

DESIGN AND SOCIAL INNOVATION FOR THE DEVELOPMENT OF HUMAN SMART CITIES

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ABSTRACT¹

Urban transformation is widely recognized as a complex phenomenon, rich in uncertainty. It is the unpredictable consequence of complex interplay between urban forces (both top-down or bottom-up), urban resources (spatial, social, economic and infrastructural as well as political or cognitive) and transformation opportunities (endogenous or exogenous).

The recent attention to Urban Living Lab and Human Smart City initiatives is disclosing a promising bridge between the micro-scale environments and dynamics of such forces and resources and the urban governance mechanisms.

This bridge is represented by those urban collaborative ecosystems, where processes of smart service co-design take place through dialogic interaction with and among citizens within a situated and cultural-specific frame.

As a response to new emerging needs and ways of generating value, during the last decades the design discipline - traditionally bound to the development of tangible artefacts - has expanded its focus on intangible artefacts such as signs, interactions,

processes, and services. In this framework design is orienting its theories and practices towards a different object, putting people at the centre of the smartness of cities by recognizing the need of developing sustainable, micro and contextualized solutions that could eventually be scaled up to achieve larger social impacts (Murray, Caulier-Grice and Mulgan, 2010). The Human Smart City paradigm (Concilio, Deserti and Rizzo, 2014) relies on the capability of the cities to realize and scale up services more sustainable because collaborative in nature based on anthropocentric networks that support the emergence of new typologies of partnerships of actors interested to solve some unmet societal problem. The paper presents this vision by discussing the results of a long-term experimentation conducted in the city of Milano under the framework of the *My Neighbourhood* European project.

INTRODUCTION

The world's urban population is expected to double by 2050. By 2030, six out of every ten people will live in a city and by 2050 this figure will run to seven out of ten (World Health Organization, 2014). In real terms, the number of urban residents is growing by nearly 60 million people every year. As the planet becomes more urban, cities need to become smarter and major urbanisation requires new ways of managing the growing complexity of urban living.

¹ This paper is the result of the equivalent authors' effort.

In this context the concept of Smart City (SC) emerged as an innovative *modus operandi* for the future urban living and as a key strategy to tackle wicked everyday problems and challenges for citizens. Despite the current wave of discussion and debate on the value, function and future of SC as a concept it resists easy definition.

At its core, the idea of SC is rooted in the creation and connection of human capital, social capital and Information and Communication Technology (ICT) infrastructure in order to generate greater and more sustainable economic development and a better quality of life (Directorate General for Internal Policies, 2014). In truth, there are many perspectives on SC: some focus on ICT as a driver and enabler, while broader definitions include socio-economic, governance and multi-stakeholder aspects, such as the use of social participation to enhance sustainability, quality of life and urban welfare.

This paper embraces the vision of the Human Smart City (HSC) network as developed in the context of two European Projects *Periphèria* (www.periphèria.eu) and *MyNeighbourhood* (www.my-neighbourhood.eu).

The HSC vision conceives smart cities as ecosystems where physical and digital infrastructures are introduced and implemented in a systemic relation with the city human capital. The human smart cities are both systematic and anthropocentric, and they are designed so they operate at scale, they achieve the things that cities need, but they create large areas in which social relation and empathy are possible. So Barcelona is a classic example in Europe, is a city that both works, has good infrastructure, great airport, it has transport that works, is a top of working city, and jet is has a spiritual conviviality and civic association in lot of small pockets, which is very important. This is Curitiba in Brazil, one of the most impressive cities in the world that has implemented an amazing bus system for number of passengers and speed of connection, but it creates civic spaces which are open and easy to access and convivial, and the solution to some problems like recycling depends not on big systems but on creating lot of micro recycling entrepreneurs who create a business out of collecting rubbish and then recycling it. So, this is a city which is designed in a systematic way, it has plans for transport, and building, and regulation, but it also realizes that it's future depend on mobilize it's citizen in solutions.

This is absolutely model solution in ways in many cities and it aims to address public and societal issues (or wicked and unmet people problems) via ICT-based solutions on the basis of complex multi-stakeholder partnerships, including the same municipalities (Concilio, Deserti and Rizzo, 2014).

The HSC vision emphasises social innovations and the processes and the interrelations that come into play at locally. An overview of the social innovation phenomenon in relation to the HSC suggests that it

primarily occurs in urban complex ecosystem where citizens, institutions, private actors, interact in a mesh of flows and dynamic artefacts to solve everyday problems by making reliable solutions.

Such social innovations in cities can be situated at the very micro or macro level of the society, they can be agenda driven or process based or a mixture of both (Manzini and Rizzo, 2011).

The operationalization behind the HSC vision is a design approach that starts from micro-experimentations (solving context dependent problems) that eventually *up-scale* toward macro-transformations (addressing a vision). Small, local social innovations and their working prototypes can be scaled-up, consolidated, replicated, and integrated thanks to open urban ecosystems (Urban Living Labs) to generate large-scale sustainable city transformation toward and system of actors and infrastructures that interact and take advantages from each other in a complex way. Social innovations viewed in this way do not necessarily mark a break with the large institutions and often they allow to move up the institutional system and to provoke changes within it.

In the following the paper illustrates the application of this design approach along an extensive experimentation of service design in the city of Milano. The idea behind the experimentation was to understand the extend to which the design of a series of small and collaborative services, inspired by social innovation and synergies among them on the basis of a common vision, would trigger impacts in terms of transformation of the city towards the HSC paradigm. Specifically the paper discusses the experiments conducted in Quarto Oggiaro, a peripheral neighbourhood in the city of Milano, as a set of small scale initiatives that the *My Neighbourhood* project has tried to discover, amplify and design to address some of the important social challenges of the neighbourhood.

THE MYNEIGHBOURHOOD PROJECT

My Neighbourhood is a EU-funded research project started in January 2013 with the goal of applying service design methods and tools in 4 different European neighbourhoods (in Lisbon, Milano, Aalborg and Birmingham) to identify and support the establishment and the upscale of grassroots and community-based initiatives and social innovation practices, through the adoption of a web-based service platform. The project is operating in a typical ICT research area, introducing the idea that advanced participatory design methods can make the difference in the level of innovation of the proposed solutions, since the development process starts from people and not from the available technological paradigm.

My Neighbourhood is trying to further develop the HSC paradigm by amplifying and connecting existing grassroots social initiatives in the 4 different neighbourhoods to show the potentials of connection

and collaboration in designing, experimenting, assessing and up-scaling collaborative services. In particular, *My Neighbourhood* is experimenting codesign as the most suitable design methodology to develop public and collaborative services with the aim of building complex partnerships of actors who can co-produce the services (and keep them alive after the project). Beyond this first goal *MyNeighbourhood* Milano represent an attempt to impacts on the municipality policy for the Quarto Oggiaro Neighbourhood and on the processes through which the Municipality of Milano implement policies through services.

In this paper the authors will: (i) develop the relation between the *MyNeighbourhood* design framework and the concept of public and collaborative services; (ii) present the *MyNeighbourhood* aims, context of application and design process and (iii) describe some of the *MyNeighbourhood* first solutions and discuss them in relation to the above-described HSC paradigm.

MYNEIGHBOURHOOD DESIGN FRAMEWORK

MyNeighbourhood design framework can be described by identifying: (i) the objects to be designed; (ii) the design approach and (iii) the methodologies adopted to support the design process.

PUBLIC AND COLLABORATIVE SERVICES

Public and collaborative services (Baek, Manzini and Rizzo, 2010; Pueri et alii, 2013) are the first asset of the *MyNeighbourhood* design framework. They have been defined as new valuable services resulting from a process of co-design and co-production that can take place through new forms of partnership involving citizens, municipalities, as well as other public and private stakeholders, which directly address the challenges that they face in their cities.

Main characteristics of these services are: (i) a new productive model based on the co-design and co-production of the services through new partnerships, explicitly inspired to social innovation and its underpinned economic dimension; (ii) a series of tangible and intangible artefacts through which the services are conceived, delivered, perceived and used (services blue prints, actors' maps, business models, service touch-points).

Collaborative services can stem from social innovation and most of the social innovation experiments do become collaborative services at their mature stage.

COMPLEX PARTICIPATORY DESIGN

Co-design is the second asset of *My Neighbourhood* design framework: the project introduces the idea of co-design as the most suitable approach to create the conditions to envision cities as ecosystems where citizens and networks of stakeholders can co-produce solutions in in complex partnership and including physical and digital infrastructures. Co-design in My

Neighbourhood takes the form of complex participatory design processes; systemic actions involving a large number of actors and stakeholders in a frame of tensions or open conflicts. Co-design postulates going beyond the established UCD practice, extending the idea of participation in the design process to include: 1) the design of the coproduction model in which services will be produced; 2) the design of the partnership (or the network) that will coproduce the service/s (Binder et alii, 2011; Bjorgvinsson, Ehn and Hillgren, 2010; Ehn, 2008; Halse et alii, 2010; Hillgren, Serravalle and Emilson, 2011; Ho and Lee, 2012; Light, 2012; Deserti and Rizzo, 2014; Deserti and Rizzo, 2011)

In this framework co-design can be thus introduced as a way of envisioning possible future solutions by creating strong connections with the network of stakeholders belonging to a place, establishing a long-term engagement with local communities leading to the emergence of new practices and new opportunities for design.

To introduce this notion of PD we refer to Ehn (2008) and Bjorgvinsson, Ehn, Hillgren (2010). Both articles represent a significant contribution to the debate on participatory design since they propose a radical shift in its conceptualization: from the traditional view that considers the object to be designed as a well-defined product or service, and where final users become co-designers (Rizzo, 2010), to a new definition that sees the participation as the design process for the realization of new long-term partnerships for the sustainability of collaborative services. In fact what is new in this vision is the object of design from a product to a process of co-design and co-production that transform the social context (a city, a street, a neighbourhood, a square) by facing unmet societal challenges.

From this point of view the news that the practice of co design in *MyNeighbourhood* introduces with respect to the tradition of participatory design in planning and urban studies (Sclavi, 2000) are twofold: from one hand the notion of co-design here introduced refers to the construction of partnerships and new business models for innovative services that operate; from a second hand here co-design works at the micro scale of the city instead of governing decision making processes on infrastructures, policy making, regulations, citizens participation to the political debate.

On the basis of this new notion, we adopt the idea that co-design has become a highly dynamic process (Manzini and Rizzo, 2011). Therefore, co-design can be something that also includes linear processes and consensus building methodologies (i.e., the most traditional view of participatory design), but goes far beyond them, becoming a complex, articulated and often contradictory process, or else what we call Complex Participatory Design (CPD).

Figure 1 (Rizzo and Cantù, 2013) exemplifies the role of design in complex participatory processes:

- Community building, consisting in the identification of the first network of actors that will take part in the co-design process: the community moves from the recognition of a common problem and seeks to collaborate together to find a solution;
- Encouraging usage, consisting in the real experimentation of the envisioned solution: in this phase the solution meets the context and co-design acts as a continuous open innovation strategy supporting further elaboration in favour of the goodness of the solution;
- Expanding and adapting, consisting in making the initial partnership larger and stronger by implementing a process of alignment of the different interests of the actors around the solution in order to offer it in a stable way (sustainability of the solution).
- Managing the conflicts that occur within the partnerships and that often depend on the distance between the long term objectives of each of the realisation of the model of co-production that make sustainable the envisioned solution/s after the experimentation;
- Supporting the development of quasi-institutional or intermediate organisations of people services and infrastructures within cities through the implementation of living labs, incubators, third part intermediaries, accelerators that operate to diffuse the culture of open innovation in cities.

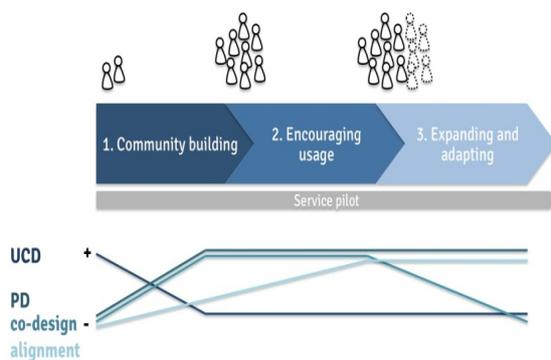


Figure 1: The figure shows that PD works better when, in the development of a collaborative service project, the process moves from the establishment of the first community to the foundation of the final stakeholders' network that will co-produce the service.

Co-design in *MyNeighbourhood* becomes a complex design process whose object is the realisation of a long terms strategy of co-production of services that tackle cities challenges. In *MyNeighbourhood* the societal challenges of the neighbourhoods are the problems to be solved through the development of collaborative services inspired by social innovations.

Designers work with stakeholders to identify the emerging needs and to create digital and physical platforms that will enable participation and coproduction, being open to different project

development directions and perusing the sustainability of the designed solutions.

My Neighbourhood build on the peculiar conditions and resources of the local communities engaged in the pilot experiments, providing a platform for engagement that transcends traditional models of co-design.

The challenge is to provide evidence of what can be done beyond the co-design, with a twofold aim: (i) addressing problems of the context; (ii) establishing a long-lasting strategy of innovation for that context.

The expected outputs of the experimentation of Complex Participatory Design processes are:

- The methodologies for the municipalities to manage complex participatory processes, putting together citizens, private and public stakeholders in new typologies of partnership;
- The partnerships focused on collaborative services in the 4 piloting contexts;
- A strategy of continuous open innovation to support the scaling up of the envisioned solutions.

SERVICE DESIGN METHODS

Service design is the third asset of the *MyNeighbourhood* design framework. It focuses on (re)designing service processes and service experience, today recognised as relevant drivers of innovation.

My Neighbourhood explores the potential of service design tools to support the generation of ideas and the process of focusing entrepreneurial opportunities based on Smart Cities enabled solutions in the pilots' contexts.

The assumption underpinning *MyNeighbourhood* is that service design routinely deal with many of the same issues that new ventures face: involving a wide variety of actors and stakeholders, creating a network of partners, building intangible experiences and outcomes and prototyping and assessing immaterial ideas before any further resources are committed to implementation.

Users orientation and contextualization are at the core of service design, which has recently emerged as the way to introduce a human-centred approach in the frame of SC (Rizzo et alii, 2013). If we look at how services are designed and implemented, service design may be defined as a user-centred process meant to understand both the customers' needs and the needs of the other stakeholders involved in the service processes, exploiting this knowledge to design the service interactions (Kolko, 2011).

In *MyNeighbourhood* the Service Design contribution seeks to identify the social and functional relationships that aim to generate prosperous complementarities inside a context and to develop services able to generate social sustainability. This approach led *MyNeighbourhood* to identify the inter-relationships that may improve the quality of life inside the contexts of the project and to develop services able to generate social and relational qualities. The outcomes of this

process have been a series of service projects to be piloted in the 4 neighbourhoods engaging local resources and actors.

MYNEIGHBOURHOOD SERVICE DESIGN PHASES

The development and the experimentation of the services were structured in 5 phases: exploration, sense making, idea generation, service design and piloting.

Exploration deals with understanding the contexts where the design action must take place. The context analysis in *My Neighbourhood* started with explorative activities aimed at identifying local resources. In this phase everything that could help designers to set the starting conditions for the projects was mapped: socio-economic context characteristics, points of strengths and weaknesses of the neighbourhood, entry points, active people and associations, gatekeepers, infrastructures, projects and initiatives.

Exploration was slowly transformed into a sense making work, where the rich information collected in the exploration phase was analysed and interpreted, in order to work out facts, uninspected elements, needs and challenges supporting design phase. The design teams formalized some semi-worked elements: maps of the stakeholders, resources maps, personas, video and pictures from the contexts, people and stakeholders WINs (wishes, interests, needs). In this phase a first hierarchy of priorities was pointed out: issues and challenges to be addressed were extracted and prioritized with respect to the stakeholders' feelings and opinions.

Idea generation. This phase was the first design activity that was conducted in collaboration between designers, citizens, stakeholders and municipalities. It was mainly devoted to working out together and sharing provisional ideas – new activities, processes, systems or touch-points – that could be turned into effective solutions to the challenges listed during the sense making activity. In each of the pilots this phase ended with a set of ideas that were analyzed and selected applying different criteria: the feasibility with respect to the available resources and to the *My Neighbourhood* larger objectives; presence of a first group of stakeholders interested in entering the phase of service design and in experimenting with the envisioned solutions; potentiality of the idea to be scaled and to have a market; presence of a robust digital dimension with which to experiment FI solutions.

Service Design. This phase moved forward the design selected design concepts to what they could become in reality. This phase included co-design activities conducted in strong collaboration with non-professionals from the context and from the municipality. The mixed team developed for each service a set of detailed design elements: the user experience, the service blueprint for front and the back end; the map of the stakeholders that would support the service implementation and delivery, the business

model. With these elements the pilots started the service implementation phase.

Piloting. In the pilot phase the developed solution really enters its context to be experimented. Here local players are asked to try and test the solution to report feedbacks and feasibility hints. This phase corresponds to the activation of a prototype, in the form of a real in-place service, meant to test technical, functional and experiential features.

For the sake of brevity in the following we will report the experience conducted in the Milano pilot experimentation.

AN EXAMPLE OF THE ENVISIONED SOLUTIONS: THE MILANO PILOT CASE

The Milano pilot experiment is taking place in the Quarto Oggiaro neighbourhood, located in the northwest area of Milano, not far from the Expo location. Here the entire service design process has been conducted thanks to a strong collaboration between the Politecnico di Milano (holding a long tradition in design and in urban planning research) and the Municipality of Milano. This mixed design team performed all the activities in the contexts and managed the interactions with the local communities and stakeholders to engage them in the co-design process and in the service experimentation.

The First months have been dedicated to exploring and approaching the neighbourhood: the design team started understanding physical aspects of the neighbourhood, the characteristics of its population, its socio-economic dimensions, the main actors operating in the context, the relation between the neighbourhood and the rest of the city and the characteristics of the urban services already offered in the neighbourhood.

After that a period of intensive co-design meetings started. In this phase the design team established 4 different design tables, involving designers, urban planners, people from the Municipality of Milano, representatives of the local associations and people from the neighbourhood. Each table started from a complex discussion on the relevant neighbourhood issues, ending with a list of main challenges:

- regenerating disused and derelict public areas;
- improving social life and inclusion of elderly people;
- preventing school drop-outs and creating job opportunities for young people;
- exploring and testing new potential entrepreneurial opportunities and business models for start-up companies.

Starting from these challenges, the design tables then worked to elaborate four possible service ideas as smart solutions for the framed problems. Out of four, two ideas were selected for the whole development and

care of some green spaces in the neighbourhood. A focal point for the experimentation of the service could be Piazza Capuana, the crucial place in Quarto Oggiaro, where the service is planned to start. This choice was made in order to make the impact of the service and the action of the *MyNeighbourhood* project highly visible in the local community (Figure 3).

CONCLUSIONS

The approach presented in this paper focuses on the construction of a design framework for the development of public and collaborative services in the frame of the HSC paradigm. This paradigm is based on the idea of involving local players in the design process, generating local solutions that can be subsequently transferred and scaled up. The experimentation of this approach is still on-going, but we can draw a few conclusions from the service design phase, taking into account the processes, the tools and the interaction among the subjects that took part in the experimentation.

The bottom-up nature of the people-centred services made clear that in their design and implementation in cities it is fundamental to consider a range of questions bound to their relation with a more strategic level. Are the objectives of the local services relevant, appropriate and aligned with the broader city development objectives? Does the initiative address problems of importance to the city in question? Is the mix of funding, participation, components and characteristics likely to produce the expected outcomes? If possible, it is important to consider larger impacts than just the local ones.

If we want the HSC vision to deserve consideration from the municipalities across Europe and worldwide, as well as from the SC research community, as a way to foster a new more sustainable urban development by developing better services, the experimentation conducted in *My Neighbourhood* help us drawing a few general conclusions:

- Complex Participatory Design, as defined above, needs to become an institutional point of view and to be adopted by the municipalities that recognise the need to build new service infrastructures through innovative productive partnerships;
- Even if the core value of the public and collaborative services resides in the meaningfulness that they can offer with respect to the solution of wicked problems, up to societal challenges not met by the standard offering of public services, to be implemented they first have to deliver value for the partners taking part in the network;
- Innovative solutions can be built starting from a specific context, but we must find ways to reconnect them to a wider frame to create general urban value. A context-dependent model of urban development appears to offer a structure within which to shape new dynamics between top-down

policy development in the whole cities and bottom-up experiments in the local contexts.

- design-driven experiments with public services become social innovation when they are reconnected to a larger frame, and when the experimented solutions are synergized with others and scaled up. This means that the traditional top-down perspective of the public bodies can be usefully integrated with the capacity of being close to the real needs of citizens that comes from the PD practices, recognizing “weak signals” and turning them in solutions to be tested, assessed and amplified in connection with a larger vision.

Finally lesson learnt for designers and design practices and/or projects evidenced that:

- complex participatory design processes are not just about introducing solutions, but also about changing the frame where these solutions are introduced. Context is not only an ex-ante entity that we can analyse, draw information from and interpret before the design action, but a living environment that might be transformed during the design process;
- One of the agents that may be significantly transformed through and during the design process is the organisation that leads the design process itself. On this we based some reflections on the relation between design and organisational change (Deserti and Rizzo, 2015). Adopting a co-design point of view for the conception of collaborative services for cities imply a profound change of the culture of the municipality that deliver these services;
- The new territories of application of design approaches and methods typically amplify the systemic dimension of the problems to be faced. Those that we used to consider the traditional design objects in cities can be seen as terminals of complex systems that may become the very object of the city transformation.

The risk for designers entering these territories is twofold:

- Seeing just the top of the iceberg do not be capable to guess the impacts of a complex participatory design approach on the process of delivery of public services (new services require new processes to be delivered in a sustainable way);
- Imagining that design by itself may have the capacity of changing the system as a whole.

Within these new territories, design sits in the uncomfortable position of being asked to combine operational effectiveness and strategic positioning.

REFERENCING

Baek, J., Manzini, E. and Rizzo, F. 2010, *Sustainable Collaborative Services on the Digital Platform*. Paper

- presented at the Proceedings of the Design Research Society Conference, Université de Montréal.
- Bjorgvinsson, E., Ehn, P. and Hillgren, P-A. 2010, *Participatory Design and Democratizing Innovation*. Paper presented at Proceedings of the 11th Biennial Participatory Design Conference. New York: ACM.
- Brandt, E. and Binder, T. 2011, *Six Views in a Box. Dialogues on Everyday Life with Alzheimer's*. Copenhagen: The Danish Design School Press.
- Concilio, G., Deserti, A. and Rizzo, F. 2014, *The Human Approach to Smart Cities: The Periphèria Project as a Case of Complex Participatory Design*. Diversity: Design/Humanities. Paper presented at the Proceedings of Fourth International Forum of Design as a Process (pp. 47-56). Conselho Sales - Barbacena: EdUEMG.
- Deserti, A. and Rizzo, F. 2014, Design and the Cultures of Enterprises. *Design Issues* 30 (1), 36-56.
- Directorate General for Internal Policies - European Parliament 2014, *Mapping Smart Cities in the EU*.
- European Commission 2012, *Study on Collaborative Production in eGovernment (smart 2010-0075). Part 1. Practice and Implications*.
- European Commission - Design Leadership Board 2012, *Design for Growth and Prosperity*.
- Ehn, P. 2008, *Participation in Design Things*. Paper presented at Proceedings of the 10th Biennial Participatory Design Conference. New York: ACM.
- Halse, J., Brandt, E., Clark, B. and Binder, T. 2010, *Rehearsing the Future*. Copenhagen: Danish Design School Press.
- Hillgren, P-A., Seravalli, A. and Emilson, A. 2011, Prototyping and Infrastructuring in Design for Social Innovation. *CoDesign International Journal of CoCreation in Design and the Arts*, 7 (3-4), 169-183.
- Ho, D. K. L. and Lee, Y. 2012, *New Roles of Designers in Democratic Innovation: a Case Study in the Ingenuity of Ageing*. Paper presented at the Proceedings of the Participatory Design Conference, Volume 2. New York: ACM.
- Kolko, J. 2011, *Thoughts on Interaction Design*. Burlington, MA: Morgan Kaufmann.
- Light, A. 2011, *Democratising Technology: Making Transformation using Designing, Performance and Props*. Paper presented at the proceedings of Conference on Human Factors in Computing Systems Conference. New York: ACM.
- Manzini, E. and Rizzo, F. 2011, Small projects/large changes: Participatory design as an open participated process. *CoDesign International Journal of CoCreation in Design and the Arts*, 7 (3-4), 199-215.
- Manzini, E. and Rizzo, F. 2012, *The SEE Project: a Cases-Based Study to Investigate the Role of Design in Social Innovation Initiatives for Smart Cities*. Paper presented at the Proceedings of INPUT 2012 Seventh International Conference on Informatics and Urban and Regional Planning. Milano: Franco Angeli.
- Meroni, A. 2007, *Creative Communities. People Inventing Sustainable Ways of Living*. Milano: Polidesign.
- Meroni, A. and Sangiorgi, D. 2011, *Design for Services*. Farnham: Gower.
- Murray, R., Caulier-Grice, J. and Mulgan, G. 2010, *The Open Book of Social Innovation*. Report published by NESTA and The Young Foundation.
- Pueri, E., Concilio, G., Longo, A. and Rizzp, F. 2013, *Innovating Public Services in Urban Environments: SOC Inspired Strategy Proposal*. Paper presented at the Proceeding of 8th International Forum on Knowledge Asset Dynamics. Segreb, Croatia.
- Rizzo, F. 2010, *Co-design versus User Centred Design: Framing the Differences*. In Guerrini, L. (ed.) *Notes on Design Doctoral Research*. Milano: Franco Angeli.
- Rizzo, F. and Cantù, D. 2013, *From Designing in Protected Environment to Designing in Real Contexts*. Paper presented at the Proceedings of the 5th International IASDR Conference. Tokyo, Japan.
- Rizzo, F., Concilio, G., Marsh, J. and Molinari, F. 2013, *The Living Lab Approach to Codesign*. Paper presented at the Proceedings of Co-create Conference, Aalto University.
- Rizzo, F. and Deserti, A. 2014, Small Scale Collaborative Services: The Role of Design in the Development of the Human Smart City Paradigm. In Streitz, N. and Markopoulos, P. (eds.), *Proceedings of DAPI 2014*: LNCS 8530, 583–592. Springer.
- Scavi, M. 2000, *Arte di ascoltare e mondi possibili: come si esce dalle cornici di cui siamo parte*. Pescara, Le vespe.
- World Health Organisation - Global Health Observatory 2014, *Urban Population Growth*. Retrieved 29 April, 2014, from http://www.who.int/gho/urban_health/situation_trend/s/urban_population_growth_text/en/.

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