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Evolutionary design - a proposal for the conceptual model

MAIN RESEARCH LINE	CROSS RESEARCH LINES	PROJECT STARTING DATE	PROJECT CONCLUSION DATE
Design	Design Thinking / Evolutionary Design	2013	2016

This project is a looking for the next step in the Design Thinking methods and how can be developed a new model that lay on a constant evolution and evolving change. Thus is made an observation on evolutionary theories present along the time in methodologies approach from different disciplines and circles, and how Darwin's theory of the evolution of species is their origin. After this historical analyses was intended to understand the next step for the creativity process and how Evolutionary Design can be the path to the future. Therefore there was a need to look to the evolution of processes over time in six scientific areas, in order to delineate the next steps in the theories of Evolutionary Design. In the end was design the first proposal for a conceptual model that interconnects design, technology, science and systems.

In this project an open research was made in different knowledge fields aiming to understand the Evolutionary Theories and how and if there are applied to the field. (fig.1) To have a scientific perspective that is a need to research about the Darwin's natural selection of species and Dawkins's evolution by meme. Darwin knew that for some winning characteristics pass through generations it would have to passed on through the medium of a something. In the 1930s, "biology achieved a synthesis of the ideas of Darwin with the ideas of genetics and the mutation of genes to produce neo-Darwinism." (Langrish, 2005) Thinking the evolution in design is thinking the evolution of ideas and as Langrish mention "the Darwinian evolution of ideas is called "memetics" that had is origin in the "concept of self-replicating ideas called memes" disseminated by Richard Dawkins. Tim Brown, denotes the evolution is dependent of interaction and for that, design needs a system that lays principles and guidelines for the intelligence development of evolutionary

systems where we can develop algorithms that allow us to selectively improve the design of a product, service or system. The biologic system has been earning in the way it handle with the complexity and adaptive through evolution, in response to this the humans connected the qualities of Evolutionary biology and of Computer science to generate what is call as Evolutionary

computation. (Bentley, 1999) For Artemis Yagou the History of Design ought to be the reflexion of an interaction with the other, for her good design doesn't mean an "ideal form" but the ones that have "evolved through adaptation processes within particular social, economic, and technological contexts."(Yagou, 2005) Designers should get closer to different scientific approach-

es to make the right question and draw better hypotheses, actual experiences and share learning. To discovering unmet needs the designer has to be a researcher in anthropology, ethnography, or psychology, combined with analyse of real-time data through technology to uncover how individuals and groups really think and act is an essential part of innovation.(Fig. 2)

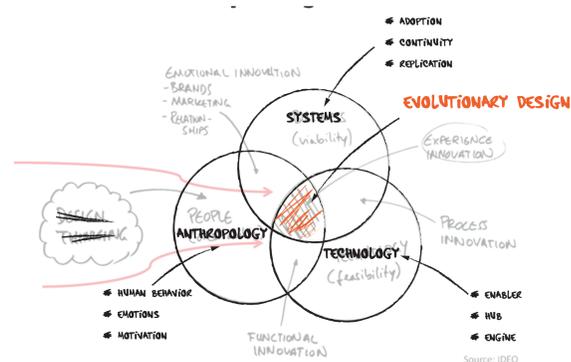


Figure 1 First approach made in this project to the method to achieve a new model that goes from Seign Thinking to Evolutionary Design.

RESULTS (OBTAINED OR EXPECTED)

- First proposal for an Evolutionary Conceptual Model based in the research through the evolution of processes in the scientific areas of Design, Computer Science, Biology, Social Sciences and Humanities, Design History and Business and Management. In the proposed model can be perceived three layers that exemplify the purpose to research the evolution over time of each of the six scientific areas. With this observation is suggested a triangulation and interconnection of information and data,

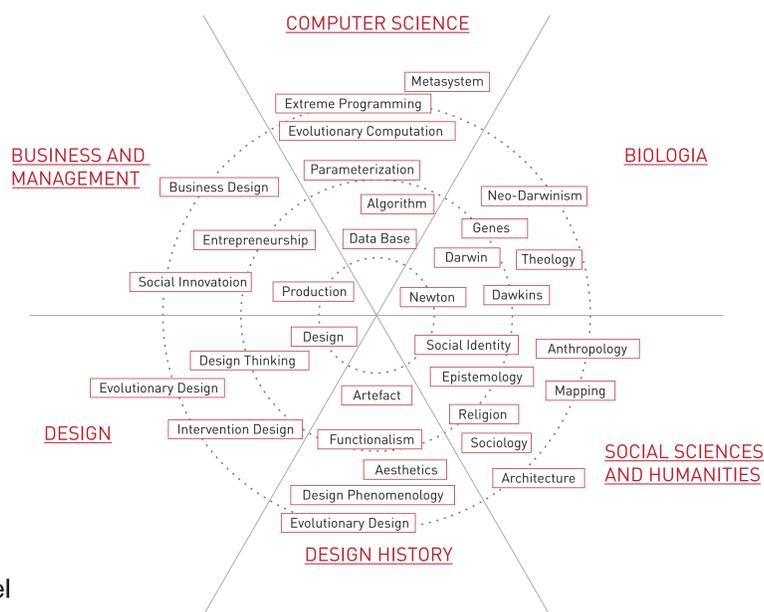


Figure 2 First proposal for an Evolutionary Conceptual Model

- to realize the influence between different scientific fields in the innovation process.
- What will be the result: An application in design practice? A platform based on an algorithm? Or a participatory or networked format? For that it is a need to make a verification in the field