Oct 16th, 9:00 AM

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Citation

Veneziano, R., Ranzo, P., Scalera, G.,and Rossi, M.(2013) Listening design: a new methodology for design and innovation processes, in Reitan, J.B., Lloyd, P., Bohemia, E., Nielsen, L.M., Digranes, I., & Lutnæs, E. (eds.), *DRS // Cumulus: Design Learning for Tomorrow*, 14-17 May, Oslo, Norway. https://doi.org/10.21606/learnxdesign.2013.156

DRS // CUMULUS 2013
2nd International Conference for Design Education Researchers
Oslo, 14–17 May 2013

Listening design: a new methodology for design and innovation processes

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Abstract: *The aim of the paper is to describe a design methodology in the area of innovation design highlighting the importance of sharing strategies, methods and listening practices to be implemented at specific stages in the project's development. The ability of creative systems to generate product or process innovation and to integrate creativity and know-how in the products is the necessary condition to promote design activities and the following competitive dynamics able to meet the needs of the ever-changing world of consumption. The presence of universities, defined as "engines of innovation" (Florida et al. 2002), in complex production territories can establish close links between local development and intellectual capital and generate innovation processes. The interaction of and exchange between different competencies (universities, enterprises, institutions, users) makes up the environment where to formulate, share, design and test the demand for research-led innovation. Starting from the Design Thinking approach, the paper puts forward a methodology for the development of activities that may generate innovation, giving a crucial role to the "open listening" stage meant as the experimentation of an open, equal listening model provided with specific tools.*

Keywords: Innovation design, knowledge-intensive, creative ecosystem.

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Introduction

In the current economic framework, the crisis of production models has brought to light the need to implement design-led innovation processes to increase their competitiveness in the global system. A few years have passed since Richard Florida related the development of territories with the intellectual capital, namely the role of universities as innovation engines for local development. Universities, in collaboration with public and private bodies, are able to educate creative talents, trigger cultural contaminations and set up complex systems of relations between research and production.

Thanks to its intrinsic critical ability with respect to everyday objects and actions, design is able to feed radical innovations into the world of consumption and thus inform innovation strategies in different fields. Actions in the disciplinary area of design at various levels do not only direct the companies' demand for innovation and the manufacturing of new, material and immaterial products: they also spread values that affect lifestyles in the society. Movements like the Massive Change Network (M.C.N.) promoted by Bruce Mau tend to suggest the evolution of design into a discipline that is not only able to design objects, but also educate society to identify creative solutions that can have an impact on the future development of consumption, on the society and on the evolution of the world at large.

The aim of the M.C.N., whose programme reads "It's not about the world of design. It's about design of the world", is to investigate and implement the potential of design in improving the wellbeing of humanity. Design is able to lead towards new economic perspectives, where a crucial role is played by the human and relational capital. We are living in the age of "cognitive surplus", where design, viewed as *an emerging, vital force, able to collect a de-localised, fragmented knowledge and aggregate it into something big and new* (Shirky 2010), has the opportunity to catch and exploit the new connection potential, and to devise new models for innovation through complex, diffuse actions.

A design project aims to construct creative ecosystems and, not only does it *investigate our global abilities, it also develops an informed outlook on our limitations (…) reflecting on the utopian and dystopian capacities of the emerging world, where even nature is no longer safe from our manipulation capacity* (Mau 2012*)*.

By now design is able to affect and transform every aspect of everyday life – a potential of which the public is gradually becoming aware.

Several sectors are leaving behind the idea that design is a mere device linked to consumption practices and a "formal way" to construct marketing-driven, attractive objects. This interpretation, which limits design to the world of objects, has been overcome by an idea of design as a "style of thought" rather than as a mere tool to make objects more attractive, developing usage modes that improve peoples' lives and design choices connected to marketing strategies.

In this line of thought Tim Brown describes the diffuse action of design through the *Design Thinking* method, which draws on Roger Martin's theory of "integrative thinking", characterised by the ability to exploit "opposing ideas" and "opposing limits" to devise new solutions able to balance attractiveness with people's actual needs, and technical feasibility with economic value.

Based on the approach of Design Thinking, the present research develops a methodology to devise design processes able to generate innovation, identifying

specific stages in which to experiment with a model of open, equal listening and to use specific tools.
The collaboration between the IDEAS Department of the Second University of Naples and the enterprises operating in Campania in the knowledge-intensive fashion- and design-oriented sectors, is the environment in which to experiment with innovation-led design processes. Based on these premises the *IXDI – Ideology for design and innovation Lab* set up by the IDEAS Department with API – Association of SMEs in the province of Naples, experiments with a Listening Design creative model aiming at supporting, exchanging and promoting shared innovation processes. The Lab's specific goal is the construction of an ecosystem attracting different competences to develop projects in collaboration with the enterprises, which are involved in defining the "demand for innovation" that is at the source of the whole design process. The crucial element generating the need to implement the method consists in contrasting the deep-rooted resistance of enterprises and the market to invest in innovation-intensive projects.

Creative and methodological approaches to guide innovation processes

Numerous works in the literature describe methodologies aiming at organising the design and process stages involved in generating innovation. These include the *Design Thinking* approach – the methodology that has generated most of the often contrasting reflections on the role of design in innovation processes.

The *Design Thinking* approach is based on a social creative process that can generate a diffuse participation in the design process by using individual abilities to construct new visions interpreting the social and economic transformations of contemporary society and to enable enterprises to introduce process and product innovations.
Design Thinking views design as a strategic tool for change. Its purpose is to solve different problems, such as the analysis of climate change, the setting out of new norms for education, the management of public health or safety - applications which provide a new context for design, providing it with an ethical and social role that extends its field of action from commodities to behaviours.
As well as the creative process, the present research analyses the role of the designer, who can bring together social, economic and productive aspects in setting up innovation processes, and the role of users, who contribute to the project with their own competencies. The main drive for the creative process is a view of the person as a subject able to bring together technology and economy and to produce innovation.
There is no general agreement over the effectiveness of the method. There are no doubts, however, about the crucial role the *Design Thinking* approach plays in spreading certain research areas of design, like humanistic and social design, where the subjects involved in the creative process are able to bring to the surface a demand for innovation and to take part in the creative process as a group related to a specific need of change.
Helen Walter, innovation and design manager of the Bloomberg Business Week until 2010, claims that *Design Thinking* is a fundamental tool for the creative industries where relational and communication dynamics make the sharing of complex, diverse knowledge more effective.
Conversely, while recognising the role of the *Design Thinking* approach in the development of innovation dynamics, Bruce Nussbaum believes that the method has

not brought about any real change in the shift from creative theory to the application stage in industrial processes. *"But in order to appeal to the business culture of process, it was denuded of the mess, the conflict, failure, emotions, and looping circularity that is part and parcel of the creative process."* (Nussbaum, B. 2011).

The importance of sharing know-how is recognised, however, in a design area where the interaction between different disciplines generates innovative solutions to meet the demand of consumers, who are more and more actively involved in the creative process. The interaction thus produces a social phenomenon based on the spreading of individual abilities by their sharing with the community, which generates what is described as Creative Intelligence or CQ (Nussbaum, B. 2011).

> I am defining Creative Intelligence as the ability to frame problems in new ways and to make original solutions. You can have a low or high ability to frame and solve problems, but these two capacities are key and they can be learned. I place CQ within the intellectual space of gaming, scenario planning, systems thinking and, of course, design thinking. It is a sociological approach in which creativity emerges from group activity, not a psychological approach of development stages and individual genius" (Nussbaum, B. 2011).

With regard to these aspects, it is useful to analyse the potential created by the sharing of knowledge that develops in collaborative communities, where the user plays a key role in generating innovation: user-to-user cooperation and user-to-communities interaction take place thanks to open source software that is accessible to all users. Von Hippel highlights the existence of numerous communities of innovation of lead users, in which selective access makes it possible to analyse the users' specific needs and outline scenarios for the creation of new products.

Unlike Eric Von Hippel's theory of Open Innovation, which analyses the user's creative participation modes imagining a virtual space where to find needs, insights and ideas, Tim Brown devises a creative methodology through which individuals can take part in the creative process and use their own capacities even when designers are not involved. This method, which apparently excludes design from creative processes, in fact strengthens the discipline if it is meant as a science whose purpose is to organise and improve the creative activities of individuals. The primary aim of design actions is not consumption, but exploring the participatory potential of the community, who view *human needs as the starting point, the prototype and vehicle for progress* (Brown 2009). With respect to this, there are several experiences concerning "creative communities", "production collectivism" and "associations of interest" for generative exchange, design experiments to solve social problems, which have turned collaboration into an art or a job requiring people's ability to comprehend and respond to the others emotionally in order to act together (Sennet 2012).

The interaction between creative communities and real needs, between people and objects, makes it possible to transform a passive activity – between product and consumer – into a collaboration between and among several subjects, a meaningful, productive experience leading to common, shared results. The relationship between an object and a person is brought forward, as it also includes the design and manufacturing stages of a commodity, thus extending its experienced lifecycle and increasing its affective value.

The evolution of design-oriented methodologies investigating design and creativity clearly shows that the design process to follow has changed dramatically, while the steps needed to develop innovation processes have become more complex and of an

indefinite number, and are not consequential. Therefore they are considered as a set of creative possibilities rather than a pre-set sequence of stages.
Three macro areas can be identified that investigate ways to achieve innovation processes, namely the methodologies aiming at developing *creative processes*, *design processes* and *optimisation processes*.

The first macro area, *creative processes*, refers to those methods describing the process by which to give life to an idea, e.g. E. De Bono's theory on "lateral thinking"1.

The second macro area, *design processes*, concerns design-driven innovations, which entail not only the realisation of an idea, but also experimenting and prototyping to achieve the end product, according to the methodology described in B. Munari's text "Da cosa nasce cosa"2.
Finally, the third macro area, *optimisation processes*, regards the methodologies aiming at solving particular design and process problems that tend to analyse specific stages in a company's development with a view to optimising its results. One example is the Life Cycle Assessment method assesses the environmental and potential effects of a product, a process or activity by analysing the life cycle and functional units making up the material or immaterial product.
These three areas, which over their development have taken different – sometimes parallel, cross-cutting or overlapping – ways, are currently hybridised by means of methodologies that bring together creative elements and technical data, and that are supported by accessible, complex tools able to spread "production collectivism". These methods merging creativity, design and innovation are defined as tools for *design-oriented innovation*.

Creativity is a crucial feature of design and innovation, and is meant as an aptitude for the creative organisation of thinking and *the ability to see new, original contexts which are difficult to infer through logics alone* (Pfenninger, Skubik 2001), and can hardly be entrapped in static methodologies envisaging univocal solutions to problems.
Today the awareness has been reached that methodologies are able to extend the perimeter around a problem (Brown 2009) by analysing several elements that increase the possibilities of finding innovative solutions. This awareness is in line with J.P. Guilford's theory of "divergent thinking" as the ability to produce a range of possible solutions to a given problem, namely for a problem that does not envisage one correct answer only. What changes in trying to obtain multiple interpretations is not the design method, but the competencies involved; *instead of solving the problem on one's own, in the case of a large project it will be necessary to increase the number of experts and*

[1] The theory of "lateral thinking", born out of the merging of three research areas (thinking, creative thinking and self-organised systems) within cognitive sciences, describes a non-linear, non-sequential and non-logical type of thinking opposed to "vertical thinking" which is characterised by a sequential, ordered trend instead. The Oxford English Dictionary describes it as follows: << the solving of problems by an indirect and creative approach, typically through viewing the problem in a new and unusual light >>. Through lateral thinking E. De Bono highlights the need to look for different approaches and a different way to look at things through a lateral gaze which may distort the conditions of reality in a creative way.

[2] Bruno Munari claims that "designing is easy when you know how to do it. Everything becomes easy when you know how to proceed to reach the solution of a problem". Starting from this idea he develops a methodology that deals with all the stages within a canonical design-driven project. In particular, B. Munari compares the development of a project to the preparation of a dish – green rice – observing that to create a good dish it is necessary to follow the recipe carefully. In design the recipe is the method, which starts from a definition of the "problem" and ends with its solution.

collaborators as well as to adapt the method to the new situation (Munari 1996). It's not surprising that the idea of "hybridisation of knowledge" is spreading within innovation design, based on the merging of multiple competencies collaborating in a multidisciplinary environment to identify innovative opportunities for businesses.
In order to produce innovation in the context of design disciplines it is of the utmost importance to identify professionals, institutions and companies willing to exchange competences, experimenting with new production systems in which each and every actor acts as a "fertiliser" of knowledge, sharing his or her expertise with all the members of the network. Such "fertilisation", viewed as the set of practices making it possible to increase productivity among several subjects, increases the awareness of the subjects involved in the system while multiplying the opportunities to create "diffuse" innovative projects, that is to say projects resulting from the combination of several production capacities. The spreading of competences and needs across a research group triggers a process of mutual growth leading to the creation of "total projects", which are generated and shared by all the members.

This scientific approach reflects Rullani's idea of innovation, which he describes in the text "*Innovare*": the progress producing innovation can only be achieved by spreading the spectrum of intelligence to the many cognitive subjects, belonging to different places and cultures, which contribute to creating proto-innovations on which innovations with latent qualities are constructed. This consideration encourages businesses to focus on a "knowledge-based economy" and to invest mainly in the relational and intellectual capital of the subjects involved in the design and production stages.

Listening design methodology

A creative and innovative design approach

Listening Design is an open, equal design methodology aiming at leading enterprises towards expressing the demand for innovation. Recent research in the field of design shows that innovation does no longer originate from individual subjects but from "dialogic collaborations" (Sennett, R. 2012) based on the ability to bring together several competences. The aim of the methodology is to set up a creative ecosystem including designers, researchers, companies, users and local resources in order to connect competences which may, together, produce innovation.

The practices and tools of Listening Design include 'collective' and 'connective' intelligence in all the stages of the innovation process to guarantee a rich and complex interaction.
Listening Design starts from the *Design Thinking* approach and identifies a variety of actions to implement open, careful and analytical practices.
This makes up the conditions to take the creative, productive and economic opportunities offered by the local ecosystems.
In order to involve a greater number of people around a piece of innovation the project must be transformed into an effective message. Telling a story is the most successful way to catch people's attention. To increase its effectiveness, this activity of storytelling – a consolidated practice of development in the *Design Thinking* approach – must adopt the technique of "dialogic exchange" introduced by Sennet, who stresses not only the importance of technique and of the gift of synthesis needed by someone who delivers a speech, but also the equally important skill of the listeners to "follow and

interpret in detail what the others say before responding, understanding the speaker's gestures and silent pauses alongside statements"(Sennet 2012, p. 25.). Silence sometimes hides undeclared intentions, which are not explicitly stated by the speaker: in this case a good listener – says Theodore Zeldin – can identify a common ground in what the speaker assumes rather than in what he or she actually says (Zeldin 1998, p. 87). This is the "dialogical principle" introduced by Michail Bachtin with reference to a type of communication that is not resolved in finding a common ground but in triggering a research process that introduces new discourses to be shared. Even more than generate invention and novelty, to innovate means being able to read, catch and bring to light competences.

There is a need to create a new model using the principle of empathy meant as the "ability to understand" (Mead, G.H. 1934) the other in an open, collaborative way, spreading culture and knowledge. "Empathy is the social glue that allows increasingly individualized and diverse populations to forge bonds of solidarity across broader domains so that society can cohere as a whole" (Rifkin, J. 2010).

To spread empathy it is necessary to listen carefully and to catch all the signals this listening provides us with. The next real innovation will lie in the ability of each and every one of us to listen and to collaborate "together".

Stages of the methodology

The Listening Design methodology is structured along different stages Open listening, Cross Research and Open Concept. Open listening is the listening stage, with specific actions and tools, and is the central element of the methodology.

It is crucial to identify the creative ecosystem which generates a framework of relations contributing to defining the information needed to construct the area in which the demand for innovation is shaped.

The main actors in the creative ecosystem are the researchers, designers and companies that are constantly involved in the innovation process, in which they play an active role; users, instead, only collaborate in a more random manner contributing their competences, aptitudes and interests to the project evolution. The approach is based on the participants' skills, which make up the immaterial creative tools. The system of tools includes both individual and collective creative skills as well as connections between "connective" and "collective" intelligences. Once the ecosystem has been set up and the instruments have been identified, the research group arranges workshops in which to host interactions and exchange of knowledge and expertise. The exchange between the subjects involved in the process is documented by short notes making up the Posting stage. These notes are supported by audiovisual materials that record the contents simplifying the traditional activity of reporting, with the aim of enhancing mutual understanding between and among all the members of the research group. The products resulting from the Posting stage are taken to the following analysis stage – Sharing and Fixing, which selects, mixes and re-generates data by means of the *Open Method of Coordination* approach.

The *Method of Coordination* aims at promoting mutual learning with the largest involvement of actors possible, and at giving fresh energy to an approach oriented to sharing common challenges. The activities focus on cross-cutting issues, establishing a horizontal coordination through inter-group meetings for an integration of competencies. The aims of the meetings are the following: promoting cohesion between and among actors, equality between sectors and specific competences and

equal opportunities for all through appropriate, accessible, adaptable and efficient systems of involvement in the creative process.

During the Sharing and Fixing stage evaluation criteria are devised to calculate the degree of effectiveness and efficacy of the meetings. These criteria aim at evaluating the impact of the themes discussed in the workshop meetings and, consequently, at defining their innovation potential. After being shared with all the research group members, these results contribute to the production of Listening Prototypes coming in the form of documents, maps, drawings and 3D prototypes, which are made available to the users for any additions.

The Open Listening methodology views the designer as an informed, careful and creative listener, who processes the assumptions described by the speaker and makes them explicit in new design visions, developing innovation.

The following stage of the creative process – Cross Research – brings together the scientific competences of different disciplines with those of the users, generating advanced visions which define the environment in which to develop the innovation process. The disciplines involved, such as design, technology, marketing and sociology, are fundamental to build the scenario. More disciplines are added to these depending on the type of project being developed. The contributions produced at this stage are collected in a document called Vision prototype, to be shared with the whole group so that everyone may be informed about the scenario in which the product of innovation will be integrated. The last stage aiming at the development of the concepts, Open Concept, is based on the principles of co-design with the users. After defining a number of Concepts, the group of designers, together with the firm, moves on to produce a synthesis of the proposals to reach a single solution in which to invest all the resources of the creative ecosystem. Unlike other methods, Listening Design does not use the fuzzy component in the first part of the process alone; on the contrary, it extends it to the whole process, stressing the importance of unexpected elements called "Noise" factors. In scientific and theoretic language Noise is defined as a perturbation of the normal trend of a phenomenon (Treccani.it) that produces unexpected effects.

All the stages of the methodology can be adapted to the changes generated by the *interfering factor*, "Noise", meant as un unexpected element that is able to affect the project's development. These variables act in an environment which is sensitive to intuition, called White Room, which is guided by the creativity generating variations within the Listening Design methodology. Figure 1 and 2.

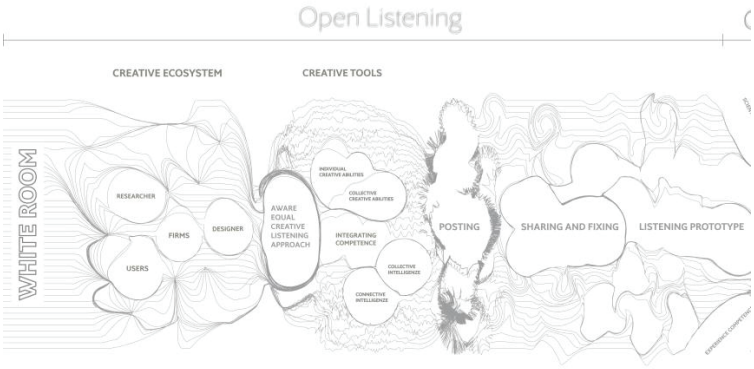

***Figure 1**. Listening Design Map: open listening, first phase of the methods.*

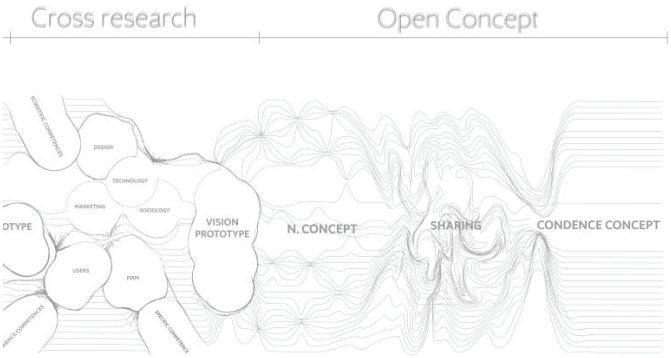

Figure 2. Listening Design Map: cross research and open concept, second and third phase of the methods.

Conclusion

The research explores new ways for the construction of a creative and innovative methodology with the aim of leading enterprises towards defining the demand for innovation and generating constant innovation processes through an open and equal listening process between the various actors involved.

The IDEAS Department of the Second University of Naples experiments with the methodology by developing innovation-led design processes with the aim of promoting the excellences of Campania and spread best practices in design-oriented production and design.

The testing of the model was started in collaboration with the API Association of Naples, that manages the network of local enterprises: they contributed to shaping the creative ecosystem by selecting companies in the agrifood, pottery, yacht design, fashion and product design sectors on the basis of qualitative criteria.

The activity resulted in the increase and empowering of the system's intelligence through a transfer of the idea of participation to the companies operating locally, which make up the texture of competences through which to test innovation products.

Acknowledgements: *Thanks to Research Team. Research activities realized with the "Research Design Courses" are coordinated by Patrizia Ranzo. Research group: R. Veneziano, G. Scalera, M. Rossi, students of the Research Design Course - Design and Innovation degree, 2010\2011, Second University of Naples.*

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