

# Social Innovation in Brazil Through Design Strategy

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The world is filled with pressing social challenges that cry out for solution. On one side are issues related to natural resources, such as global climate change and adequate food supplies. On the other are problems with service systems, exemplified by issues with the cost and quality of healthcare as well as difficulties with transportation and improvements in education. Studying the social innovation phenomena through the point of view of design, the DESIS Group at the Rio de Janeiro Federal University/COPPE explores the role of design strategy to promote and support sustainable change in Brazil—socially, economically, environmentally, and institutionally.

This article presents and analyzes four projects developed in Brazil under such an approach, and discusses the theoretical framework supporting these projects.

## Design for social innovation and the DESIS network

There is no shortage of investment in and studies about innovation in business, science, and technology. Social innovation, in comparison, is little known, lacking a research agenda, basic datasets, systemic analyses, and action plans, despite the growing recognition of its power to tackle the most pressing challenges of today's society, such as climate change, chronic disease, widening inequality, criminal justice, and traffic congestion.

In a nutshell, social innovation is related to the capacity of society to solve its own problems. According to Mulgan, Tucker, Rushanara, and Sanders (2007), it corresponds to “new ideas that meet pressing unmet needs and improve people's lives” (p. 7). And although commonly associated with the nonprofit sector, it is much broader, dealing with practically every issue that impacts society at large. The word “social” is considered both as a means and an end. As a means, it indicates that these innovations are based on people's capabilities, and on unexpected interactions and partnerships among citizens, institutions, businesses, and governments. As an end, it indicates that the social effort is targeted to solve commonly recognized problems that existing businesses and technological solutions have failed to address (Mulgan et al., 2007). The definition of social innovation, conse-

quently, leads to the recognition of the limits of the current development model of production and consumption, in regard not only to environmental terms but also to economic, social, and institutional issues, linking it to the normative concept of unrestricted sustainability (Spangenberg, 2002).

Despite the fact that social innovations can be unplanned or occur spontaneously, if favorable conditions are created through design, they can be encouraged, empowered, reinforced, systematically enhanced, combined, consolidated, replicated, multiplied, scaled up, spread, integrated with larger programs to generate large-scale sustainable changes, or aimed in a more sustainable direction. For the purposes of examining the pivotal role of design in supporting and enhancing social innovation as a driver of sustainable change, the DESIS (Design for Social Innovation and Sustainability) Network was created.

The DESIS Network is a constellation of autonomous but interconnected research groups and laboratories, spread over several countries, that aim to use design thinking and knowledge for co-creating socially relevant scenarios, solutions, and programs with local, regional, and global partners. Integrating local and global points of view, it promotes open design pro-

grams, pulls projects together, and tackles complex problems in order to generate larger scenarios or visions. Additionally, it proposes new strategies and supporting tools so that new competences can be developed, helping people to move from ideas to mature solutions and viable social innovation programs. The Network's basic activities are to support DESIS research groups and labs projects, facilitate collaboration, and inform the larger audience on the potential of design for social innovation.

The DESIS Group situated at the Rio de Janeiro Federal University—Alberto Luiz Coimbra Institute of Research and Graduate School in Engineering (COP-PE)—gathers professors, graduate students, and associate researchers who seek to aid in the advancement of design research and practice in regard to social innovation in Brazil. It is done by identifying relevant cases, simulating initiatives, starting new research projects, examining the role of design as a facilitating element, gathering evidence of the potential of design thinking and knowledge for supporting social innovation, developing methods and didactic supporting materials, and proposing solutions together with local communities that can both enhance the potential of social innovations and make them more effective, accessible, and replicable in different contexts.

## Design approaches to social innovation

Without considering social innovation as the panacea to all intractable problems in society, the increasing recognition of its value is derived, on the one hand, from the understanding that current government policies and market solutions are clearly inadequate to address society's challenges (which, for instance, cut across sectors and nation-states, lacking the required models and incentives), and on the other hand, from the emergence of a broader framework that includes sustainability, known as the "new social economy" (Murray, Caulier-Grice, and Mulgan, 2010). The industrial and environmental economist Robin Murray explains that this emerging economic landscape is very different from economies based on the production and consumption of commodities. It comprises, in his words, "the intensive use of distributed networks; blurred boundaries between production and consumption; an emphasis on collaboration and on repeated interactions, care and maintenance rather than one-off consumption; and a strong role for values and missions" (pp. 4–5).

Previously, Manzini (2007), at Politecnico di Milano, from the design for sustainability point of view, had identified similar characteristics in cases developed by what

he called “creative communities”—that is, “radical innovations of local systems, i.e., discontinuities with regard to a given context, in the sense that they challenge traditional ways of doing things” (Manzini, 2007, p. 15). According to him, social innovation can be defined as a contemporary phenomenon within the context of everyday life, which comes to light through the hands of groups of people who, for many particular motivations, have autonomously designed solutions and, potentially, provided answers to the challenges that society is facing in the process of transition toward more sustainable ways of producing and consuming. He offers some European examples of these in the following:

*... types of housing where, to improve the quality of life, spaces and common services are shared (as in co-housing); the development of productive activities based on local resources and skills which are also part of wider global networks (as is the case of certain products typical of a specific local area); a variety of initiatives aimed at promoting a healthy and natural diet (from the international slow-food movement to the spread, in many cities, of a new generation of farmers markets); self-managed services for the care of the very young (such as micro crèches, small kindergartens or nursery schools promoted and managed by parents) and the*

*elderly (such as the living-together initiatives: where young people and senior citizens share housing). New forms of social interchange and favor exchange (such as the local exchange trading systems—LETS—and time banks); systems of mobility that present alternatives to the use of individual cars (from car sharing and car pooling to the rediscovery of bicycles); fair and direct trade networks between producers and consumers (such as the direct trade initiatives that have already been established around the globe)... (Manzini, 2007, p. 14)*

Manzini’s research and context-based approach explores the potential of social innovation in promoting and developing sustainable innovations, as well as the role of design strategy in projecting solutions that can build upon such social innovations, scale them up, and reproduce them in different contexts. Manzini (2008) also indicates that designers must start from the experiences and organizational models intrinsic to social innovations to “...propose products and services specifically conceived to increase their accessibility. In other words, we must reduce the difficulties we meet when setting up a similar venture” (p. 66). This requires designers to “...imagine and enact ‘enabling solutions’ specifically thought up to facilitate the diffusion, and increase the efficiency of this kind of promising self-help

organization” (p. 66). Manzini (2005b), moreover, indicates that the transition toward sustainability is a “social learning process” in which people will need to learn to produce and consume differently. Designers can also help in this process through scenario building: “...what scenarios do is to generate visions for the future (rather than of the future): visions of the-world-as-it-could-be; a possible world.” Inspired by social innovation for sustainability cases, these visions should promote new behaviors by showing people how to live a more sustainable everyday life.

Brown and Wyatt (2010) also consider the potential of the design approach for social innovation. Through examples from India, Vietnam, Ghana, Rwanda, and others, they bring IDEO’s design thinking practices to the nonprofit sector: “A better starting point is for designers to go out into the world and observe the actual experiences of smallholder farmers, school-children, and community health workers as they improvise their way through their daily lives.” Design thinkers are invited to become “embedded in the lives of the people they are designing for” (Brown and Wyatt, 2010, p. 33), learn from their behaviors, and propose solutions based on that knowledge. The authors additionally explain that “design thinkers look for work-arounds and improvise solutions and find ways to incorpo-

rate those into the offerings they create” (Brown and Wyatt, 2010, p. 32), gaining inspiration from extreme cases in which people live, think, and consume differently. The design process, in his view, begins with the inspiration space, based on in-depth qualitative research to help explore “the problem or opportunity that motivates people to search for solutions” (p. 33). Next, it moves to ideation—potentially bringing together users and designers to co-create ideas. The final space of the design thinking process is implementation, achieved through iterative prototyping cycles, in which designers create visualizations, make ideas tangible, and continually test the best ones in order to learn by doing and transform them into action plans.

From the perspective of social innovation for the poor, Whitney and Kelkar (2004), at the Institute of Design, Illinois Institute of Technology, also explore the role of design in improving housing conditions and making local economies more sustainable in India. Through design strategy, in a “base of the pyramid” project, the authors show ways that design can help to create innovations that improve people’s lives, encourage the growth of small businesses, and help, in the long term, transition residents toward improved living conditions. They propose not only learning from people’s behaviors but also encouraging new ones, and designing systems

and affordances that can support them—that is, perceptible properties that are inherently actionable or attached to action (Gibson, 1977). In this way, they believe, design can not only reinforce society’s ability to innovate, but also envision and design systems that create new affordances, and support new behaviors and activities. As illustrated by this project, designers can help to create heretofore unimagined innovations that improve life in society and introduce more sustainable models of production and consumption.

Another role particularly relevant to social innovation—because it happens “across organizational, sectoral or disciplinary boundaries [...] and leaves behind compelling new social relationships between previously separate individuals and groups” (Mulgan et al., 2007, p. 5)—is that of the connectors—“the brokers, entrepreneurs and institutions that link together people, ideas, money and power” (p. 35). This role, although not specifically associated with designers in the literature, can be efficiently performed by them, as it is proposed here, and can benefit from their way of thinking and doing, and from their sets of methods and tools, helping to link people to physical and strategic resources that are necessary for social innovations to succeed. To support this process, collections and toolkits such as “The Open Book of Social Innovation” (Murray

et al., 2010) and IDEO’s “HCD—Human Centered Design Toolkit” (IDEO, 2009) can be used; these clearly recognize the potential of design thinking in developing social innovations.

In synthesis, as illustrated in Table 1, design strategy can be understood as an approach to (a) empower existing social innovations, where designers can learn from solution ideas embedded in social innovation cases in order to support and to empower them; (b) multiply society’s intrinsic ability to innovate, where design can be used and understood as an approach to reinforce society’s ability to innovate and, consequently, to generate new solutions inspired by existing behaviors; (c) envision and create new, more sustainable social affordances and future scenarios, where design can create these affordances, and systematically prototype, encourage, and support new behaviors that direct society toward new, more sustainable directions; and (d) connect or articulate the different actors and resources required for social innovation to flourish.

In the first approach, design takes the task of spotting social innovation cases, making sense of them, gaining insights from their dynamics, and developing tools that can support and strengthen them. The second approach starts with the identification of extreme social innovation behaviors, learning from them, translating them into solu-

Design as empowerer	Design as multiplier	Design as envisioner	Design as connector
<ul style="list-style-type: none"> <li>• Identify social innovation cases</li> <li>• Map actors, contexts, activities, and relationships</li> <li>• Gain insights regarding behaviors, motivations, problems, and opportunities</li> <li>• Generate empowering ideas</li> <li>• Prototype and develop tools for supporting and scaling cases</li> </ul>	<ul style="list-style-type: none"> <li>• Identify social innovation extreme behaviors</li> <li>• Gain insights regarding motivations, problems, and opportunities</li> <li>• Translate behaviors into solution ideas</li> <li>• Prototype and develop solutions</li> <li>• Replicate solutions in other contexts to solve social challenges</li> </ul>	<ul style="list-style-type: none"> <li>• Identify contexts in need of social innovation</li> <li>• Gain insights regarding behaviors, motivations, problems, and opportunities</li> <li>• Envision more sustainable scenarios</li> <li>• Prototype and develop envisioned solutions</li> <li>• Continuously monitor and iterate solutions in context to favor a sustainable future</li> </ul>	<ul style="list-style-type: none"> <li>• Map physical, human, and strategic resources that are necessary for social innovation</li> <li>• Understand and gain insights regarding interactions, problems, and opportunities</li> <li>• Envision more sustainable relationships</li> <li>• Prototype and develop envisioned relationships as part of an integrated system</li> </ul>

Table 1. Design approaches toward social innovation.

tions, and replicating them in other contexts to solve social challenges. The third approach takes design to the next level, linking the understanding of current behaviors to the proposal and prototyping of new scenarios, where new, more sustainable behaviors can flourish. And the fourth approach (“connector”), present in most social innovations along with one of the others, starts with the mapping of the required resources for social innovation—whether physical, human, or strategic—and moves to understanding interactions, envisioning more sustainable relationships and prototyping them as a system. These approaches—not particularly linked to a single author, because several of them visit more than one approach—can be considered together, synthesizing a design approach to social innovation. In this article, design for social innovation is considered in all four directions.

### Social innovation cases in Brazil

Bringing the synthesized design approach described above to the context of Brazil, the following four social innovation cases are presented and analyzed.

#### Case 1: A university farmers’ market

The first case takes place on the campus of the Rio de Janeiro Federal University—an artificial island of a “university city,” with approximately 60,000 people circulating daily. Its food system is organized under an industrial provision in order to provide complete and low-price meals to students. The system includes procedures to control the quality of the private food trailers, kiosks, and restaurants involved as well as the university restaurants, which, after a long period of closure, are being refurbished.

At the administrative level, under the leadership of the director of the UFRJ food system, Nadia

Carvalho, a PhD student and DESIS group member, this process was accompanied by the proposal of a new type of food provision to the central university restaurant in the campus. The working hypothesis was to consider the connections among food, knowledge, and pleasure, as synthesized by the “Slow Food” approach (Petrini, 2005). Consumers—students, in this case—should be educated to appreciate the quality of food, becoming partners in the production process by supporting, through their consumption, a specific kind of locally produced food.

A proposal was made to adopt organic food provided by family farmers. One challenge, however, was the fact that such farmers were not ready to provide the necessary amount of organic food that would be required by the central university restaurant, which serves 2,500 meals per day. To address this problem, a participatory process



Figure 1. UFRJ food system meeting, using participatory process.



Figure 2. UFRJ Knowledge and Tastes Fair.

was adopted (Figure 1) in which all involved actors, including the farmers themselves, were invited to discuss the matter. As a result, the idea of an organic farmers' market emerged as a strategy to engage

local producers. This indication guided the organization of the first event, called the Knowledge and Tastes Fair (Figure 2), which included lectures, workshops, and cultural events. During this event,

several cooperatives and farmers of the Rio de Janeiro State exposed and commercialized their products, helping to establish partnerships with potential suppliers.

From this first event, a weekly organic market—named UFRJ Agroecological Fair—was organized, strengthening the relationships between the university community and organic food producers, and supporting the creation of a new culture. In addition, regular workshops organized by undergraduates were provided to producers, intended to help improve their planting and food processing techniques, as well as to create a stronger relationship between the university and the food producers.

In the above example, the role of “design as envisioner” and “design as connector” is performed by the university and multidisciplinary team of professionals and students—not necessarily executing all the activities identified in the proposed model (Table 1), but including the following: the identification of needs and the opportunity space for social innovation; envisioning more sustainable scenarios; learning about behaviors and gaining insights through the prototyping of an organic food market; and development of a new food system based on lessons learned and relationships built, which crossed organizational and disciplinary borders, such as nutrition, biology, administration, and design.

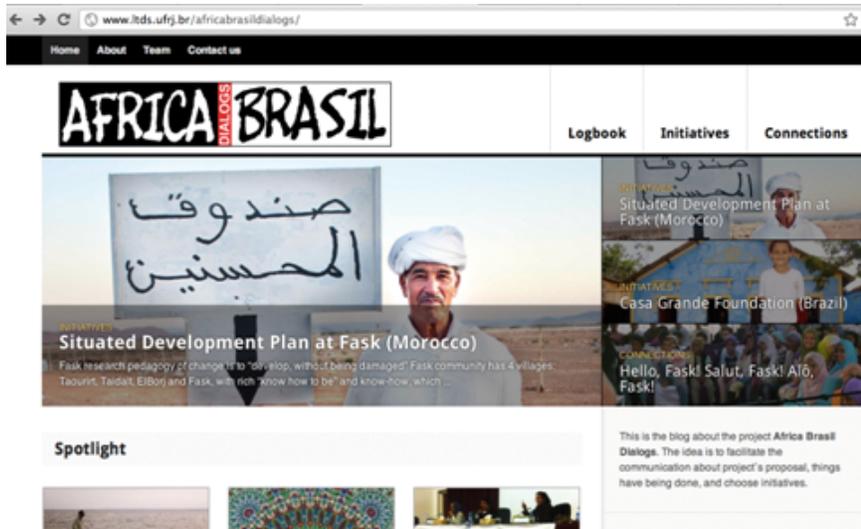


Figure 3. Africa-Brazil Dialogs Web site.

Although the design activity in this project was formally or explicitly related only to the competences related to product design, what was described before indicates that a broader design thinking activity was performed, including, in methodological terms, participatory design and iterative prototyping processes involved in testing the viability of a regular farmers' market. The notable roles and abilities to envision future and more sustainable behaviors regarding food consumption and provision at the campus, and to connect or articulate different players in order to support social innovation, were also highlighted.

#### **Case 2: A mutual learning platform for Africa and Brazil**

"Africa-Brazil Dialogs" (Figure 3) is an ongoing project developed and

coordinated by LTDS-Laboratory of Technology and Social Development and DESIS Group at the Federal University of Rio de Janeiro. It is financed by the Brazilian National Council for Scientific and Technological Development, CNPq.

The objective of "Africa-Brazil Dialogs" is to promote direct dialogues between creative communities in Brazil and Africa. The proposal gathered social and community agents, together with local universities, whose role it is to facilitate the process of identifying social innovation initiatives and enabling direct contacts between the communities involved in each country. The university network is formed by Rio de Janeiro Federal University (Brazil), Cape Peninsula University of Technology (South Africa), University of Botswana (Botswana), Makerere

University (Uganda), University of Nairobi (Kenya), and Université Mohamed V (Morocco).

The multiple languages involved—French, Portuguese, and English—are a key barrier to overcome and, to enable direct dialogues and relations between creative communities, all kinds of multimedia materials are being considered, including, for example, movies that "tell the stories" of the communities involved. Each movie is considered as an "open window" to the other place, showing the everyday life, problems, and solutions developed by each community. It requires the universities (specifically the teachers, with or without students involved, mostly working in design departments) to act as interpreters of their localities by discovering social innovations in their own local contexts. The cases indicated by teachers and students in each African country are analyzed by the Brazilian team, which simultaneously looks for similar cases in Brazil. The cases are clustered by thematic areas, such as community-based tourism, for example. After that, some movies are produced and presented to the African countries by the Brazilian team. From this exhibition, it is expected that a "dialog" takes place, involving Brazilians and participants from the African countries. The Brazilian team registers the discussion (through a new movie) and brings it back to its own local communities.

Design under this broader framework acts in multiple approaches, both as empowerer and connector, by identifying existing social innovation cases, actors, and extreme behaviors; by giving visibility to the cases identified; and by creating the opportunity for communities to reciprocally exchange solution ideas and, eventually, apply or multiply such ideas in their own contexts or improve their existing solutions.

### Case 3: A student car sharing system

The third case, called CARUni, was developed by Fabio Fonseca and Thiago Carvalho—former students of the Computer and Information Engineering Departments of the Rio de Janeiro Federal University—and it is now the focus of one student’s master’s thesis.

The project was initiated with the understanding that the public transportation system at the Rio de Janeiro Federal University campus is overloaded, traffic jams are increasing in the area (because economic development in Brazil has allowed more people to have cars), and exchanges of rides among students in the campus has been a common practice but is now generally considered to be a dangerous activity. The goal of CARUni is thus to promote safe ride exchanges to and from campus and to encourage students to give and take rides again.

Because it is based on Web technology and is free of charge (Figure 4), CARUni allows registrations in the system only through a university ID number, which promotes trust and safety, because

only registered students, teachers, and other employees can access the system and participate. The terms of the ride exchange are freely agreed upon between the participants, and the results reinforce the social network that the system intends to promote.

Although in technological terms the solution itself is not particularly innovative, because there are other ride exchange systems available around the world and in Brazil, the solution is a social innovation with reference to the context (the university) in which it takes place. And it promotes social innovation on the university campus both as a means (innovation based on intensifying and rediscovering the value of interpersonal relations) and as an end (getting a ride, rather than waiting for inefficient public transportation). As a means, the CARUni is based on, but also targeted to increase, interpersonal relations on campus. As an end, CARUni seeks to provide a more sustainable transportation system in a city that experiences traffic jams on a regular basis.

In design terms, specifically regarding design thinking practices (IDEO, 2009), the CARUni project is strongly based on the empathetic and prototyping abilities, understanding behaviors and iteratively developing solutions to improve the campus everyday life. Here, both the roles of connectors, empowerers, and multipliers are present:



Figure 4. CARUni Web site.

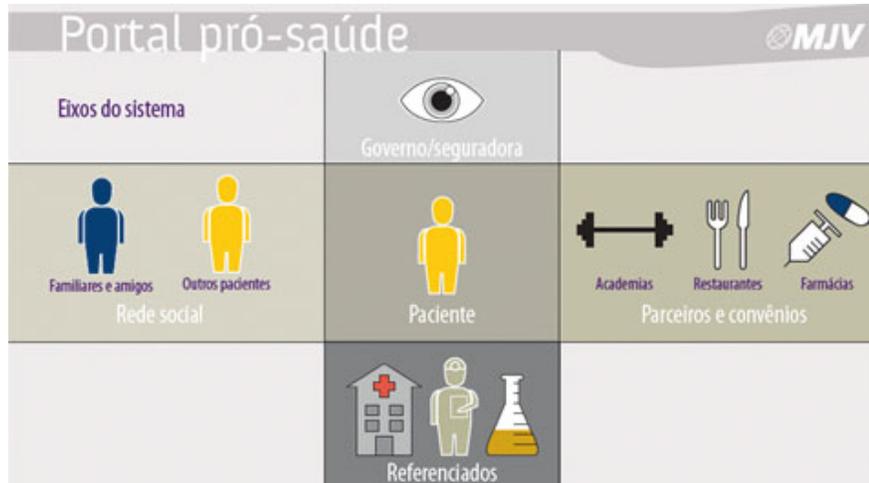


Figure 5. Pro-Health diagram.

solution developers act as multipliers, observing and empowering what would be considered an “extreme” and exceptional behavior (riding in a car with a stranger). Now, through the interaction of current CARUni participants, which is active and spreading, other services are being developed by its student founders to address the needs of daily life on campus.

#### **Case 4: A health insurance private firm platform**

This project, “ProHealth Platform” (Figure 5), was designed and developed by a multidisciplinary team of anthropologists, designers, and computer scientists from MJV Technology & Innovation, a Brazilian innovation consultancy firm, coordinated by Heloisa Moura, a DESIS Group research associate. The intention was to empower people

with chronic diseases by creating technological tools that could help them to better manage their health conditions and improve their quality of life. The system includes, among others, private health insurance provider Web-mobile portals with individual Web pages for each policy holder, containing personal historical health data—visually presented according to level of expertise; communities of practice for exchange of information about health; personal health improvement programs linked to reduction of insurance plan costs; discount service networks, such as pharmacies; shared personal information spaces, where, for instance, doctors selected by the policy holders can access some of their health data, such as exam results; communication tools connecting groups of people, such as a diabetic patient and

all the different doctors assisting him or her individually (endocrinologists, cardiologists, dermatologists, and nutritionists, for instance), so they can exchange information, discuss health treatment options, give online feedback to the patient, and send prescriptions; and mobile apps, such as a personal health manager, food calories calculator, motivational coach, and service maps informing, for instance, gymnastic centers and health food stores based on Global Positioning System.

Through a systematic process of research—both qualitative and quantitative, combining ethnographic and market research methods—the project started by mapping the actors involved in the health system, from patients to doctors, health insurance professionals, and pharmacy attendants. Within each group, the extremes were also mapped, such as a child with Type 1 diabetes and a senior person with the Type 2 form of the disease and blindness stemming from diabetic complications.

Through analysis, synthesis, and problem solving, field and secondary data were translated into personas or archetypes of user profiles (for instance, a high blood pressure patient who monitors the disease autonomously and takes charge of his life, collecting clinical information and disseminating it to the various doctors who supervise his condition). Additionally, guiding criteria were defined, based on research

insights and patterns of needs, motivations, problems, and opportunities that were found. Two examples of these criteria might be “to support sharing of relevant information among multiple doctors that are supervising a patient,” and “to help patients decipher the meaning of medical exams.” These materials supported the ideation or co-creation process, which involved MJV’s multidisciplinary team, patients, and doctors, as well as other professionals, including client representatives, and they led to the generation of a large number of ideas. Through iterative cycles of prototyping and testing, the best and most sustainable solutions were developed and tested.

Now, the Pro-Health Web-mobile platform is an integrated system that considers several aspects of the disease management process, from monitoring vital signals and reminding patients about their medical appointments, to sharing collected data and alerting doctors and patients to dangerous health conditions. As a result, patients can better understand their disease and treatment, monitor their health condition, share relevant data with multiple doctors, take prescriptions at the correct time, feel motivated by their social network, and manage their health condition—leading to an improved quality of life and a reduction of health insurance costs, which, in return, also brings the reduction of the monthly fee paid to the insurance company.

In this example, the roles of “design as empowerer” and “design as envisioner” are both found, because ProHealth Platform empowers patients to manage and, perhaps, improve their health conditions, and also provides a solution that creates new and more sustainable social affordances and future scenarios. Currently, the platform is helping a health insurance private firm to reduce costs and its patients to improve quality of life.

#### **Discussion and conclusion**

The “design” point of view on social innovation is to consider each case as a “solution,” achieved through a designerly way of knowing and doing, or through design ability. Here, design activity is considered “a multi-faceted cognitive skill, possessed in some degree by everyone” (Cross, 2009, p. 115).

Design is also considered here as a research activity involving non-designers—that is, the “silent” type of design suggested by Gorb and Dumas (1987), which is practiced by groups of people and may thus give rise to social-innovation initiatives. Cross (2006, p. 22) notes that “there is enough evidence to make a reasonable claim that there are particular ‘designerly’ ways of knowing, thinking and acting. In fact, it seems possible to make a reasonable claim that design ability is a form of natural intelligence [...] with a central concern in ‘the

conception and realization of new things” (p. 1).

Manzini (2007) distinguishes the design approach to social innovation—considering each case as a design solution and promoting research activity to find out the silent design present in each of these solutions—from those made by other disciplines like economy, sociology, or psychology. This consideration does not reflect the will to strongly delimit disciplinary competences, but it does indicate the presence of a particular design point of view toward social innovation. As asserted by Owen (2007), “The designer invents new patterns and concepts to address facts and possibilities. In a world with growing problems that desperately need understanding and insight, there is also great need for ideas that can blend that understanding and insight in creative new solutions” (p. 17).

Within this perspective, an approach to social innovation was proposed, synthesizing four roles, sometimes simultaneous, performed by design: as empowerer, multiplier, envisioner, and connector. All four approaches start from the understanding of local contexts, behaviors, needs, and motivations. In different ways, they all move from insight, through systematic analysis, synthesis, and problem solving, to idea generation—whether those ideas help create supporting tools, translate behaviors into solutions, or move from current behaviors to

more sustainable scenarios. And all four approaches use iterative prototyping cycles to make ideas tangible, and continually test and learn from actual users in real contexts, in order to implement, scale, and diffuse them.

The presented cases both help illustrate how social innovation is understood and approached by designers, and others that act as designers, in Brazil. By studying the social innovation phenomena, the DESIS Group at the Rio de Janeiro Federal University is helping to identify relevant cases and develop methods, tools, and analytical models to collaborate—through the point of view of design—with all those interested in changing the “status quo.” ■

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Carla Cipolla holds a PhD in Design from the Politecnico di Milano on which she has started up a successful record of research projects focused on design for sustainable social innovation. She is an associate professor at the Rio de Janeiro Federal University/COPPE and a founding member of the DESIS (Service Design and Social Innovation) Group at the same university. The DESIS Group seeks to investigate and promote social innovation through design thinking and to develop new service models toward more sustainable ways of living. Carla and the DESIS Group are also founding members of DESIS Network, which brings together similar university groups all over the world.

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