

Design and Innovation for Popular Entrepreneurship

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A. Introduction

Design and Innovation for popular entrepreneurship is an extension course at the Federal University of Rio de Janeiro sponsored by FAPERJ (these initials stand for Carlos Chagas Filho Research Support Foundation of Rio de Janeiro). Its purpose is to provide the entrepreneurs, who are at the incubation period, with the role of co-designers of their own businesses. This requires the construction of enabling tools for a possible and desirable vision of the future of entrepreneurship, and enabling systems, through services, products, spaces and tools of communication as support. In the first edition of the course the target public was constituted of entrepreneurs from the productive chains of Culture, Gastronomy and Tourism, and Service. This course was organized in 14 design workshops. Their characteristic theme was related to the productive chains and defined by the instructor and entrepreneurs in interaction. The entrepreneurs were also supposed to identify shared strategies and partnerships. These strategies and partnerships were organized in scenarios and worked on in relation to each entrepreneurship [1].

We are going to highlight in this paper what we call the *instruments of present description*. Their objective is to describe and analyze the focus activity of the productive chain and establish the relevant aspects for the project. They are used to recover the cultural origins of the entrepreneurship and consolidate the business identity.

The second kind of instruments is of *future description and strategy clusters*. These instruments introduce questions to stimulate a profound description of aspirations, identifying them with elements lost in day-by-day reality due to the attempt to accomplish the imposed aspirations in the entrepreneurship. The answers to these questions start by setting the strategies of the group of entrepreneurs, which will help outline the scenario structures. The next step is to identify, for each emergent strategy, the promising partners that can contribute to its accomplishment. This process reveals the potentialities and resources in the place (people, organizations and institutions rooted in the territory) as well as the potential external partners. A color code is introduced to differentiate the potential category of partners: institutions, associations and groups, individual and private initiatives. The result of the *instruments of future description* is a series of experimental strategies and potential partners derived from these strategies, to be discussed collectively and in groups according to a theme in a separate board: Group of Strategical Instruments.

The potential partners identified in the *Scenario Construction* are mapped according to their proximity with the community – resources present in the context that may be connected to the initiative – in a deliberate effort to maximize connections with members of local communities, identifying potential partners in the context. The next step is to identify their *categories*: individuals, associations and groups (third sector), institutions (public administration, schools and universities) and private initiative. Then, each potential partnership is categorized according to its strategy related aspect: production, commercialization, internal organization, vocational education and training, and communication. At last, the potential partners are classified according to the priority the partnership represents for the strategy. This process also helps to understand the sequential steps necessary to reach the established goals. The study of scenarios, from a shared theme, makes it possible for the entrepreneur himself/herself to bring up his/her own theme proposal – a very important step for one's perception of the capacity of making changes.

The point of departure for this project was a shift of focus from business to *designing* and from product project to product and service system project, in a situated and dialogical fashion. That shift enlarges the perspective on the means, processes, projects and services; and, consequently, enables the development of innovative strategies for action [2].

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B. *Design and Innovation – Theoretical framework*

Underpinning this project, there is the research on learning processes developed through the use of CAD (Computer Aided Design) in clothes design [3]. In this research we highlight the role of drawing as a mediator object in product conception. According to [4] drawing is an important tool in the natural process of designing; however, only recently researchers have sought to understand this importance in its essence and constitution.

Social innovation is discussed by [5] and [6], mainly with respect to the local dimension. These authors argue that there is no systemic change if the change is not conceived in a local scale, that is, considering the local and daily practices of the community. Thus, the effort to innovate should become easier by the implementation of a co-design process, similar to the one suggested by [7], which regards the understanding that designers' social responsibilities include, mainly, the ethical consideration of their methodologies [8], beyond the consideration of product form and function only. That requires the elaboration of a theoretical framework and a dialogical perspective in the research and derived projects, so that relational ties between interlocutors can be established, which represents more than an instrumental relation between knowledge objects and experimentation.

C. *Scenario Building Workshop*

The Scenario Building Workshop was part of the project Creative Communities for Sustainable Lifestyles (CCSL). CCSL was coordinated by DIS-Indaco Politecnico di Milano in Italy and by Strategic Design Scenarios (SDS) in Belgium and had as its main partner the United Nations Environmental Program. In Brazil, the Laboratory of Technology and Social Development (LTDS) from the Production Engineering Program at COPPE/UFRJ articulated this network with the education of industrial designers and production engineers. This experience, briefly summarized below, was important for the development of a fruitful collaboration between Production Engineering and Industrial Design.

The purpose of CCSL is to investigate the community-based social innovation practice and its implications for the promotion of a more sustainable everyday life in urban contexts as well as new sustainable lifestyles. The project collected case studies in emergent countries – in particular Brazil, India and China – and outlined a comparative study between these cases and the ones previously identified in European context. The research Emerging User Demands for Sustainable Solutions (EMUDE) identified a relevant amount of cases and, based on them, proposed recommendations for public policies, research and project guidelines in order to consolidate and reproduce the good practices (<http://www.sustainable-everyday.net>). CCSL considers three aspects in particular:

- the nature of the groups of people who generate these innovations (the creative communities);
- their role in the promotion of new sustainable lifestyles (the promising cases);
- possible ways to make these promising cases more accessible, effective and feasible, through initiatives and appropriate measures (the enabling systems).

Some examples of social innovation cases in Europe include productive activities based on local resources and competencies. These examples can be easily related to the principles of Solidarity Economy, as they enable – through creative communities and enabling platforms – the socioeconomic, ethnic and cultural potentialities of social initiatives to be recognized, valued and multiplied [9].

The Scenario Building Workshop took place in Brazil on April 17, 24 and 25 in 2007, at COPPE/UFRJ under the coordination of Prof. François Jégou, from Strategic Design Scenarios. It proposed the building of three sets of scenarios, which presented local perspectives on sustainable lifestyles; in other words, life ways that adopted collaborative services generated by creative communities and adapted them to the local context characteristics.

1) *Development*

The workshop lasted three days. During this period, the participants were requested to use different scenario representation and visualization tools, such as story-board, story-telling and photo-story. The tool of photo-story was used outside the academic context to produce quick (instant) visualizations of everyday life regarding sustainable lifestyles in action.

The participants of these workshops were a representative of the non-governmental organization RCS (these Brazilian initials stand for Service Units Network), two students from the fifth semester of Industrial Design from EBA/UFRJ (School of Fine Arts at the Federal University of Rio de Janeiro); five Master's students from the Production Engineering department of COPPE/UFRJ; two professors of UFRJ, one from

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Industrial Design and the other from the graduate program in Production Engineering; two doctorate students in Sustainable Design from Poli-Milan; and the co-conceiver of CCSL, from Strategic Design Scenarios (SDS), totaling 13 participants. These participants were organized in 3 groups of four, coordinated and advised by professor François Jégou, from SDS.

The exercises were developed in four main parts.

1. Definition of local solutions for specific contents: the themes were presented to students who were, in turn, required to adapt the collaborative services to the local context and to their culture. A selection of 4 to 5 of these services was schematically presented with the support of a multimedia projector. In groups, students discussed and decided for the best way of adapting the different options presented for the local context. These options were Food, Care for Neighborhood and Coexistence.

2. Life context and presentation of the case: the objective of this part was to visualize the potential users of the proposal in their everyday life context and demonstrate ways of how they could use the different collaborative services. A series of cards with images of each service was distributed to the groups, who, in turn, selected a sequence of eight cards that better represented, in their judgment, the chosen service. Then, each group narrated, briefly, the contextualized use of each service. Finally, the groups narrated the chosen sequence of eight images.

3. Use of context and photo-story: the objective of this part was to use sketches and photographic cameras in order to produce a quick visualization of the services. Based on the selected narrative (cards and text) the groups organized a small scenario dictionary to work as a support in the service simulation. For each narrated scene, several photos were taken to characterize the place, the necessary accessories and the main actors, concerning each service user's times, places, behaviors, habits and attitudes. As a result of this part, groups were able to give visibility to the service, regarding the local context and their culture, in a way they were able to materialize in it their potential style of sustainable life.

4. Final use and presentation (with interviews): the objective of this part was to test and discuss the collaborative service regarding its facility for users' adoption and its communicative potential through a photographic scenario. Then, two external participants were called to listen to, watch and comment the presentations. Successively, each group presented their scenario and interviewed the external participants who, theoretically, represented the service potential users. Each presentation was recorded with a video camera.

2) Results

The activities conducted in the workshop provided the students and professors with the opportunity to experiment these instruments in a participative way aiming at the scenario building through the articulation of simple solution characteristics. Besides, participants had the opportunity to experiment interactively the product-service system, experiencing themselves the role of users of this system. They were also able to prepare a material in order to stimulate a strategic conversation between the different social actors. All these opportunities enabled their initiation in the process of co-design.

The exercise was a compact educational experience in two Design disciplines: Design for Sustainability and Scenario Building. The first one introduced the notions of social innovation and collaborative services under the perspective of sustainable life ways. The second one put forward the proposal to develop capacities of alternative view expression, with focus on the complexity of the product system and with attention to the multiple and interdependent actors.

D. Design&Innovation – extension course

Popular Entrepreneurship Design is an extension project integrated into the research line Social Interest Design and into the Industrial Design teaching – Product Project [10]. The project is structured as a multidisciplinary network, covering teaching, research and extension. Some of the results of the project in 2007 were (1) the promotion of the extension course, Design Innovation, which granted certifications to 31 entrepreneurs from the productive chains of gastronomy, culture, tourism and services from the Afro Brazilian Incubators and from the Popular Entrepreneurships of the Palmares Human Rights Institute; (2) the participation in the Extension Congress and in the Scientific Initiation Conference; (3) the promotion of a public event for the closing of the first edition of the course, at the Science and Culture Forum of UFRJ; and (4) the elaboration of an educational material with DVD on the Design and Innovation workshops.

1) Course proposal

The course Design & Innovation proposed presenting elements of design, processes and business that might promote amelioration in the quality of services and products developed by popular entrepreneurship.

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The general objective of the course was to work on design elements aiming at the contextualization and cultural valorization of the artifact, product or service, following the notion of original symbolic sites [2]. The specific objectives were

- Reflect on the personal work process;
- Discuss elements of esthetics in concept generation;
- Allow the generated knowledge to root in the artifact, product or service development process;
- Generate know-how derived from the innovation process;
- Aggregate sustainable values to the product-service system, such as responsibility facing future generations, social quality, coexistence and care (in the sense of care for what is done – friendliness).

2) Methodology

The course was delivered by an expert professor, with the help of an expert assistant, in each module. The total course period was of 56 hours, distributed in 4 thematic modules. The Incubators provided a flip-chart easel with paper, coloring marker pens, colored chart papers, masking tape, scissors, colored post it, a microcomputer with MS-WORD and MS-POWER POINT and a multimedia projector. Two questionnaires were applied: the first one, at the beginning of the workshops, to assess participants' expectations; the second one, at the end of the workshops, to assess the accomplishment of objectives, method and educational approach. The results were organized in a handbook and DVD, with the video of the workshops. From this video, we select the images below (Fig. 1).

Fig. 1. What are the directions to be taken by designers in order to promote social innovation scaling up inside Brazilian reality?

The course was delivered in the facilities of the Incubator, in Rio de Janeiro. The Incubator financed the transportation for the entrepreneurs. The thirty-one (31) entrepreneurs, who complied with the minimum required frequency (75% of the 56 hours), received certificates of the Federal University of Rio de Janeiro (UFRJ). Before the course, a meeting was held in order to understand the environment (problems, opportunities, ongoing actions), in which the Incubators are inserted. After the course, a public event, with the participation of partners, was held to close activities, diffuse results and deliver the certificates. Briefly, the methodological phases:

a) Definition of target-public

The definition of the target-public was provided in cooperation with the managers of the Incubators, following some criteria, such as design demand in the productive chains and the entrepreneurship phase in the Incubation process. Period: October 2006.

b) Mapping

All entrepreneurs were mapped so the organization of the Incubation process could be understood. For that, the entrepreneurs' files were analyzed – these files already existed in the Incubators. Period: March 2007.

c) Pre-selection of entrepreneurs

The entrepreneurs, whose files showed adequate profile to handle the target-public defined in phase 1, were contacted by phone, by the Incubators, for the appointment of interviews. Period: April-May 2007.

d) Interviews

The interviews lasted 40 min and were conducted individually, with the maximum of two interviewers (students with the scholarship PIBEX). The instruments used were paper and pen. Period: May and July 2007.

e) Course organization

The course was organized in four modules in the format of Workshops. One professor was in charge of each module, assisted by a student/student with scholarship. Period: July 2007.

f) Educational material formatting

The educational material was used as a reference in the theoretical explanations, as a basis for the practical applications (group dynamic exercises) and as an opportunity for individual theoretical exercises. Period: August 2007.

g) Implementation of workshops

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Fourteen (14) workshops were promoted, distributed in 4 thematic modules, for each productive chain, totaling 168 hours (56 hours for each productive chain). The workshops were held every week, in three different places, according to each Productive Chain. Period: September to December 2007.

h) Evaluation

The evaluation was conducted through the application of a final questionnaire so that entrepreneurs could evaluate the Workshops. Period: at the end of Module 4, for each class group.

i) Organization of a closing event

The closing event was held at the Culture and Science Forum of UFRJ, Pedro Calmon room, on December 14, 2007. Period: November to December 2007.

j) Entrepreneurs' certifications

Thirty-one (31) entrepreneurs finished the course satisfactorily, receiving, for that, a certification for Extension Course issued by the Extension Pro-Chancellor's office of UFRJ. Period: January 2008.

3) Development

The public was composed of 42 entrepreneurs from the productive chains of gastronomy, tourism and culture, from the Incubators (IA/IEP/ IPDH which stand for Afro Brazilian Incubator and Popular Entrepreneurship Incubator from Palmares Human Rights Institute). Typically, they were interested in the insertion and extension of innovation and design actions in their entrepreneurships. The entrepreneurs appointed by the Incubators for the workshops were in the final Incubation phase. The group was composed of three undergraduate Industrial Design students, from EBA/UFRJ, with the scholarship PIBEX- 2007/II; two Master's students in Production Engineering from COPPE/UFRJ; a Doctorate student in Production Engineering from COPPE/UFRJ; two professors, one of Production Engineering from COPPE/UFRJ and the other of Industrial Design from EBA/UFRJ; and an employee from UFRJ, as technical support.

The course was organized in four thematic modules under one professor's responsibility (Figure 2).



Fig. 2. Schematic representation of the Design&Innovation course

MODULE 1, Social-Cultural Perception of the Entrepreneurship, aimed at establishing relational ties for the development of a co-design process of the Service-Product System (SPS). For that, the productive chains and entrepreneurs main activities were assessed and the main problems and differences were analyzed, with focus on the products and services developed. Finally, entrepreneurs were invited to perceive the culture surrounding the entrepreneurships and the interaction between them – a constitutive element for a cultural rescue and valorization. The total time for this module was of 16 hours, distributed in four workshops:

Workshop 1: Identity building – it aimed at describing and analyzing the productive chain focus activity and establishing the relevant aspects for the business development.

Workshop 2: Future scenario building – it aimed at revealing the potentialities and resources (people, organizations and institutions, rooted in the territory) as well as potential external partners.

Workshop 3: Partnership building - it aimed at analyzing the potential partners and planning their potential participation in the identified strategies.

Workshop 4: Strategic mapping - it aimed at guiding the creative process considering the several questions that determine the formalization of the constituent elements of the mapped strategies. The strategic mapping

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uses a graphic language with fixed representation rules available in an open library of graphic elements. That is essential to differentiate groups, places and communities and thus build an active network with active members and proactive strategies.

MODULE 2: Market Study and Partnership Articulation. This module aimed at approaching the market aspects that influence the definition of negotiation/articulation strategies for the reduction of entrepreneurship risks. For that purpose participants were required to analyze the market potential for the entrepreneurships, taking into account the conditioning factors of each segment and the agents interested in the activities; the latter specifically for the articulation of different partnerships. Module 2 was concluded with an evaluation of the product and service dimensioning and life cycle as well as their potential implications in the market. This module also lasted 16 hours distributed in four Workshops.

Workshop 1: Situating the productive segment in the market: traditional market risks and their reflections on society.

Workshop 2: Mapping traditional market risks: entrepreneurs' awareness for the negotiation planning.

Workshop 3: Negotiation simulation: development of a negotiation strategy according to the context and the specific elements of each entrepreneurship, by the use of the game "Missing link"

Workshop 4: Strategy and partnership creation: strategy creation for a negotiation/articulation.

MODULE 3: Visual Communication and Entrepreneurship Cultural Identity. This module aimed at developing entrepreneurs' reflection and perception about the esthetical and symbolic elements present in the image of the entrepreneurship, be that image related to the product, service or the visual programming itself. With that, we expected to obtain a more efficient and different visual communication, valuing the specific cultural elements. The visual elements of each entrepreneurship were assessed and analyzed regarding the symbolic value conveyed. From that, the participants reflected on the elements (color, forms, patterns, etc.) that directly influence the product and/or service development. All this process sensitized the entrepreneurs to the importance of the image, in its esthetical and symbolic concept, enlarging their perception and empowering them with conceptual tools to better build visual communication for project presentation, service and product development and symbolic element conception in their entrepreneurship. This module lasted 12 hours, distributed in three workshops:

Workshop 1 : Visual elements – development of activities with visual elements, considering the symbolic value forms, colors and patterns convey.

Workshop 2 : Visual communication and the symbolic in the entrepreneurship – definition of the concept to be transmitted, in other words, the values present in the entrepreneurship.

Workshop 3: Presentation and visual identity – project presentation, regarding the factors that influence the quality of the presentation.

MODULE 4: Service-Product System (SPS) aimed at developing a prospective view of the service-product system and characterizing each entrepreneurship process through the identification of the product, steps, resources, etc. Module 4 also aimed at developing the service-product system, through the use of design scenarios as support to entrepreneurship/partner network communication and interaction. This module lasted 12 hours, distributed in three workshops:

Workshop 1: Design scenarios – this workshop was turned to the presentation of the necessary components to access a possible and desirable future.

Workshop 2: Scenario personalization – the participants were expected to understand and refine each scenario through its implementation and analysis as structured strategies.

Workshop 3: Instrument of service-product system mapping – the workshop was turned to assist the creation and development of contextualized strategies in order to optimize connections with partner institutions, that is, in order to favor synergy between entrepreneurs and their partners.

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Figure 3 shows the whole program of modules and workshops, in the period from September to December of 2008.

Workshops	T1 - Food	T2 - Tourism/Service	T3 - Culture
M1 - 1	27/09 (Thu)	02/10 (Tue)	11/10 (Thu)
M1 - 2	29/09 (Sat)	09/10 (Tue)	18/10 (Thu)
M1 - 3	04/10 (Thu)	16/10 (Tue)	25/10 (Thu)
M1 - 4	06/10 (Sat)	23/10 (Tue)	30/10 (Tue)
M2 - 1	11/10 (Thu)	25/10 (Thu)	01/11 (Thu)
M2 - 2	18/10 (Thu)	30/10 (Tue)	06/11 (Tue)
M2 - 3	20/10 (Sat)	06/11 (Tue)	14/11 (Wed)8/11
M2 - 4	25/10 (Thu)	08/11 (Thu)07/11	24/11 (Sat)
M3 - 1	27/10 (Sat)	13/11 (Tue)	29/11 (Thu)27/11
M3 - 2	01/11 (Thu)	20/11 (Tue)	04/12 (Tue)29/11
M3 - 3	10/11 (Sat)	22/11 (Thu)	06/12 (Thu)04/12
M4 - 1	22/11 (Thu)	27/11 (Tue)	08/12 (Sat)06/12
M4 - 2	24/11 (Sat)	29/11 (Thu)	11/12 (Tue)
M4 - 3	29/11 (Thu)	01/12 (Sat)	13/12 (Thu)
14/12/2007	Closing Event		

Fig. 3. Program of the Design & Innovation extension course activities

4) Results

The Incubators expected the elaboration of design scenarios and enabling platforms for the productive chains. These results were accomplished and materialized in the educational material – outlined in the format of scenarios – and in a DVD (enclosed in the educational material) produced during the workshops.

We observed that workshops contributed to restructure existent projects and stimulate new entrepreneurial practices. There was an increase in entrepreneurs' self-confidence with respect to the presentation of their proposals and aggregation of design values: strategies and partnerships, as well as the possibilities of using design in each productive chain to build scenarios.

Specifically, the use of design in the given productive chains entrepreneurships generate action strategies concerning entrepreneurship visibility, entrepreneurship scope enlargement, and project release in the market.

The results obtained in the evaluation demonstrate the course fulfilled its objectives by opening new spaces in the Incubators for future editions with new entrepreneurs and for continuation, regarding the entrepreneurs who concluded the first edition. Our proposal is, as a continuation for the first edition, to focus on the organization of entrepreneurships in networks and clusters (not necessarily in productive chains); and, for future editions to be attended by new entrepreneurs, to insert a fifth module turned to the preparation and organization of the public event. The organization and realization of the closing public event were possible with the participation of the entrepreneurs. With that, a product was generated and value was aggregated to

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the pedagogical and educational course proposal. Therefore, the fifth module could open space to this production, increasing the possibilities of actions for students with scholarships and for all the project participants.

E. Conclusion

The designer brings into action communication, visualization and creation instruments and also acts as a mediator of several actors, by working on solutions with them, who know their own reality, in a co-designing process. The Designer's position in this process is to ethically judge methodologies and choose the kind of welfare he/she is willing to promote. For that, the designer must use and promote the use of adequate and socially responsible instruments [8]. The co-design process favors better relationships between the entrepreneur and his/her business and the process of incubation and his/her professional acting, by modifying traditional concepts of marketing and design. It permits the perception of an **active role** in improving his/her entrepreneurship, as well as his/her **daily life**. Moreover, it favors **synergy** between different initiatives from other entrepreneurs at different stages of the incubation process.

The methodology proposed by [1] and [6], Design guided Scenario, enabled the articulation of shared overviews of the project proposals, the consideration of the plurality and local dimension and more creativity in the presented proposals during the workshops. The extension and research activities realized were concentrated on the internalization of design knowledge as a strategic element in the incubation of entrepreneurs. These activities also underlay the production of an instructional material that, supported by the communicative resources of e-learning, can be additional help in the consolidation, autonomy and auto-organization of a series of social interest entrepreneurs. In the extension activities, Innovation Workshops are an active exercise of co-design. These workshops enhance situated innovation, rooted in the popular culture.

The video produced in the workshops offered to the Culture Productive Chain class serves as a form of visualization. It shows all the steps followed in the process of co-designing (methods, tools and the workshops themselves as enabling systems), which provided guidelines for each entrepreneur's creative process, resulting in an important shift from a problem-focused to a solution-focused approach. The major problem pointed by entrepreneurs in the beginning of Design&Innovation workshops (video frames below) was the lack of money to make their projects. Then we started the course trying to understand those projects so that later we could search for the kind of support necessary to make them happen. By the end of the workshops the result was the appearance of new ideas and new projects, but in a new basis that allowed to review the initial problem (lack of money) and pose it in another way: Once the lack of money does not allow us to do what we want, what can we do to change this reality? What are the systems we need to conceive in order to reach the results we wish for?

The process of learning we went through allowed us to experience a systemic change generated from this entrepreneurship local practices. That change refers to a transformation from an initially passive attitude facing the problem to a proactive attitude, considering partnership building and each initiative necessary components in order to reach the desired solutions.

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