# DESIGN-DRIVEN STRATEGIES FOR CREATIVE SOCIAL INNOVATION ECOSYSTEMS

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# ABSTRACT

***Purpose:*** Within the scientific literature on social innovation, several researchers from different areas are suggesting alternatives to promote, to sustain and to disseminate social innovation. However those approaches are unable to cope with the long-term sustainability of social innovation processes and projects mostly because they do not consider the contextual and processual dimensions. The paper presents an approach to fill this gap, which means to act in ecosystem perspective.

***Design / Methodology / Approach:*** The paper is an essay that critically explores the concepts of social innovation, design discourse, infrastructuring, seeding, and the contribution of design-driven strategies to the long-term sustainability and to the dissemination of social innovation processes, through reviewing design, management and sociology theories.

***Results:*** Through the exploration, discussion and association of the above presented concepts, we propose an approach to promote creative social innovation ecosystems based on design-driven strategies.

***Originality / value:*** The suggested approach takes into consideration all the different stages and dimensions of social innovation.

***Keywords***: Strategic Design. Creative Ecosystems. Infrastructuring. Seeding.

# ESTRATÉGIAS DE DESIGN PARA ECOSSISTEMAS CRIATIVOS DE INOVAÇÃO SOCIAL

## RESUMO

***Objetivo:*** Na literatura sobre inovação social é possível observar que vários pesquisadores, de diferentes áreas, propõem abordagens para promover, suportar e disseminar inovação social. Trata-se, porém, de abordagens que não conseguem promover uma sustentabilidade de longo prazo de processos e projetos de inovação social porque não consideram as dimensões contextuais e processuais dos mesmo. O presente artigo apresenta uma abordagem que tem a potencialidade de preencher esta lacuna, ou seja, uma abordagem baseada em uma perspectiva ecossistêmica.

***Design / Metodologia / Abordagem:*** O texto é um ensaio no qual são explorados criticamente os conceitos de inovação social, discurso de design, *infrastructuring*, *seeding*, e a contribuição de estratégias de design para a sustentabilidade de longo prazo e a disseminação de processos de inovação social, por meio de uma revisão de teorias do design, da gestão e da sociologia.

***Resultados:*** A exploração, discussão e articulação dos conceitos acima citados, sustenta a proposição de uma abordagem para promover ecossistemas criativos de inovação social baseada em estratégias dirigidas pelo design.

***Originalidade / valor:*** A abordagem apresentada considera todas as diferentes etapas e dimensões da inovação social.

***Palavras-Chave****:* Design Estratégico. Ecossistemas Criativos. *Infrastructuring. Seeding.*

# 1  BACKGROUND

Several theoretical perspectives, from sociology to management and design, address social innovation as a research topic. They commonly assume the idea of social innovation as transformation and change resulting from new solutions designed to address issues that concern us collectively rather than individually. The main difference among them is the understanding of social: either as a problematic issue that affects society (MURRAY, CAULIER-GRICE and MULGAN, 2010); or as a group of individuals that collectively act to promote common good and sustainable well-being (MANZINI, 2015). This paper is aligned with the second perspective, which grounds the research activity of the Design for Social Innovation and Sustainability (DESIS) Network:

Social innovation can be seen as a process of change emerging from the creative re-combination of existing assets (social capital, historical heritage traditional craftsmanship, accessible advanced technology) and aiming at achieving socially recognized goals in new ways (DESIS, 2012).

From this perspective, social innovation is a process that some social actors initiate to change living conditions and to improve the quality of life of their community. The cornerstone of social innovation is the ability to generate social value, i.e., the collective effort towards solutions that are beneficial to all social actors involved. From this point of view, the value of a solution relies on the social relationships that the solution creates and the benefits that offer to the community. Moreover, the solutions that add social value are the ones that stimulate a sense of belonging from whom is affected by them, the social responsibility of the organizations that offer them, the reciprocity of the relationships between the different members of the ecosystems and, ultimately, a significant social life focused on the common good (OUDEN, 2012).

Therefore, social innovations are the result of an open development process in which many different actors collaborate. Their collaboration is crucial because social innovation is acknowledged as a social construction learning process whose goal is to transform those who are part of it (MULGAN, 2007; MURRAY, CAULIER-GRICE and MULGAN, 2010, MANZINI, 2015).

Considering these characteristics of the social innovation process, it is possible to draw a parallel with the design process. Design is recognized as a creative process used in the development of socio-technical apparatuses (product-service systems, but also processes, and even business models) aimed at transforming the world (FRANZATO et. al, 2015). Socio-technical apparatus could be understood according to Agamben's (2009, p.13) definition, who

develops further Foucault's proposal: "apparatus literally anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviors, opinions, or discourses of living beings".

The processual dimension is the main feature of design. Specifically, design is a process of sense-making: a creative process that gives form to propositions, which deliver the desired value. (MANZINI, 2015). Therefore, we claim that Design contribution to social innovation processes is the creative process that generates new socio-technical apparatuses able to promote change in the socio-cultural systems through developing human and social capital while preserving the natural one, as well as through generating economic capital in order to be sustainable over time.

Although until now a lot has been done by researchers towards fostering social innovations – several scholars have explored the development process of social innovations, from idea generation to deliver and implementation (NICHOLLS et. al., 2016) – it is still an emerging field of study (TJORNBO, 2016) and there is gap of knowledge concerned to forms of growing, spreading and sustaining them in the long run. For instance, within management studies, Nesta and the Young Foundation (PULFORD, HACKET and DASTE, 2014) presented a proposal for social innovation processes divided into seven stages from inception to impact: from exploration of opportunities for change to a systemic change (figure 1). The initial stages of the process (1, 2, 3 and 4) are related to the generation of solutions, which involves specific contributions from the creative skills of design for the identification of opportunities, and the development of ideas and projects. Stages 5, 6 and 7 are related to the implementation of the solutions and to strategies used to broaden their impact on the social context, with specific contributions from the area of management.

A closer look at this model points out that it is based on systemic thinking and on a deterministic mindset that in some way thinks it is possible to control the system. As Westley and Antadze (2010) point out, "social innovation strives to change the way a system operates" and to achieve durability and scale "requires models that incorporate discontinuous and emergent properties of innovation". The authors suggest that is necessary an adaptive cycle to understand the cross-scale dynamics of social innovation development and a scale up process that considers the agency of diverse actors in spreading social innovations.

**Figure 1 -** Social Innovation Spiral.
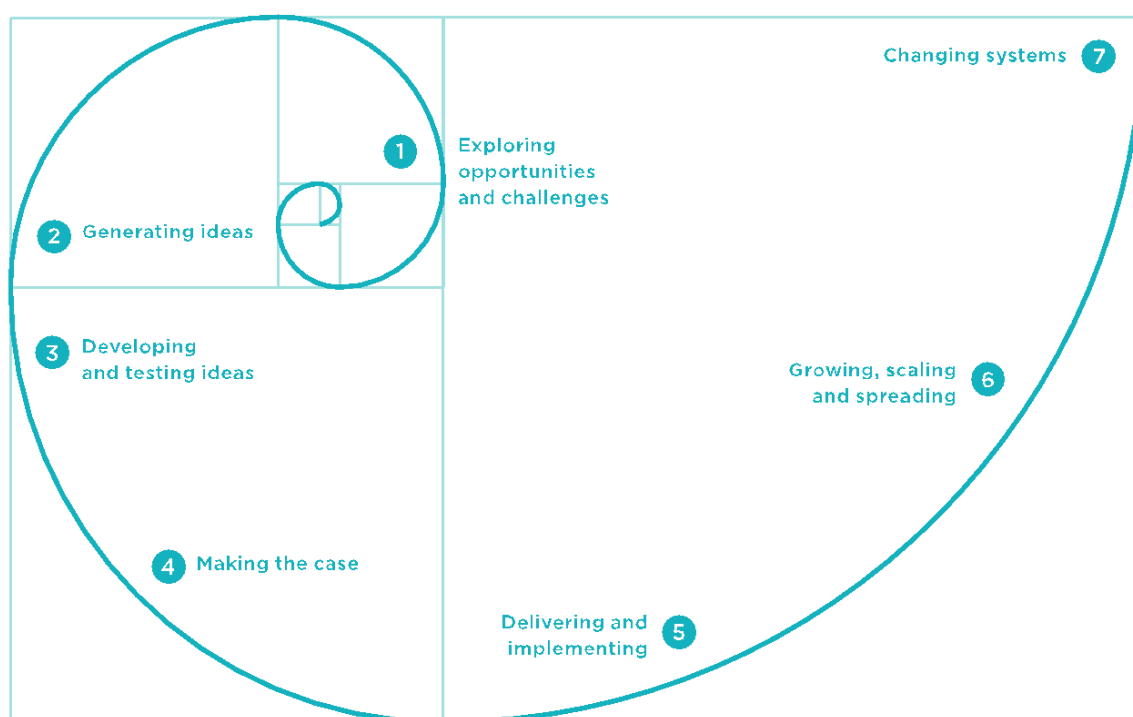


**Source:** NESTA as quoted in Pulford, Hacket and Daste (2014)

Different studies indicate that the main challenge of social innovation processes is related to find ways to ensure the sustainability of the new solutions over time, making them grow, increasing their scale and disseminating them to the point of generating systemic changes (MANZINI, 2008; MULGAN, 2007; MURRAY, CAULIER-GRICE and MULGAN, 2010). Murray, Caulier-Grice and Mulgan (2010) assert that this sustainability can be achieved through the design of business and governance models, which provides funding and structures networks of actors able to generate relational capital, which is source of resilience for the most difficult moments. They remark that once a solution becomes sustainable, it is necessary to find ways to disseminate it. The authors identify five patterns of growth and replication that allow disseminating social innovations and achieving scale gains (figure 2). The types of dissemination can be more or less structured, depending on whether they are promoted by individuals or organizations. However, their model has some weakness: it is developed within the market logic and it pursues "the right answer" (p.30) and once the business case is done, there is little space for adapting and evolving it.

**Figure 2 -** Patterns of growth and replication.

| Type 1<br>General ideas and principles | Spread through advocacy, persuasion and the sense of a movement; e.g. the idea of the consumer cooperative |
| --- | --- |
| Type 2<br>1+ design features | Spread through professional and other networks, helped by some evaluation: eg the 12 step programme of Alcoholics Anonymous |
| Type 3<br>1+2+ specified programmes | Spread through professional and other networks, sometimes with payment, IP, technical assistance and consultancy. E.g. some methadone treatment programmes for heroin addicts would be an example, or the High Scope/Perry model for early years. |
| Type 4<br>1+2+3+franchising | Spread by an organization, using quality assurance, common training and other support. E.g. the one third of independent public schools in Sweden that are part of a single network would be an example; or Grameen's growth in Bangladesh and then worldwide. |
| Type 5<br>1+2+3+4+some direct control | Organic growth of a single organisation, sometimes including takeovers, with a common albeit often federated governance structure. E.g. Amnesty International or Greenpeace. |

**Source:** Mulgan (2007, p. 24)

Similarly, within design studies scope, Manzini (2008) summarizes three patterns to disseminate social innovations: the toolkit, the format and the franchising. The toolkit is the freest model: it comprises a group of tangible and intangible tools designed, produced and delivered to simplify a specific task. The producer takes no responsibility for the final usage results. The toolkit corresponds to types 1 and 2 proposed by Mulgan (2007). The format, which corresponds to type 3, consists of a list of procedures and step-by-step instructions about what needs to be done in order to replicate the solution in different contexts. Thus, the buyers can reproduce the original program while adjusting it to local needs. The franchising, which corresponds to type 4, offers a series of communication procedures and tools that allow a local entrepreneur to launch commercial activities supported by the reputation of the franchiser. The franchiser provides the franchisees with a set of tools and a series of process and quality standards to comply.

These schemes are mainly focused on generation, support and dissemination of social innovation solutions. They suggest possible ways to disseminate them, nonetheless, they do not enlighten about how to organize social innovation processes before and during dissemination. Actually, considering that social systems are complex systems, a social innovation process and its related change have to be systemically updated, organized, and implemented. In other words, organization (generation and implementation) and dissemination of social innovations could not be actually considered as separated. However, the above presented schemes do not consider the contextual and processual (on-going) dimensions of social innovation that have to be taken into

account in order to systemic change to happen. Thus, the challenges of long-term sustainability of social innovation processes still need to be overcome.

Considering the complexity of social systems, a mindset based on complexity is necessary to understand these challenges. As Morin (2011) points out, complexity demands strategic projects and actions. Within this background, we point out the role that design, specifically strategic design, can play. Then, we propose a way to organize social innovation processes –from the identification of opportunities to the dissemination of solutions– guided by a strategic design approach.

Strategic design is about the development of strategies to guide organizations and projects towards innovation and sustainability. The strategic design role is not only about understanding the need for change, but also about imagining how both to preserve some qualities and, at the same time, to create enabling conditions for further future transformations. Thus, through the creative process of strategic design, socio-technical apparatuses are created and developed, whose aim is the transformation of the world and the achievement of more sustainable ways of living (FRANZATO et. al, 2015). These apparatuses have to be able to encourage socio-cultural changes targeted at the collective well-being and also to stimulate relations with local dynamics and actors.

Moreover, in order to promote the collective rather than the individual well-being towards more sustainable scenarios, it is necessary to look at the creation of value from different point of view. A point of view that favors all the actors involved in the ecosystem of the new solution, rather than specific individuals. At the same time, the new solutions have to create social value through a creative recombination of the existing resources and technologies aimed at the production of new meanings.

The strength of this kind of creative process lies in a collective intelligence able to enhance the collective construction of the knowledge required to generate the desired systemic changes (LÉVY, 2014). This understanding reinforces the need of a complexity mindset to support the aforementioned creative process: an ecosystem-based perspective is needed to generate the kind of innovation that will allow the achievement of the desired social change. Creative ecosystems are interactive social organisms with the capacity for adaptation and sustainability, which produce multiple, complex and dynamic connections, whose creative processes are aimed at transforming the world. Given this, social innovation processes may benefit from creative ecosystem's relations. These relations involve designers, professionals from the area of cultural and technological production, the organizational and institutional fabrics and the citizens. Thus, as result, socio-technical apparatuses created by design to foster social innovation will integrate into

their value's proposal social, business and technological innovation. This is a condition to the effective dissemination of social innovation, as Ferrara (2012, p. 240) pointed out, "the effectiveness of social innovation to succeed and propagate is operationally connected to technological and to business innovation". The author also acknowledges design as the element that is able to interweave these three types of innovation.

The potentiality of design emerges clearly at considering that the strategic design process is developed within the scope of the multiple relationships involved in a project within its operational ecosystem: the organizational context, the market, society and the environment. In this process, the technical skills of design are turned into a transdisciplinary platform that supports the dialogical cooperation among these stakeholders, and the collective ideation of organizational strategies for the creation, support and dissemination of social innovations (FRANZATO et al., 2015). Strategic design is not only able to deal with the instability of its ecosystem, but also to take advantage of it. As a matter of fact, the ability to read and interpret the signals given by the ecosystem, allied with a scenario building are at the core of the strategic design process, because they allow not only to consider the regular, the obvious and the possible, but also the unpredictable, the random, the drift, and the error.

It is well known by management scholars that design may lead the innovation process in market contexts (VERGANTI, 2009). In the same way, we consider that design may also actively contribute in catalyzing and guiding the collective creative process that will foster innovation and the local ecosystem actors' openness to sharing and exchanging, as well as configure new proposals of social value. Thus, this paper will answer the following questions: how can strategic design knowledge contribute to social innovation processes? How it could be a design-driven social innovation process? How strategic design can support a long-term sustainability of social innovations?

In order to do this, we were inspired by design-driven innovation model proposed by Verganti (2009) that considers the design network – resulting from a collective intelligence – in the development process of new solutions, which embodies dispersed cultural meanings. Drawing on it, we suggest its adaption within the social innovation field, and we describe how it would be. Then, based on the understanding that, among the several features of social innovation, being contextual and processual are the crucial ones for the promotion of systemic change, we suggest two strategies –infrastructuring and seeding– to organize and spread social innovations. Thereby, we configure a design-driven social innovation process able to organize the development of social innovations at ecosystem level. The resulting model is a process driven by design-related skills, focused on infrastructuring the social context – with the ultimate goal of

transforming those who take part of it–, and on disseminating the resulting social innovations. In other words, in order to achieve systemic change, the purpose of the design-driven social innovation process proposed here are the infrastructuring of creative ecosystems of social innovation and the dialogue among them.

This paper is divided into the following sections: a presentation of the approach of design-driven social innovation; an in-depth look at two key processes of organizing and promoting social innovations, namely infrastructuring and seeding; and, finally, the model for organizing social innovation processes.

## 2 DESIGN-DRIVEN SOCIAL INNOVATION PROCESS

Our proposition of a design-driven social innovation process is based on Verganti's (2009) work. The author calls design-driven innovation processes those that foster radical new meanings. His research was based on market firm's perspective. He notices that companies that foster new visions of how socio-cultural and technological contexts could evolve and improve the quality of life use design-driven processes. The peculiarity of these companies was that they explored their socio-cultural and technological context in a broader manner. Actually, they acknowledged that there were several actors that share common interests about the living environment, and then, stimulated the dialogue among them. This strategic dialogue is the key element of a design-driven innovation process. These actors were part of the business ecosystem and named as "interpreters" by this author. The interpreters could be any actor from companies of other industrial fields that want to reach the same customers, to suppliers of new technologies, researchers, designers and artists. Verganti (2009, p.116) describes the dialogue of interpreters as Exploration: "a network-based diffuse process of collective research on new potential meanings", and defines it as "the design discourse". In this context, companies do not resort to existing and defined trends to develop their solutions, but rather call upon an organic and collaborative process of interpretation of the data produced by the interpreters in order to understand potential future contexts. The overall aim of this approach is to create proposals for changing a given situation, starting from visions of possible futures. The purpose of the discourse is to "seduce, shape the socio-cultural models and influence people's ambitions and desires" (VERGANTI, 2009, p. 192).

Herein, we can assume that the design discourse is an open collaborative process of social learning done by those interpreters of technocultural realm. The potentiality of the design discourse lies on the understanding of people's socio-cultural living context (and not of the

objects' context of use) that is achieved through encouraging actors to share knowledge in different ways: art-works, studies, conferences, prototypes and products.

By considering the possibility that design may contribute to catalyze and mediate the collective creative process aimed at producing social value, the design discourse and the diffuse process of collective research need to be amplified and transformed towards social innovation purposes. In this case, the exchange of value does not happen directly between a customer and an organization; it includes other actors that are part of the system. Actually, social innovation process enhances the tacit knowledge and skills of community members, relying on them throughout the entire process, from the concept to the development and implementation. As acknowledge by Manzini (2008) people have skills that should be stimulated in order to promote an active well-being and strengthen the social fabric.

This understanding raises a few questions: is there a network of interpreters for social innovation? How is the design discourse activated within that network? What does it consist of?

We propose that the network of interpreters for social innovation would consist of actors related to cultural production and to the development of technologies, whose use will be based on new meanings able to promote the collective good. Moreover, according to the proposal made by Manzini (2008), social innovations rely on the participation of a multiplicity of social actors; and, among them, people who belong to a specific socio-cultural context stand out as relevant interpreters within the design discourse network, because they are experts in theirs contexts and daily experiences (figure 3).

**Figure 3 -** Creative ecosystem: network of interpreters of the socio-cultural context.
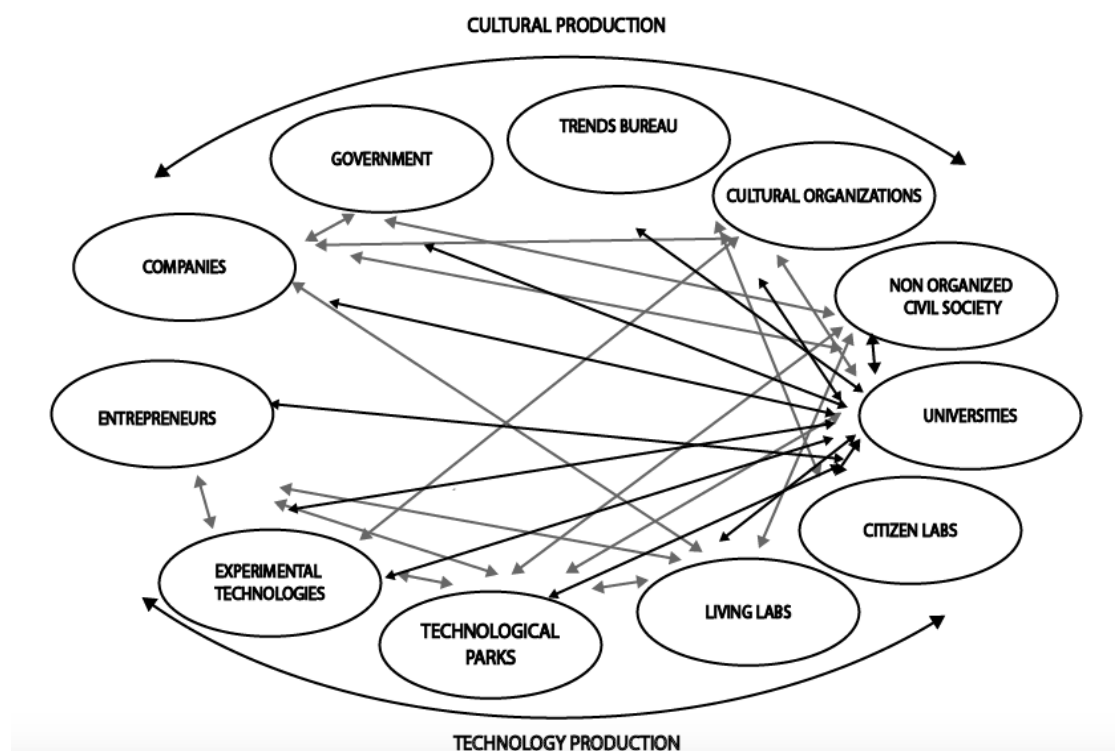


**Source:** The authors, adapted from Verganti (2009)

In this regard, it is possible to reflect on the questions raised above by analyzing the case of the Design for Social Innovation and Sustainability (DESIS) Network. The DESIS Network consists of a constellation of autonomous, albeit interconnected, experimental labs. Each lab is constituted of professors, researchers and students of a specific design school, which are responsible for promoting social innovation (DESIS Network, 2015). The network's labs set up partnerships with companies, non-profit organizations, foundations and governmental agencies to identify, design and disseminate cases of social innovation, i.e., they connect with other social innovation interpreters. Their research activity seeks to identify creative solutions designed by common people to solve everyday problems related to sustainability and to collective well-being. The first research projects connected a network of interpreters from several European organizations (see "Sustainable Everyday – scenarios of urban life" by Manzini and Jégou, 2003; and "Emerging User Demands for Sustainable Solutions" by Jégou and Manzini, 2008). They identified and disseminated promising signals of social innovation (solutions developed by people to solve their daily problems). Manzini (2008a) explains that these signals may be understood using seeds as metaphor: "Seeds are something with a DNA, something with a potential in it; you

cannot know if the seed will be cultivated, find a ground to grow and became a good tree, or if it will die"; and also he says that the designers' responsibility is to cultivate them so they can grow.

The DESIS network's vision is that the design community, in general, and the design schools, in particular, can play a key role in the dissemination of these signals or seeds working as driving forces for sustainable changes towards social innovation. It aims at using the design knowledge to co-create socially relevant scenarios, solutions and communications, together with local, regional and global partners, thus stimulating the development of social innovations (DESIS Network, 2015; MANZINI et al., 2010).

We can say that the divulgation of these solutions – characterized as "seeds for social innovation" – is aligned with the innovation model presented by Verganti (2009), in so far as suggests to build a "seductive discourse" to encourage a shift of the socio-cultural models, which in this case is directed towards social innovation and sustainability. Some events organized by the DESIS Network, such as the exhibition "La Triennale di Milano – Sustainable Everyday" (Jégou and Manzini, 2003) and the DESIS Showcases (DESIS, 2015), are examples of design discourses, produced by this specific network of interpreters and led by design, that aim at creating new proposals for a sustainable well-being, either by using prototypes of solutions and products, or by organizing studies and conferences. In order for sustainable changes towards social innovation to happen, new forms of interaction, constant dialogues and debates for finding and defining the solutions, and seductive and provocative proposals are necessary.

From the analysis of this case, it is possible to say that within design-driven social innovation process, designers take over the responsibility of activating the design discourse of the network of interpreters thanks to their ability to imagine and influence behaviors. Through their professionally creative point of view they transform signals of the present into catalysts of future change. Specifically, designers should be the ones responsible for creating tools to enable the design discourse and for shaping the ideas provided by the network in order to promote the creative dialogue among social actors (SANDERS and STAPPERS, 2008). As Manzini (2011; 2015) points out, more than facilitators that make co-created ideas visible, designers should be visionaries who through their culture turn signals and local insights into original ideas, visions and proposals that prompt a debate that goes beyond involved actors' imagination.

In short, people and organizations with an interest in developing cultural and social innovations can find in the designer an agent that is capable of: activating the network of interpreters, setting up interdisciplinary teams, creating instruments that enable collective design, stimulating relationships and debates by means of provocative proposals. So, we propose that design-driven social innovation processes are co-creative and guided by strategic design's culture

and methods, aimed at promoting a design discourse through a dialogical cooperative approach (SENNETT, 2013), and at developing relationships among the actors of the creative ecosystem (FRANZATO et al., 2015). Within this framework, strategic design could play a key role because, it privileges co-design and it enables the creative collaboration among a wide range of stakeholders from different areas towards the development of new solutions. As said above, the participation of a multiplicity of social actors in the development of innovations and the search for new forms of well-being are key characteristics of design-driven social innovations, as it is a social learning process.

Considering how design-driven social innovation processes work, it emerges the need to understand how to constantly catalyze and feed this kind of process within creative ecosystems in order to be able to provoke, disseminate and prompt systemic change within an ecosystemic perspective. Two processes stand out for importance: one that stimulates design-based relationships and debates, defined here as infrastructuring; and one that generates and disseminates provocative proposals, defined here as seeding. They will be better described in the following sections.

## 3  INFRASTRUCTURING FOR SOCIAL INNOVATION

As mentioned above, in order to articulate social change, designers have not only to operate at the level of each specific innovation but also to think about a more comprehensive way of coordinating and linking these new proposals to obtain the desired systemic change. So, it is a question of intervening in the process of social change as a whole. Therefore, considering that the desired change finds its strength in the relevance of the relational dimension of social innovations – which through the promotion and organization of new kinds of relationships promote new ways of life that, in turn, will slowly contribute to a bigger change –, the existence of a process focused on a constant social infrastructuring becomes increasingly relevant. According to the concept of infrastructuring, which has been recently discussed in the field of participatory design, it is understood that design can stimulate productive relationships and debates within the network of social interpreters, thus allowing a continuous adjustment of each solution to the corresponding contextual changes. Therefore, a design-driven social innovation proposal needs to include this process, whose nature we will explain hereafter.

Ehn (2008) defined "infrastructuring" as the design of future design possibilities. This concept arouses from the concepts of "design-for-design" and "design-after-design". The first is an activity aimed at enabling and supporting future design projects (EHN, 2008), while the second refers to the future creative possibilities offered by a design-based infrastructure

developed by designers (REDSTRÖM, 2008). Designers should focus their work on the development of strategies (design-for-design) aimed at creating flexible and open infrastructures for an unplanned design-after-design, i.e. future creative, design-based, interventions. Successively, considering the contextual and processual dimensions of democratic development, he and his colleagues strengthened the processual nature of infrastructuring by defining it as a continuous and open process that offers the possibility of a constant and flexible combination and recombination of time and resources in order to allow different actors to jointly produce innovation (BJÖRGVINSSON, EHN and HILLGREN, 2010). Moreover, Hillgren, Seravalli and Emilson (2011) specify that the infrastructuring process is about the construction of relationships between different actors. Thus, is about creating an open design platform without any specific deadlines or goals, which could be connected with design discourse.

Infrastructuring is at the center of the social innovation process. This becomes clear when ones understands the principles that inform the development of the infrastructuring process and of the designer's action within: infrastructuring processes must be characterized not by consensus, but on the possibilities that different actors have of expressing their needs and opinions, on debates about these different stances and on the creation of tolerant and constructive links between them. Actually, this concept of infrastructuring is grounded on the idea that social progress and democratic solutions are not obtained via the homogenization of different positions, but by means of a dialogue and the different interaction between the existing actors (Mouffe, 2000). According to Mouffe (2001), the dynamics that should be used to manage constructive controversies between adversaries should not be based on rational decision-making processes, but rather on creative innovations. For these reasons, the infrastructuring approach has the potential to contribute to a more resilient society, as well as to challenge and change the current system (HILLGREN, SERAVALLI and EMILSON, 2011).

The designer's role is no longer to design a specific project, but to design a process. Indeed, the "-ing" form points out the relevance of a process-focused approach to act towards social innovation, i.e., what has recently been defined by Manzini (2015) as "design process"; as well as of the designers' flexible and dynamic intervention to meet demands that emerge during the process itself, and to take advantage of arising opportunities.

Considering this point of view, we push forward Ehn and his colleagues' understanding of infrastructuring as a constant process aimed at creating flexible and open infrastructures for a "design-after-design". We propose the designer contributes to social innovation via the design process itself. Actually, it is through and within the process that innovation and change happen, and design relationships and interactions are stimulated. So, it is a constant, open and endless

process that, while unraveling, is constantly generating and fueling the desired context, as well as the opportunities for other processes aimed at social change to happen. Therefore, it allows considering the contextual and processual dimensions of social innovation: designers are no longer (or not only) focusing on specific project, but rather on the process of building and evolving of a specific context, thus promoting contextual change. The living labs are examples of this infrastructuring process.

It is important to note that, in regards to the contribution of design in promoting social innovation processes, several researchers have recently highlighted the importance of the context's relational infrastructure. This assumption is strongly grounded in the intrinsic relational features of social innovation itself. In fact, considering that at the core of social innovation there is the shift in focus from the individual well-being to the collective one, pursued through the generation and dissemination of new social behaviors and relations, the designer needs to stimulate the development of creative relationships in order to activate the design discourse – presented in the previous section.

There are some characteristics of the infrastructuring approach that are exemplificative to understand how it can contribute to generate, foster and disseminate social innovations. First of all, it does not rely on a "format" or on any planned results. Actually, the designer does not act according to any specific results, but rather to promote a contextual change, through the activation of the creative ecosystems. The designer's intervention occurs on process and is based on measures that act directly on the relational dimension in order to favor the emergence of opportunities for projects, whose development and results contribute towards building the wished ecosystem: "This more organic approach facilitates the emergence of possibilities along the way and new design opportunities can evolve through a continuous matchmaking process." (BJÖRGVINSSON, EHN and HILLGREN as cited in HILLGREN, SERAVALLI and EMILSON, 2011, p.180). The words "facilitates" and "opportunities" underline the idea that the designer's actions are aimed at making a result as feasible as possible, by promoting it and stimulating it, rather than by planning and determining it. The designer triggers relationships and facilitates contextual change. In other words, designers do not deal with a specific issue; they are constantly dealing with all the elements and issues that make up a given context. Hence, again, this type of intervention has not any rules; it cannot be planned and it cannot be taught as a predefined process (HILLGREN, SERAVALLI and EMILSON, 2011).

All the features we have mentioned up to this point – the processual nature of infrastructuring, the fact that it is constantly being re-planned, the absence of a result as the purpose of the designer's action, the promotion of contextual changes – underpin another key

characteristic of this type of process: it is a process in constant endless evolution. Thus, it does not end; there is no deadline for the completion of the designer's action. Nor is it wanted.

Finally, by considering that the promotion of a creative ecosystem for social innovation is not enough to disseminate social innovations and achieve the desired systemic change, it emerges the need for a process that embeds a strategy that allows the creative ecosystems to disseminate the seductive and provocative social innovation proposals and, consequently, to activate other creative ecosystems. The concept of seeding, which we will present in the following section, is key to understand how it could be.

## 4   SEEDING SOCIAL INNOVATIONS

In the first section, we defined design as a creative process aimed at developing socio-technical apparatuses to transform the world. When we consider social innovation as design purpose, the result will be the development of socio-technical apparatuses that are very different from the artifacts designed by industrial design. They need to be technological, processual, organizational and socio-cultural apparatuses, as well as they have to embed dissemination strategies to generate and support creative ecosystems for social innovation.

As we have mentioned, Murray, Caulier-Grice and Mulgan (2010) point out that replication and adaptation are the most common ways to disseminate social innovations; and Manzini (2008) includes the toolkit, the franchising and the format among the strategies used by design within the scope of social innovation. However, as already presented, one of the most relevant issues today within the models proposed for the dissemination process has to do with allowing social innovations to constantly re-organize, update and adapt themselves where they are happening and to different contexts. Replication, franchising and format are traditional dissemination strategies. Both the franchising and the format are focused precisely on the possibility of replicating a model in order to obtain a similar specimen. The ideas of adaptation (MURRAY, CAULIER-GRICE and MULGAN, 2010) and toolkit (MANZINI, 2008) suggest a new form of dissemination. However, even the latter still need to be better evolved because in the present form it is not possible to understand how they can be implemented to contribute to systemic change.

In this regard, the work developed by the Center for Life Long Learning and Design (L3D) of the University of Colorado, Boulder, is useful to overcome the contradiction found in the concept of replication, which takes to mass production, and to identify new strategies to disseminate social innovation. Elisa Giaccardi (2005), a member of this center, was responsible for an extensive literature review about metadesign. Her work is useful for understanding, which

could be the new strategies, thus we will briefly analyze the stages of her work, starting with generative design. Generative design is a design method that is not aimed at developing final artifacts, but processes that, once initialized, develop final artifacts. Among the results of generative design we can include computer codes that, based on a set of variables, can be used by an artificial intelligence to develop a process for a graphic artifact, or even for an industrial or architectural product. These codes can be seen as "seeds" of processes for final artifacts. Thus, they are inherently innovative. The metadesigner –i.e., the designer who works with metadesign– does not create the final artifact, but the seed of a process for final artifacts.

While the franchising and the format allow replicating specimens that are exactly identical a given model, a code processed by a machine allows creating different specimens from different sets of variables. In regards to our discussion, it means that when designers work with seeds – social innovation codes– changing the contextual variables will allow obtaining customized versions of a coded social innovation.

Even if fascinating, this opportunity does not solve the addressed issue. In fact, in order to work, it would be necessary the social environment to be as controlled as the machine. Moreover, in this case there is also a contradiction posed by the conflict between technocracy and democracy that is contradictory and unacceptable when working with social innovation: is it possible to accept innovative solutions that are predetermined and imposed by a code? In this regard, it is important to bring to the present discussion a possibility that has already been brought up: the code can be open to interventions by the user community that means that it is a code that "the users are free to execute, copy, distribute, study, edit and improve" (FREESOFTWARE FOUNDATION, 2015, s. p.).

This allows to understand the importance of design-driven social innovation processes aimed, not only at generating networks –based on new ways of relating and on constant debates about locally relevant issues (infrastructuring)–, but also at developing seeds for technological, processual, organizational and socio-cultural apparatuses aimed at achieving socially sustainable recognized goals in new ways (DESIS, 2012), which embeds dissemination strategies.

This dynamic of design dissemination with the potential to generate innovation is known as "seeding": innovative ideas (seeds) spread from one context to another via the networks of interpreters; consequently, these seeds are put into practice by means of design network-based processes, according to the key dynamics of the contexts in question. Thus, they are reinterpreted, transformed and renewed in order to be implemented in different contexts where and from which they will continue to spread.

We should highlight that, along these design paths, the seed, the socio-technical apparatus and its inherent innovation can evolve even in a radical way. Not only are they able to adapt to different contexts, but they also can and, actually, should be autonomously interpreted, transformed and used in different ways in order to sustain the systemic change locally. So, the parallel with the open-source computational code metaphor is key: opening the seed and its effects is a crucial feature of this process.

After introducing the origins of the concept of seed and its main characteristics, we conclude this section by presenting a few examples of seeds. First of all, we should mention a series of manuals for the development of design processes that are very similar to "The open book of social innovation" by the Young Foundation and NESTA (MURRAY, CAULIER-GRICE and MULGAN, 2010), which we have already mentioned. They are exemplificative of the toolkits for the dissemination and replication of social innovation mentioned by Manzini (2008), whose implementation should happen according to what was explained in this section. Finally, we can mention the social innovation prototypes mentioned in the third point of the spiral proposed by NESTA –developing and testing (fig. 1). Design has developed significant skills for prototyping a wide variety of artifacts and promoting debates on these prototypes among multiple players. However, we add that these prototypes should be used not only for developing and testing socio-technical apparatuses, but also as seeds for related innovation. We believe that seeding is a scaling up process aligned with Westley and Antadze (2010) strategies for scaling social innovation from social systems perspective, which considers the way that the novelty enters in the social systems and transforms them and the role that human agency plays as key to understanding social innovation.

## 5   FINAL REMARKS

In the previous sections, network emerges as one of the most important organizational forms to support design-driven innovation processes, particularly in the social area. Actually, the design discourse is collectively produced and stimulated between experts of cultural and technological production based on common interests and network dynamics. Within this specific network, actors exchanges tacit and explicit knowledge by non-linear relations, between them and also with the environment, via listening and seeding process. Based on the main concepts presented throughout this paper, we will now explain how the model for organizing social innovation processes that we suggest works.

We propose that the same contribution that strategic design brings to market economy, it could bring to social systems: the strategic designer incites the network of interpreters to explore

opportunities in the social sphere. The creative processes established by the designer to connect this network of interpreters are infrastructuring processes and they are based on co-designing activities. The creative processes not only occur within and because of the networks to which the social actors belong and within which they act, but they also contribute to their very development. In fact, those processes are fostered and accelerated within and by the networks of experts and other actors –all of which, without distinction, are local interpreters– that contribute to the construction of the design discourse. The infrastructuring process activates and fosters the network of interpreters that, in turn, feeds a local design discourse and generates proposals that may activate other networks by means of a seeding process (figure 4).

**Figure 4 -** Design-driven social innovation model.
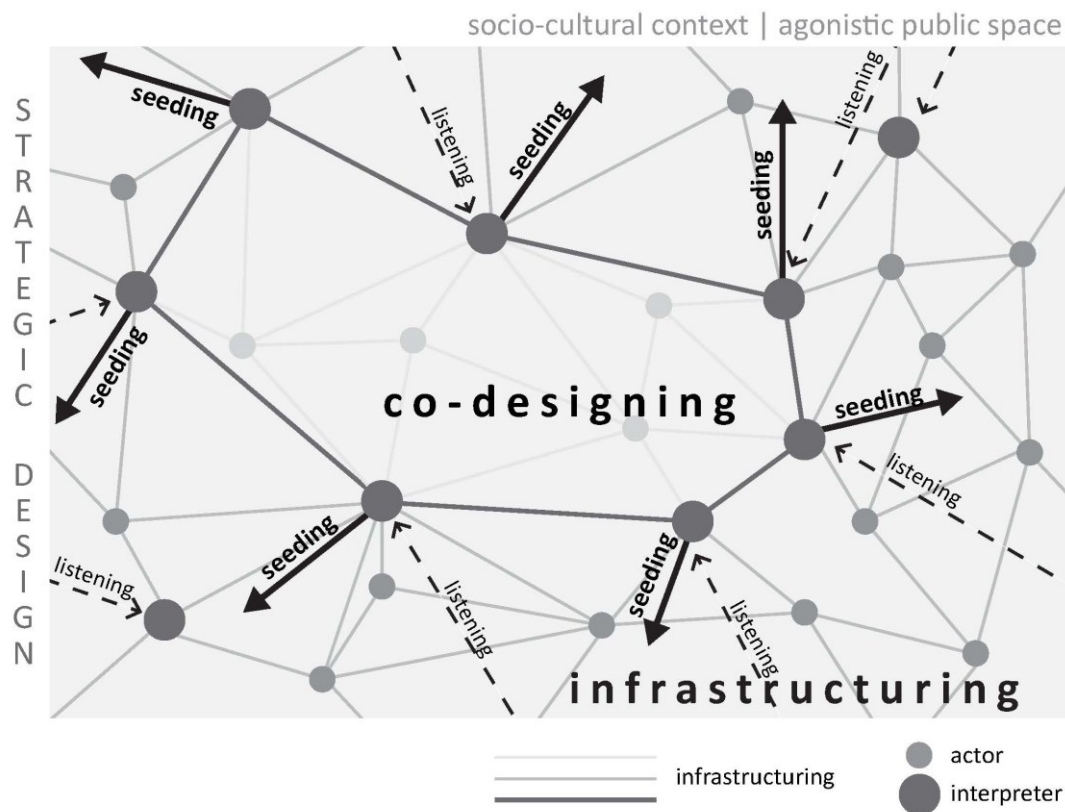


**Source**: The authors

However, it is not possible to accurately delimit each creative ecosystem. Despite the fact that several among the activated and supported relationships and interactions are concentrated in a specific creative ecosystem –the focus of the designer's action–, they also reach beyond it. Thus, they rise an inter-ecosystemic plot. This is a characteristic of networks and, especially, of design-driven innovation networks (or, by extension, of the networks that we artificially identify and

associate with design-driven innovation), which are rich in inter-ecosystemic relationships and interactions (see, for example, DELL'ERA and VERGANTI, 2010).

By understanding this plot of ecosystemic and inter-ecosystemic relationships and interactions that support innovation and, above all, social innovation processes, it is possible to notice that the focus of design shifts. It moves from the creation of socio-technical apparatuses to the plot that brings together the creative process and all the other processes that foster social learning and innovation, particularly the ones related to the ecosystem established by the individuals and the organizations involved (MANZINI, 2008; MURRAY, CAULIER-GRICE and MULGAN, 2010). So, it becomes clear that the strategic design approach is fundamental within the scope of our perspective.

As we have mentioned earlier, strategic design focus on the strategies developed by design in order to fit the creative and organizational action into a process that involves the entire operating ecosystem: the organizational context (design studios, companies and other organizations), the market, society and the environment. Therefore, the design process is understood and developed within the scope of the multiple ecosystemic relationships encompassed by the creative action. Here lies the relevance of strategic design as a means to activate and support these creative ecosystems.

In this scenario, the designer becomes part of an extensive network of actors that are directly or indirectly involved in the development of organizational strategies for social innovation –including the organization's stakeholders, the members of the various communities linked to the organization, the users, the citizens and people in general. In this process, the technical skills of design become a transdisciplinary platform that supports the convergence among the experts and the other players –the design discourse– and integrate them within a productive collaborative network. For this purpose, the designer's ability to share strategies for social innovation with all those involved for promoting a collective dialogue and construction is crucial.

The most significant effort of strategic design is the organization and continuous reorganization of the relationships and activities that emerge within the ecosystem that comprises public and private companies, NGOs, other organizations and all the local actors and interpreters. It is not possible to act differently within the scope of social innovation because it is contextualized in the social learning and innovation processes, providing the basis for the constant infrastructuring and dissemination of design opportunities and their practice. In other words, as we showed through the characteristics outlined in this paper, strategic design has the potential to contribute to social innovation, particularly in terms of activating and disseminating

social innovation processes, building upon a design-driven model of innovation that acts mainly via infrastructuring and seeding processes.

This model is limited to explain the creative process that enables social innovation to emerge and spread. Further studies need to be developed to discuss the governance models and the investments necessary to support this process.

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