

Hall of the Future: a Systemic Research Project for Public Interiors and Spaces using Co-Design Tools.

Luisa Collina ^a | Laura Galluzzo ^a | Claudia Mastrantoni ^a | Vanessa Monna ^{a*}

^a Politecnico di Milano, Design Department: Milano, Italy.

* Corresponding author: vanessa.monna@polimi.it

ABSTRACT

Systems theory and its guidelines - systems thinking - have been promoted as the most relevant practice for raising social awareness about interconnected complex systems. Systemic Design intends to develop methodologies and approaches that help to integrate systems thinking with design towards sustainability at the environmental, social and economic levels. Based on the *Hall of the Future* requalification project, designed with the Chamber of Commerce of Milan, this essay describes a Systemic Research project with a focus on the use of a Co-Design approach within the process. Moreover, it illustrates an established relationship between two different public institutions, highlighting how to share a fresh approach to designing new services aimed at the world of business, trade and tourism, and the consequent re-functionalization and enhancement of its given spaces.

Keywords: Co-Design, Public Institutions, Public Spaces, Service Design, Spatial Design, System Thinking.

INTRODUCTION

As the world is perpetually changing, the interdisciplinary field of design is moving away from its traditional objects of interest. In fact, literature describes the design field as an interdisciplinary field that reflects and interacts with present times and transforms itself continuously in relation to sociotechnical changes.

This mindset enables designers to align themselves to the current issues and challenges through their expertise, qualities and ways of thinking. Thus, the designer is able to respond to important challenges that don't only fall into one field of study (Ito, 2014).

Systems theory and its guidelines - systems thinking - have been promoted as the best techniques for raising social awareness about interconnected complex systems (Jones, 2014). Across recent literature is an approach that defines an integration of systems thinking and design thinking as a strong systemic view of complex system problems addressable by the intuitive and abductive approaches implicit in design thinking (Jones, 2014).

As Ryan suggests, Systemic Design results at the convergence of two interdisciplinary fields, systems thinking and design thinking (Ryan, 2014). It also integrates human-centered design, with the intention of helping designers cope with complex design projects and several stakeholders, in forecasting new scenarios as the goal of a strategic project. This article describes three projects, in which the authors were involved as facilitators, where Systemic Design is associated with Co-Design approaches. Indeed, since Systemic Design is an “approach to working together to act, reflect, and learn while doing” (Ryan, 2014), Co-Design seems to be relevant in this kind of discussion. Both Systemic Design and Co-Design provide methods to deeply empathize with a large diversity of stakeholders, working with them to understand the challenges of the system and build a “rich design space” (Sevaldson, 2010) around them.

1. DESIGN PROCESS AS SYSTEMIC DESIGN

Recent challenges, such as the increased complexity caused by globalization, migration and sustainability, mean that traditional design methods are insufficient. Indeed, design is shifting from a craft-oriented discipline into one characterized by a holistic approach (Buchanan, 1992), where seemingly independent areas of intervention overlap and intersect. Design as a multidisciplinary field is connected with social environments, products, services, systems and brands (Friedman, 2002; Muratovski, 2010). In particular, the design practice has already started moving towards systems characterized by “complexity, uniqueness, value conflict and ambiguity over objectives” (Ryan, 2014). A systemic perspective within the field of design is deemed necessary in order to confront the challenges of these systems. This perspective is provided by what has been called Systemic Design.

Systemic Design intends to develop methodologies and approaches that help to integrate systems thinking with design towards sustainability at the environmental, social and economic levels. It is a pluralistic process where many different approaches are encouraged and where dialogue and organic development of new practices is central. Systemic Design enables stakeholders to quickly transition from creative leaps to tangible actions, which are able to profoundly transform the current scenario. In order to achieve this, the object of a Systemic Design shifts to a strategic dimension and vision around the object, more related to scenario building.

In this essay, three different projects are presented. These projects are part of a wider strategy sought by the Chamber of Commerce of Milan, Monza Brianza and Lodi (from now on Chamber of Commerce). We will describe the projects, dwelling on the process, and the

creation and use of tools appropriate to the realization of what we design (Redström, 2017). In particular, we will be talking about how using Co-Design tools improves participation in the discussion and the involvement of a large and diverse number of stakeholders. The projects regard the design of Spaces+Services (Fassi et al., 2018) using a systemic approach connected to Interior Public Spaces and Public Administrations.

2. FRAMEWORK

2.1. Spaces+Services

Since human beings primarily experience the spatial dimension of their context, the discipline of spatial design transforms spaces not only in terms of their physical appearance, but also in relation to the system of appropriate actions and soft interactions. Indeed, the physical nature of a place facilitates interactions between people, engaging them with that given context. In this way, “the design of public and private spaces meets the relational nature of services, in a mutual influence that affects the creation of meaningful social environments” (Fassi et al., 2018). Spatial Design meets Service Design, generating “a wide range of settings (...), dealing with urban planning, workplaces, retail, private interior spaces, public services and infrastructures” (Fassi et al., 2018). In these settings, spaces accommodate human relationships, and, at the same time, services take place in tangible environments and influence physical developments.

2.2. Public Interiors

An interesting concept within Systemic Design is the idea of interdependence between the parts of a greater whole and their environment. In this sense, one of the design areas in which it is possible to apply a Systemic Design approach is the transformation of public spaces, especially in relation to the sociotechnical changes of their parts.

Nowadays, growing cities have transformed their relationship with public spaces. Few public areas now meet the requirements that enable them to be perceived as “public”. There are new ways of communicating, socializing and interacting. The new digital dimension has sparked new possibilities and challenges where coffee shops, shopping malls and other types of spaces have opened the door to new ways of public living. Sometimes, the digitization of services has emptied the spaces they once occupied, leaving behind a spatial heritage that has to be reallocated. The physical touchpoints try to attract or foster possibilities for emerging activities. These types of spaces are defined as “third places” by sociologist Ray Oldenburg, where first places are homes and second places are workspaces (Oldenburg,

1999). These places act as "anchors" of community life and facilitate and foster broader, more creative interactions.

In 1992, the Spanish architect Manuel de Solà-Morales already suggested that the civic, architectural, urban and morphological richness of a contemporary city resides in the collective spaces that are not strictly public or private, but both simultaneously (de Solà-Morales et al., 1992). These are either public spaces used for private activities, or private spaces that allow for collective use, and they include the whole spectrum in between. These kinds of spaces are referred to as "Public Interiors" (Poot et al., 2015).

To better understand what we consider as "Public Interiors", we may examine what Mark Pimlott affirmed in *The Public Interior and Idea and Project 2016*: he explains that some interior spaces could be considered as "public, even though they may be privately owned and operated". So, these spaces are perceived as public, not necessarily in terms of ownership, but in terms of their capability to accommodate public functions and behaviours.

A difference between Public Spaces and Public Interiors may be shown by the concept of "accessibility", understood as permeability, as being able to enter a space without hesitation and effort (Poot et al., 2015). Indeed, the accessibility of a Public Interior may be limited in time, for practical reasons.

With the development of new commercial and industrial institutions between the XVIII and XIX centuries in Europe, in spaces offered by buildings such as public administrations, jurisdiction, education, discipline and consumption, the concept of "interiors" as the embodiment of a new kind of public sphere materialized. The design of such interiors, environments for public performances, provided the city with a series of spaces within which to accommodate a range of collective initiatives. Subsequently, with technological advancement and the spatial logistic of increased control, public and collective practices were, increasingly, located inside buildings. This "interiorisation of public life" (Çiçek et al., 2018) explains how parts of the city are *in continuum* with some interiors, or as Koolhaas (2002) names them, "infrastructure of seamlessness", where the thresholds are no longer clearly defined.

Over the past decades, the design of this kind of collective space seems to have become an important *modus operandi* in the contemporary city. At the intersection between architectural and urban scales, architects and urban planners design projects that, through

their character and hybridization of privacy and publicity, contribute to the civic, typological and morphological richness of the city (Avermaete et al., 2006).

2.3. Public Institutions

Public institutions have played an important role in the cities since their foundation, historically acting as an emblem of local power and authority. Nowadays, their image as perceived by citizens has changed: indeed, citizens may feel distanced from their public institutions or less engaged with them. The most advanced cities are those where public institutions provide platforms for dialogue with their citizens. For this reason, public spaces assume a fundamental importance, as they are the places where 'civicness' (Evers, 2010) is realized. Evers understands the notion of "civicness" as being mutually complementary to that of "civility" and identifies it as people's identity and role as citizens, the impact and qualities of citizens' collective actions and the role of public institutions in fostering such behaviours, providing a space for these actions.

3. SYSTEMIC DESIGN FOR THE CHAMBER OF COMMERCE

Milan is considered the liveliest and most creative metropolitan area in Italy, open to welcoming a wide range of new metropolitan actors. Among the public actors involved in the growth of the city, we find in terms of economic growth, the Chamber of Commerce, and in terms of research and education, the Politecnico di Milano.

Based on the principle of subsidiarity, the Chamber of Commerce conducts functions of support and promotion of businesses and administrative functions, devoting specific attention to: those in the field of legal advertising and protection of consumers and public trust; support for the competitiveness of businesses and the territory, by providing, for example, technical assistance for the creation of start-ups; enhancement of cultural heritage, development and promotion of tourism; Guidance for work and professions; and support for digitization and improvement of environmental conditions. The principles on which these are based are transparency, effectiveness and efficiency.

In the last two years, the Chamber of Commerce and the Politecnico di Milano have established a collaboration within the field of design research, sharing an innovative systemic approach to re-think the offer of services aimed at the world of business, trade, and tourism, and the consequent re-functionalization and enhancement of the Chamber of Commerce's spaces.

We now describe three projects born from this collaboration (Figure 1), focusing on the last one, as it is the one with an all-round approach. Indeed, this project allows us to investigate how the systemic nature of *Spaces+Services* Design unfolds, as spaces and services mutually influence each other. In particular, a Co-Design approach was applied to this Systemic Design project, dealing with:

- the relationship between the operators of the Chamber of Commerce and its clients;
- new ways of working within historical public institutions;
- new ways to experience the spaces of the public institution, aiming at broadening its public appeal;
- introducing new kind of services, combining a digitized and analog nature.

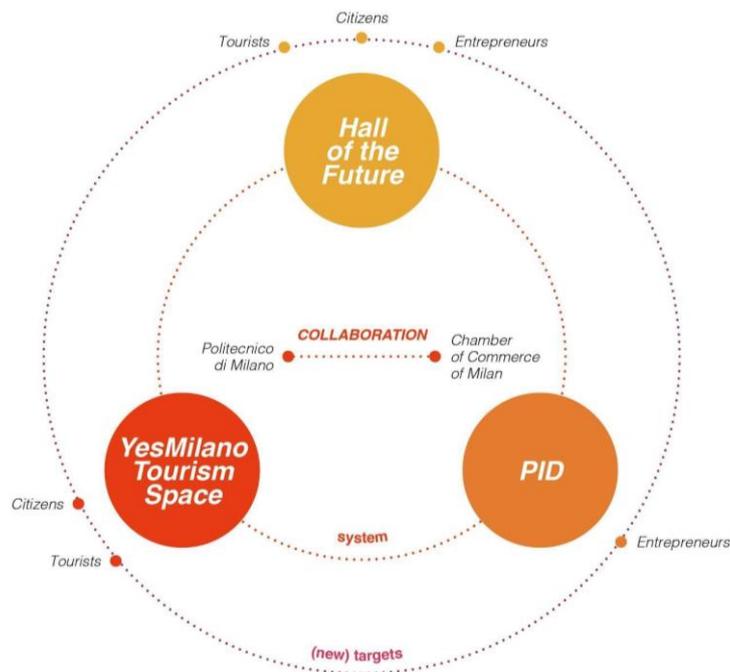


Figure 1. System of the three projects and targets addressed

3.1. YesMilano Tourism Space

The first project, *YesMilano Tourism Space* is conceived as a multimedia living room for newcomers, travellers and city users, designed to welcome tourists and citizens in an environment where analog and digital technology meet, creating a multi-sensorial

experience. This informative, engaging and unexpected space allows visitors to discover Milan and the Lombardy Region. This new service takes place in a historical building in the city Centre, inside the *Palazzo Giureconsulti*. Due to the importance of the building and its architectural and cultural heritage, several figures were involved in the research process, such as the Superintendent of Cultural Heritage of Milan, who supervised and validated the project.

3.2. PID - Punto Impresa Digitale (PID - Digital Business Point)

The second project also takes place inside the *Palazzo Giureconsulti*, which had been the hub of economic and legal activities in Milan since 1654. This project is a space for exhibitions, interactive and blended learning lectures, and meetings for private and public companies.

3.3. Hall of the Future

Not far from *Palazzo Giureconsulti*, there is another historical building, *Palazzo Turati*, where the headquarters of the Chamber of Commerce has been situated since 1954. This represents an ideal place for Italian and foreign companies to meet within an institutional framework. Every year the structure hosts over 1000 events of all kinds: conventions, seminars, conferences, workshops, gala dinners, representation meetings, training courses, new product launches, exhibitions, fashion shows, showrooms, concerts, film sets and advertising.

The third project takes place inside this building and it's named *Hall of the Future*. This project arose from the Chamber of Commerce's need to re-design its own *Salone Anagrafico* (Registry Office), an emblematic space for the commercial and entrepreneurial fabric of the territory, with the aim of creating a contemporary place, enabling support and facilitating contact and dialogue between the institution and its citizens.

The collaboration between the Chamber of Commerce and the Politecnico di Milano offers an interesting opportunity to engage through a Systemic Design approach, as it works on multiple dimensions, scales and perspectives. Moreover, this collaboration allows us to develop new knowledge through a Research through Design approach (Sevaldson, 2010), in particular in relation to the following research question: how can public interiors be transformed following the new rules and trends of the digitization of public services?

The digital world is increasingly changing the way services are provided, each time becoming more effective, accessible and faster, which are features customers are looking for.

Nowadays, a physical presence is no longer necessary, since digital services take its place.

And the Chamber of Commerce is no exception, as it is slowly migrating to online services, thus reducing the necessity for a physical space in most of its services.

With the prospect of facilitating and improving its relationship with its users, the Chamber of Commerce promotes a progressive digitization of its offered services, which allows important effects to be taken place, such as cost reduction, optimization and simplification of processes, and an improvement in the quality of its services. The idea of digitalization as a faster means, no waiting lines, immediate service, immediate payment, and many other advantages, is part of the new digital era for the public sector, which is being implemented in many countries around the EU (Torres et al., 2005).

4. HALL OF THE FUTURE: PROCESS AND METHODS

4.1. Co-Design and Co-Design Tools

The public sector is a complex organism, comprising several areas, fields and services, each of them designed and experienced differently. For instance, design approaches to innovation in social care might differ from techniques that are suitable for the design of efficient waste management services. Consequently, such variations in the structure and services of these public service systems demand different modes of interaction, relationship, design process and design methods (Adebajo, 2018).

Systems Thinking suggests understanding and acting in the world as if “it is composed of open, purposeful, complex wholes” (Ryan, 2014). Hence, the main aim of this project was to open up the Chamber of Commerce’s interior space to the city, to transform it into a living room for citizens. In order to achieve this result, the Politecnico di Milano suggested to the Chamber of Commerce to apply a Co-Design approach to the project.

The concept of participatory design or Co-Design is not new in architecture, particularly in collaboration with clients. Sanders and Stappers (2008) explained the difference between Co-Design and participatory design as follows: Co-Design is a specific instance of co-creation. In particular, it is the process through which collective creativity is applied over the entire process of design. In general, co-creation (and, thus, Co-Design) is strategic in terms of environmental, social and economic sustainability of the design of the system. On the other hand, participation is the involvement of stakeholders in a discussion. As both of these approaches involve the client, there is a very permeable boundary between the two. For example, Szebco and Tan (2010) freely mixed the two in their examples of Co-Design.

Designers within the public sector promote use of Co-Design. Designers and facilitators working within public sector spaces and services are motivated to engage with Co-Design approaches and develop practices together. They believe that Co-Design reaches its full potential through strong networks, sharing and raising awareness of design in all its forms and provisions, and enhancing the various facets in applied disciplines. Involving all the stakeholders throughout the development process, sharing information and practices, and building trust between people, are some of the key elements identified for a successful Co-Design process (Selloni, 2017).

For the *Hall of the Future* project a team from the Politecnico di Milano and a team from the Chamber of Commerce collaborated (Figure 2). The university team was formed by people who are both academic researchers and designers, and the Chamber of Commerce team was composed of the majority of managers in the main services offered. The Chamber of Commerce team was not involved at the end of the process of design (for example, at the moment of the final decision), but it was engaged in the idea generation phase. This resonates with Jungk's idea that the idea generation phase is an important moment for practising Co-Design (1971 speech quoted by Sanders & Stappers, 2008).

From this perspective, the Politecnico di Milano team acted as a facilitator of the whole process, enabling collaboration between different actors and designing tools to activate their participation (Manzini, 2015).

According to the requests of the Chamber of Commerce, the design of the *Hall of the Future* project had to be characterized by three fundamental guidelines: Flexibility (workstations and exhibition areas must be able to adapt dynamically to the provision of more services and activities); Continuity (the Chamber of Commerce must continue to be the point of reference in terms of offering services dedicated to the growth of businesses, and gradually integrating some innovations); Innovation (the space will gain a modern look, offer brand new services, and also adopt new forms of technology).

Starting from these three design features, the Polimi team, adopting the role of facilitator and sometime mediator, brought people who had no knowledge of design to co-design a space. Specific Co-Design tools focused on spaces were designed, such as visual materials, consisting of spatial layouts, a list of the possible furnishings, and 3D models.

Different actors with different working skills participated in the sessions: designers, architects, managers, officials, press office, and service administrators. Primarily, the

purpose of the Co-Design was to define a spatial layout, while maintaining the limits and requests of the client, that would also be suitable for the services provided for the function of the *Hall of the Future* project.



Figure 2. Pictures of the Co-Design session held in the Chamber's offices.

Based on a plan established by Polimi team, members of the Chamber team were each asked to design an initial layout and, using a semi-transparent graphic board, to define a spatial distribution that modified the current one. This individual work was followed by a collective discussion to identify the most interesting and most suitable spatial division for the project.

Subsequently, a dossier was given to each participant, as a third tool to monitor the Co-Design activity in terms of choice of furniture and spatial elements for each area of the layout. Each dossier, separated into space/function, was divided into three types: furniture; texture and colour; and digital and technological support. Proceeding in collective mode, and analyzing each area, every participant gave his/her own preference by choosing from among those proposed, or in particular cases by adding further suggestions. The dossier also took into account different types of use and interface in terms of service and support offered.

This co-design session and the tools provided helped the research and design team to visualize, share, discuss and design the new functions of the space, their position within the space, and to predict the experience of the final users. The use of technical drawings and diagrams on the plan proved to be a useful tool for sharing ideas and developing concepts, and to easily understand fluxes in the space and, consequently, the identification of the spatial distribution, environmental communication, and wayfinding.

4.2. Stages of the Process of Co-Design

This project integrates a Systemic Design perspective with a Co-Design approach, and academic and research activities. In particular, the project incorporated five stages (Figure 3).

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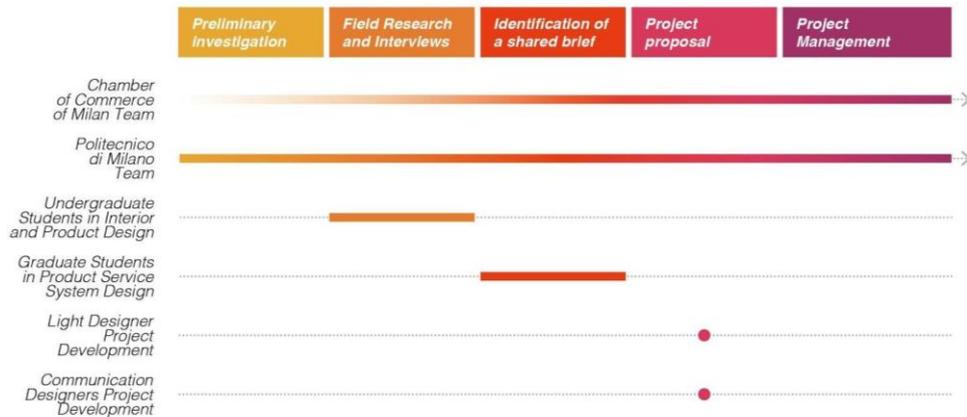


Figure 3. Stages of the Co-Design process of the Hall of The Future Project, highlighting the actors involved in the development of the project.

1. **Preliminary investigation**, analysis of the spaces, services, functions and needs of the Chamber of Commerce operators and clients. Collection of all available materials and preparation of the project research activities.
2. **Field research** and interviews with current users, ethnographic observations and Co-Design activities. These activities aimed to build stakeholders' concepts and develop primary design solutions in terms of services and user experience. This phase also involved **undergraduate students** in Interior Design and Product Design, focusing on the analysis of the current state of the space and on the formulation of some initial working hypotheses from the point of view of Interior Design and Product Design (with particular attention to the design of furniture and opportunities for interaction).
3. Systematization of the first results and identification of the most promising project guidelines, in order to **identify a shared structured brief**. This third activity involved fifty international students of the **Product Service System Design (PSSD)** Master's Degree course of Politecnico di Milano. The students were asked to expand the knowledge of the current state of the *Salone Anagrafico* in terms of services provided, in order to formulate some initial working hypotheses from the point of view of Service Design, with a systemic perspective and international openness. Specifically, the following were analyzed:
 - **Type of contents and needs of the Registry Office.** Definition of

- services provided; profiles of the most frequent users; their expressed or unexpressed needs; and the Chamber of Commerce's strategy for answering these needs. For an effective Systemic Design, it is important to understand and closely analyze the needs of the different stakeholders who are part of this public space playing several roles (clients, operators, general public...).
- Collection of national and international **case studies**, project references and practices of interest, able to offer stimuli for future services and for the consequent articulation of space.
- **First hypotheses of design concepts in terms of services and user experience.** The focus was on the design of some "touchpoints" between the Chamber of Commerce and the citizens.

These activities resulted in a synthesis of the state of the art and of the objectives, highlighting opportunities and constraints. The emerging insights were discussed in a joint meeting of the Politecnico di Milano and the Chamber of Commerce teams, resulting in the identification of a design strategy related to the design of spaces, services and the future experience of the visitor through the use of Co-Design tools. This strategy was translated into the visualization of an initial set of working hypotheses.

4. Design of a **project proposal** with a higher level of feasibility. The proposal dealt with the services provided and, more generally, the overall experience of the user within the space. This included a careful analysis of all aspects of the space: furnishings, lighting system, environmental communication and technologies. These aspects were re-designed in order to make the *Registry Office* more attractive to a group of users who are not used to visiting a space like that. This phase ended with the delivery of useful information for the future drafting of specifications for suppliers of finishes, fittings, furniture, IT, graphics and more.

The outputs of these phase were a **feasibility study** consisting of an in-depth study of the chosen concept, an in-depth design study and an indication of the outlined hardware and software suppliers; a first quantification of the technical and technological requirements and a first economic quantification of the intervention.

5. **Supervision and project management**, supporting the choice of suppliers. This phase involved the choice of suppliers, interaction with those selected, and supervision of the implementation. Following the conclusion of the work, a phase

was provided for the monitoring ways in which the space would be used, and a possible fine-tuning of the realization.

Throughout the whole set of activities of this design process, the Politecnico di Milano team acted as scientific coordinator and project manager.

5. CONCLUSION

The *Hall of the Future* project was developed on different levels of complexity. We are talking about a Systemic Design project since, not only it is part of a greater and more complex strategic project, but it also covers many aspects of the project of spaces and services, which required the work of design experts (a lighting designer and a team of communication designers), and was created through a complex design process.

In terms of Spatial and Service Design, the project is still open and evolving. Indeed, the whole project was meant to rethink and transform the entire spatial experience of both users and Chamber of Commerce's operators. To reach this outcome, the project was structured more as a strategic scenario, leaving the physical project open and adaptable to changes related to possible new social, technological and work paradigms. Moreover, the project seeks to extend its vision to a wider temporal scale, always keeping the project updated (workstations and exhibition areas must be able to adapt dynamically to the provision of more services and activities).

In terms of the Co-Design process, working closely with one of the end users (the managers of the Chamber of Commerce) was not easy. Indeed, each of the users expressed different needs, which were sometimes impossible to accommodate at the same time. Some showed they were more open to change and progress, while others resisted them. An interesting fact that emerged and originated the use of Co-Design tools, is the fact that many users in the initial interviews expressed willingness to change, but, having viewed the initial proposals, were reluctant to adopt them. Therefore, the Politecnico di Milano team understood that it was necessary to establish stakeholders' concepts, understood by both teams, as well as to think about tools that would allow non-designers to be involved in the discussion about the project. In Stappers and Sanders (2008), at least four different levels of creativity can be found: doing, adapting, making and creating. Therefore, it's necessary to understand "how to offer relevant experiences to facilitate people's expressions of creativity at all levels" (Stappers et al., 2008). The proposed Co-Design tools proved to be engaging, as, at a certain stage of the process, the Chamber of Commerce team started to implement similar Co-Design tools (spatial layouts, in particular), in order to visually communicate and discuss their ideas

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on their own, as a new method of analysis and design. This is a successful achievement, since development processes rely on people's capacity to build structures which, not only enable innovation, but also help the stability of the system.

The Co-Design approach allowed the traditional roles of the designer-researcher to be modified, shifting from that of translator to facilitator. In this specific case, the team of designers also played the role of mediator, able to make compromises among the different stakeholders.

Generally speaking, the Co-Design process and its tools can be a reference guideline for any project about spaces, and in particular public interiors, with the possibility of being improved, and specifically improved according to the stakeholders involved in the project.

Finally, it appears evident that this kind of project, characterized by the involvement of public administrators, citizens (users), and research and training centres (universities), are models for future research projects that focus on the growth and enhancement of territory and public spaces.

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