottom-up initiatives have evolved into more mature forms of organisation, supported by P2P information exchanges and "by different kinds of intervention from institutions, civic organisations, or companies (top-down interaction)" (Manzini 2015, p. 82). The western system incorporates the attributes of the contemporary citizen/user, scaled up by putting at the centre of the change—or, better/more accurately, by being willing to put at the centre of the change—all the actors of the urban structure in a systemic and integrated way: local authorities, administrations, innovative companies, territorial actors, the third sector and representatives of active citizenship.

The case presented in this chapter, the Milanese company *Italianway*, is an example of the ripple effect of these changes into the entrepreneurial system that has, in some way, acquired the contemporary socio-technical systems at both global and local level, introducing a hybrid model able to be embedded in the specific context of Milan.

2 Towards an Integrative and Collaborative Model: Top-Down Actions

The flurry of initiatives and demands for processes of social change by people do not only imply social innovation in the sense defined by Phills et al (2008, p. 36) as "a novel solution to a social problem that is more effective, efficient, sustainable, or just as existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals". Although, it does introduce the concept of *disruptive innovation* (Christensen et al. 2006) where a change is a generator of new experiences and perspectives that imply a proactive attitude towards the future, also overriding the way of thinking and interacting within commonly accepted actions by creating new rules and new values, new habits and new behaviours.

In the previous paragraph, the authors briefly depict a context in which very different economic, social and cultural practices coexist. On the one hand, they deal with business models based on sharing goods or services: not only collaborative models aimed at improved utilisation of existing assets, and strengthened social networks, but also evolved forms moving in the direction of Platform Capitalism, the so-called on-demand or *gig economy*. On the other hand, they touch on the typology of a changing panorama that has shaped and is shaped by those models. Temporary bottom-up initiatives revealed citizens' growing interest and awareness, while the collaborative and P2P economy embraces those principles and—thanks to new technologies and to its business models—both are rapidly transforming cities.

These outlined models are increasingly becoming an object of study for institutional actors within the urban, national and international structure, who are trying to assess the impact of this change on the urban environment, on the regulatory system and on economic growth, in order to funnel this change into the existing model to make it more flexible. In the European context, this paradigm shift has entered into the lexicon and is included in the purposes of Horizon 2020,[3] the EU Framework Programme for Research and Innovation, i.e. the 2016/17 work programme entitled "Europe in a changing world—inclusive, innovative and reflective Societies", which calls for Europe-wide, inclusive progress at socio-economic, political, educational and cultural levels, and seeks to combat large disparities in human and social capacities. The attention towards this shift's impact is also relevant into the 2016/17 "ICT" work programme with its specific challenges on "new participatory innovation models for economy and society" linked to "emerging ethics of digital innovation, such as social entrepreneurship, direct democracy, privacy preservation and digital rights".[4] Moreover, critical research papers

[3] https://ec.europa.eu/programmes/horizon2020/.

[4] See the specific calls at http://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html#h2020-work-programmes-2016-17.

commissioned by the EU are trying to assess "the main legal challenges for regulating the collaborative economy and evaluat[ing] the definition of, and elucidat[ing] how the existing body of EU law applies to, collaborative economy business models".[5]

At the Italian level, there is currently interest in mapping the impact of research and innovation on the wider systems within Italian cities (governance, economic growth, tourism and culture, digital transformation, employment, education, etc.) with a view to shifting towards *smarter cities*, closer to the needs of citizens, more inclusive and more liveable. As Smorto (2016, p. 4) states: cities are recognised as "laboratories for sharing practices with a central role in shaping an entirely new economy". The annual report is the ICITY Rate by ICity Lab.[6] In the 2017 rating, the city of Milan was ranked first in terms of economy, living, legality, environment, mobility, people and governance. The Milan governance is, in fact, particularly favourable to putting all actors in the urban fabric at the centre of the change, as evidenced by many initiatives that have been emerging in recent years. The local administration is particularly active in grasping social pressures and emerging needs, and favouring them with structured solutions triggering virtuous processes, with the aim of systematising emerging actions. One example is the "Bilancio Partecipativo"[7] [ed. participatory budgeting] initiative founded in 2016, in which the municipality finances projects (public works or the purchase of durable goods) proposed, developed and voted for by citizens. Another is the call issued in 2013 and again in 2014 to have licences for communal green areas and communal spaces addressed to social enterprises and non-profit associations; this led to Milanese best

[5]Smorto, G. (2017) *A critical assessment of European Agenda for the collaborative economy. In Depth Analysis for the IMCo Committee*. European Parliament. Citation from the abstract of the document.

This analysis has been commissioned by Policy Department A for Economic, Scientific and Quality of Life Policies upon request of the European Parliament´s Committee on the Internal Market and Consumer Protection "to provide in-house and external expertise to support EP committees and other parliamentary bodies in shaping legislation and exercising democratic scrutiny over EU internal policies".

Retrieved from http://www.europarl.europa.eu/RegData/etudes/IDAN/2016/595361/IPOL_IDA(2016)595361_EN.pdf.

[6]http://www.icitylab.it

An initiative by FPA, a company dealing with the organisation of national forums and conventions addressed to public administrations, political figures, businesses, associations and citizens, and offering tools such as databases of public administrations and digital platforms. It aims to put these actors in contact with one another and to create the occasion for head-to-head discussion on the different themes (endorsement: building and strengthening political will; empowerment: internal training for public administrations; engagement: involvement of citizens and local stakeholders in the process of innovation).

[7]https://www.bilanciopartecipativomilano.it

An initiative in collaboration with the project EMPATIA (https://www.empatia-project.eu) funded by the research programme CAPS within Horizon 2020 and in which Milan is one of the pilot cases.

practices such as "Coltivando, the convivial garden @ Politecnico di Milano"[8] and the cultural hub BaseMilano.[9]

All the initiatives have led to the observation that the needs emerging from the community of citizens are turning into definitive structured actions, entrepreneurial projects and institutional processes designed to serve the citizens themselves, thanks to an active citizenship and administration combined with a receptive and advanced governing system.

Even though Italy is not considered a well-balanced country in terms of the digitization of its economy and society, according to the Digital Economy and Society Index 2016 (DESI[10]), the city of Milan is an exception: it is the main, almost the only Italian metropolis with international relevance in this field.

In addition to the municipality's active citizenship and administration, a hybrid role is still attributed to the business sector. In this scenario of new transformational processes, local companies are implementing a resilient mechanism that allows them to rethink their role within society and adapt to the above-mentioned processes.

ICTs, a supporting public system and a society that keeps up with the times are all fundamental factors in creating a fertile ground for innovative and locally driven business ventures, able to translate their tried and tested systems into a context undergoing transformation.

By briefly illustrating the favourable conditions at European, Italian and Milanese level, the authors have explained the ongoing alignment between contexts, thanks to the ripple effect of the "infrastructuring process" [analysed in depth in the final paragraph of this chapter]; this scenario aids understanding of the environment of the case to be presented, *Italianway*.

3 *Italianway*[11]: An Entrepreneurial Example Embedded in Contemporary Social and Economic Transformations

The *Italianway* platform was founded in 2014 by two Milanese property managers —Davide Scarantino and Gianluca Bulgheroni—who were renovating the concept of "albergo diffuso" and applying it at metropolitan scale in Milan. The "albergo diffuso" model happens when the components of a hotel are scattered around different spaces within the same urban area, generally a small one, answering the ongoing issue of empty buildings in rural areas. The company's main goal was

[8] http://www.coltivando.polimi.it.

[9] http://base.milano.it/en/.

[10] https://ec.europa.eu/digital-single-market/en/news/digital-economy-and-society-index-desi-2017
A composite index that summarises relevant indicators on Europe's digital performance and tracks the evolution of EU member states in digital competitiveness.

[11] https://www.italianway.house.

precisely to find a niche in the "sharing economy" value system, adapting recognised international practices to a local environment and developing an innovative business model.

Italianway arose from the interpretation of a territorial need that has been highlighted and turned into an entrepreneurial opportunity within the real-estate business sector. The idea stems from a generalised issue: the fact that many properties sit empty or unlet. On the one hand, to meet the needs of property owners *Italianway* adds components that collaborative services like Airbnb do not provide; on the other, to meet the needs of travellers, it offers a hybrid service somewhere between the logic of Airbnb and that of traditional hotels. How does it work? *Italianway* proposes to property owners to take care of their real-estate assets by making them available for a different kind of rent; property interiors are renovated in a "Milanese style" and made ready to receive temporary guests. Properties are placed on the *Italianway* digital platform, which takes care of all the process (requests, contact with guests, preparing the house, payment transactions, providing the guests with any information they need, cleaning the house at the end of a stay, and so on). Thus, the owner no longer needs to seek out information about how to deal with this kind of process (as for a P2P model), since every aspect is handled by the *Italianway* logistics. The platform provides clear guidance and personalised support at all stages of the service. The process contains easy steps for prospective guests: they can book online via the *Italianway* Website or through an existing Web platform such as booking.com or expedia.it. The platform guides the guest through the travel details and indicates the closest *Italianway* reception for their check in, information and luggage services. It even provides details about various tourist experiences available in Milan (sports and leisure, food, shopping, outdoor activities and cultural tours), some of which are well-established services within the city while others are benefiting from customised support by the *Italianway* staff.

By seizing the opportunity presented by underestimated real-estate assets in the Milan area, and their strong touristic potential that has yet to be fully developed, *Italianway* intends to make full use of the temporary hospitality offer and the "albergo diffuso"-style services. In fact, *Italianway* consists of about 400 apartments, for two to six people, spread throughout the city of Milan, and is attempting to keep increasing this number until the end of 2017. In terms of their aesthetic quality, the apartments reflect the neighbourhood in which they are situated. The receptions (physical touchpoints of the service) are located in strategic positions around the city, and the touristic "experiences" offered integrate the whole system into the city, generating a hospitality service fit into Milan. "Experiential" tourism is the objective of integrating some non-hotel services into the action network; the online platform seeks to be an intermediary and a tool to integrate the hospitality service with different experiences, for example related to transportation, places of interest or food. This integration with services in the territory serves to expand access to the city with a precise aim: for a user to feel like a citizen—and not a guest—of a city, during a temporary stay there on holiday or for work.

In addition to boosting the number of apartments on offer, the founders of *Italianway* want to increase the number of receptions, in order to facilitate the

service's procedures and distribute the physical ecosystem of their platform around the city. They are also looking to establish training opportunities, and hire property manager figures to then spread the service also outside the Milanese context. However, while on the one hand the service is operational and growing, with occupancy rates of more than 90% for the apartments, the use of the integrated services is still embryonic, requiring a further push to help it become successful.

Still, *Italianway* is not exactly a P2P model because of the actors involved: it is an innovative service for property owners with no transfer of competences; it creates an innovative network between owners and the real-estate system; it is integrated in the city's system of public and private spaces and services, and it offers a physical and digital ecosystem.

Italianway is a local company that owns the means of its local entrepreneurship approach: an example of innovation in management embedded in contemporary social and economic transformations.

4 Hybrid Models for Local Economies: P2P Values in Entrepreneurial Systems

By focusing on the service-product presented, this chapter broadens the vision to include the impact that *infrastructuring* processes have not only on the complex socio-technical system (scale-up) but also on a single case (scale-down), supporting the authors in a "where are we now?" reflection.

In the first paragraph, the term *infrastructure* was used in its general meaning of *the basic physical and organisational structures or complex of elements that constitute the basis of support, or in any case the underlying fabric of other structures, needed to ensure the operation of a society or enterprise.*[12] However, this notion also has a meaning more specific to organisational transformation with an ecological point of view. It has been theorised by Star and Ruhleder (1996) and occurs in the work of (Björgvinsson et al. 2010; Hillgren et al. 2011; Van Reusel 2016). Framing an infrastructuring process means avoiding a project-based approach in the task of creating favourable conditions to build long-term relationships and to create networks by providing an open-ended design structure (Hillgren et al. 2011, p. 10). In fact, Star and Ruhleder define it as a "relational concept since it becomes infrastructure in relation to organised practices": a structure we rely on, integrated in other structures, supporting them, reachable beyond a single use and occurring "when local practices are afforded by a larger-scale technology, [resolving] the tension between local and global" (1996, pp. 4–6).

The Milanese context presented above has shown how an already existing infrastructure—built on an assumed system of values, access-based communication

[12]Authors' adjustment from Treccani and the Oxford English Dictionary.

technology and participative administration—constituted a suitable platform on which to base innovative entrepreneurial models for temporary hospitality.

In the paradigm shift from producer innovation to user and open collaborative innovation (Baldwin and Von Hippel 2011), given values have succeeded in entering into the local profit logic, so as to stimulate local entrepreneurship to develop innovative models. These values include expanded access to goods, non-ownership models of using consumer goods, the diversification of individual consumption, increased efficiency of asset use, reliance on online communication and transactions, the facilitation of trust among strangers and the acquisition of professional skills by non-professionals thanks to their fulfilment of unexpected market roles such as sellers, renters and entrepreneurs (Horton and Zeckhauser 2016). Obviously, cases such as that presented respond to profit goals; however, the authors wish to underline that added value related to the temporary user of contemporary cities is assumed by the innovative solutions proposed. These solutions comprise, in fact, the cultural level of the infrastructure as defined by Bauwens (see paragraph 1). "What democratic innovation entails is currently defined by management and innovation research, which claims that innovation has been democratised through easy access to production tools and lead-users as the new experts driving innovation" (Björgvinsson et al. 2010, p. 41). The combination of bottom-up and P2P interactions entered into the local entrepreneurial approach.

Another interesting aspect is that scale-up economic models, such as Airbnb, have also been able to trigger the conditions to develop scale-down cases. Large-scale models of geographically widespread hospitality make people familiar with new forms of social networks, self-managed businesses and temporary hospitality, with the result that part of the contemporary strategic logic has become accessible and understandable to more people, facilitating the development of win–win business models. *Italianway* is an example of the translation of a global model to very specific economic and cultural patterns. For example, this service is not based solely on the ability of the guest but on a designed contact system (the neighbourhood reception, the guided tours, the environment of the interiors).

Italianway is still neither top-down nor bottom-up; neither is it a P2P service, but rather an alternative one. It strengthens the P2P values, bringing some of them back to a traditional entrepreneurial model based on a skills transfer (traditional intermediaries between owners and renters). On the one hand, it acquires the platform system for transactions and communications, the diversification of individual consumption and a level and breadth of coverage individuals would lack as regards marketing, budgets and brands. On the other hand, the company has moved to the purchase of intangible goods (the experience of being a temporary inhabitant of the city) and added to it the owned knowledge of the tangible purchase (the real-estate asset) as a guarantee of the trusting relationship that the sharing economy incorporates. Namely, that owners entrust their properties to professionals who are experts in the specific market regulations, bypassing the issues related to the self-regulating logic of the P2P economy, even though these are already mitigated by the digital platform system (Smorto 2016).

The Italian entrepreneurial system, which has traditionally been home to semi-industrialised craftsmanship and a holistic approach of the local into global, reclaims the means of production in the renewed economy: a personalised experience for specific users. "One long-term reaction to the rise of P2P rental markets is that firms might change the goods that they offer. As P2P rental markets become commonplace, manufacturers will begin designing products that cater to this additional purpose. […] The emerging Internet-of-Things will make it easier to identify goods that are not being used at a moment in time and perhaps facilitate nearly seamless trade" (Horton and Zeckhauser 2016 p. 32).

The new hospitality system has started to be a complex system too, made of multiple components. Scaling-down, however, certainly does not mean a simplification or a cancellation of a systemic approach. If we look closely, we can see the path leading to better understanding of a given context (its social, cultural, economic and legal aspects) by assuming its complexity in the development of a design proposal that can fit into the specific space–time condition and, thus, perhaps be more resilient.

The analysis of the development and impact of the case presented creates avenues for reflection on the impact that the sharing economy market can have on alternative local ventures. Not only has its widespread ecosystem made consumer–owners into entrepreneurs, but now it opens the door to the regeneration of traditional entrepreneurial models.

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