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Design 2030: Practice

Design has been recognized as a discipline of doing. Its practical dimension has always exceeded the theoretical one, and the second has always placed the first at the centre. If this assumed a connotation of certainty in the context of the 20th century, today, in the contemporary world, is the Design dimension of
doing still valid? How the applied dimension of this knowledge has to be expressed? Can the "profession" of the designer specialized in product categories still valid? What space will it occupy between the professions of the future? What should be its relationship with production and consumption systems?
The issue 72 of **diid** opens up to those applied experiments where Design, within the laboratories and in the places of production, is outlining a different nature and prefigures a new role in and for society.

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Focus

Designer Pollinator: a case study

Being aware of direct aftereffects of human activities on the entire ecosystem is one of the main phenomena characterising modern times. Research is looking for methodologies and frameworks that, in parallel with many other themes, could enable industrial companies towards a radical shift in current production systems assets and resources management techniques. However, industrial companies usually show huge recalcitrance in adopting innovations, preferring already known procedures. Designers, instead, are intrinsically familiar with iterative way of working and they naturally look for promoting innovation, taking inspiration by emerging of different kind of novelties. Therefore, designer could represent a key-figure in the transitional process towards new economies adoption. In this article, authors propose a case study where, through design typical tools, the workflow of an existing industrial company has been mapped in order to promoting new working assets. Material selection process has been the reference activity for the entire analysis: being a key decisional process in product design, it allowed researchers to enlighten possible interferences between several departments. The interconnection and overlapping of several processes into the company defines a very intricate environment in which a single variation in the workflow can have consequences over the whole system. It follows that it is fundamental to identify specific moment to introduce novelties without compromising the industrial system equilibrium. Authors here propose a vision where the designer, thanks to the adductive way of thinking, competencies as facilitator and the ability of synthesising complex systems into visual outputs, can be receptor and promoter of potentially radical innovations at a systemic level into industrial companies.

[case study, designer pollinator,
transition management, sustainable development]

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Introduction

The birth of design as a discipline is usually located in industrial revolution age (Vitta, 2001). In early '900, the concept of "design" was generally associated with "design of everyday objects" (Pevsner, 1936); between first and second post-war period, design was defined as "synthesis" of scientific and technological progresses into real products. Nowadays, instead, design has not an unique definition: it is a discipline showing several shades of meaning, so that in last years design methodologies have been integrated in decisional and innovation management processes.

Today it is difficult to uniquely define design, probably because of the changeability with whom, the discipline itself evolves in parallel with its cultural context. In a recent article, professor Kees Dorst (2019) enlightens how design evolved from artisanal practice to academic discipline, by continuously reinventing itself. This phenomenon is easily seen in the birth of several sub-disciplines very different in object of interest (from product to communication, from services to UX experiences, from management to systems (Koskinen & Dorst, 2015)), but all contributing to the making of design discipline.

Constantly contemporary nature of design makes its "definition" elusive and difficult to express in a unique way: "trapping" design in a well established axiom could affect directly the design changeability dimension.

Being expression and synthesis not only of technological advancement but of most important cultural changes of each epoch, design is constantly evolving, so to preview possible future evolution of this discipline it is important to analyse the current context in which design is operating.

Context: the Anthropocene

What actually characterises our contemporaneity is the concept of the Anthropocene (Crutzen & Stoermer, 2000). Being aware on how human activity has significantly altered the planetary equilibrium is bringing attention upon a profound reflection on the human positioning in the whole Natural ecosystem.

It follows, that a review of current reasoning paths is nowadays mandatory to promote new ways of thinking and acting, in order to change human behaviour in radical way. This theme guided several contemporary sociologists, anthropologists and philosophers towards the debate on how to overcome the "white-man-western-centric" reasoning (Morton,2016; Braidotti, 2013; Latour, 2017).

From a socio-economical point of view, several economical models have been theorized to guide production processes towards new, sustainable practices: neglecting the pure run for richness, those new economic approaches focus on creating autopoietic systems endeavors. This is the case of economic models such as the "Green Economy", "Blue Economy (Pauli, 2010) and the most recent "Circular Economy" model (Ellen MacArthur Foundation, 2015).

Those models all adopt a systemic vision, with (at least on theory) missions oriented towards a sustainable future for both humans and Earth in its totality.

It follows that also design and the role of the designer in this context needs to be reviewed. Looking at the histroy of design for enviromental sustainability (Ceschin & Gaziulusoy, 2016) we can notice that initially this discipline was pretty much focused on the product, while nowadays its dimension is comparable to systemic and managerial disciplines and the designer himself is seen as a true innovator in both industrial and social contexts (Valtonen, 2005).

This concept is also adopted by most recent design disciplines, as Design for Transition (Irwin, 2015; Irwin, Kossoff, Tonkinwise, & Scupelli, 2015), where the designer is seen as promoter of radical changes, maintaining a holistic and systemic perspective.

Designer's role

Based on previous preface, it is easy to imagine the future of designer as a professional assuming complex and tangled roles, where a creative approach is essential. Thanks to his own training, affected by iterative mode of working, contemporary designer is able to reason in divergent, flexible ways (Minder & Heidemann Lassen, 2018).

Into academic contexts, it is well shared the opinion that younger designers feel the necessity to cooperate with experts from very different disciplines, asking for multidisciplinary, cooperative environment (Bowen, Durrant, Nissen, Bowers, & Wright, 2016; Camere & Karana, 2018).

In industrial companies environment, where multidisciplinary and complex relationships are typical, designer could play a key role for being catalyst and promoter of new working models, being a key figure for managing information between company's departments.

The creative approach to problem definition and solution finding, if transferred from ideation process to a logistical one, could enable substantial changes at organizational working level that can be easily understood from every member of the same company.

The designer could be the perfect manager for radical changes, thanks to the creative approach to problem solving activities; adductive reasoning (Kolko, 2010); problem-framing ability (Dorst, 2011) and ability to share information that can also be used by users with different backgrounds (eg maps, graphic visualizations) (Jones & Bowes, 2017).

Case study

To verify if designer, towards the use of their own methods and practices could promote radical changes at a systemic level in industrial contexts and ease the transition towards more sustainable production processes, authors will describe an experience carried on into an existing company.

The main objective of the presented work was to understand if typical designer tools could ease the transition towards new product development processes, and if those tools could implement cooperation between professionals with different background. For doing this, material selection process has been chosen as the main topic of observation.

At the beginning, material selection was pretty much managed by technicians because materials were strictly linked with "function" (Cornish, 1987), but during the years materials assumed a central role in product design process. Several attributes have been conferred to materials (Ashby & Johnson, 2007): from communication interface with the user (Del Curto, Fiorani, & Passaro, 2010) to core elements in contributing at aesthetic (Wilkes *et al.*, 2014), sensorial (Karana, Hekkert, & Kandachar, 2009), intangible (Van Kesteren, Stappers, & de Bruijn, 2007) and ethical (Bahrudin, Aurisicchio, & Baxter, 2017) characterization of the final product.

In an organic and systemic context as the industrial one, the material selection task, as well as other tasks (O' Connor, 2001; Prendeville, O'Connor, & Palmer, 2014) is affected by specific product requirements but also by organizational and managerial needs. Therefore, even a process as the one of material selection becomes a multidisciplinary task, involving several professional figures. In this case study authors propose a methodology for identifying a scenario where material selection is no more a single-person-referring task but it becomes a cooperative one, thanks to design proper tools.

In the proposed work, authors also analyzed the figure of designer as central role in transitional processes towards production processes more oriented to sustainable development objectives.

Methodology

Through the collaboration with Faber S.p.A. company, authors have enlightened information flux concerning material selection task, across the whole ideation and production process of a new product. To define a clear picture of how material selection is currently approached by the company, a mixed method approach has been applied to the research.

Phenomenological research: Observations and Non-Structured interviews

In order to identify precise workflow and how material selection task is embedded in it, was necessary to start an in-depth analysis of the industrial context.

A qualitative analysis of the research partner company Faber S.p.A has been prepared in the form of observations and non-structured interviews, to figure out how material selection is currently managed by the employees.

Being physically into the company allowed researchers to collect information through observations and unstructured interviews. People asked to describe the material selection process into the company were experts in different domains (marketing, R&D, industrialization and supply chain), selected among others for their strategic role into the company in order to investigate the net of relationships between departments.

Quantitative research: surveys

To give a precise quantity to what emerged by the observations, a survey with precise questions has been submitted to the company. In this case, data collected by qualitative research have been quantified, systematized and synthesized also at quantitative level. With 30 responses by employees with minimum 5 years experience into the company it has been possible to identify who actually is in charge to research and promote the introduction of new materials into the production process, why and how often this activity is carried on. With this methodology, it has been possible to verify not only that material selection is actually a multidisciplinary task but also to measure some levels of recalcitrance to innovation in complex systems as companies (Berna-Martinez & Macia-Perez, 2012).

Data triangulation

Data triangulation is a methodological approach (Given, 2008) that helps in correlating data collected with different methodologies (e.g. qualitative and quantitative data). From data collected as previously mentioned, triangulation enlightened three main research topics:

- In referring industrial context it is necessary to understand better how the material selection should be managed by different departments;
- It is necessary to understand how information of different nature should be shared into multidisciplinary workflow;
- It could be necessary to intervene with new data collection and new modalities for sharing information between departments.

Participatory action research

"Participatory action research is […] a methodology that attempts to break down power relationships between the researcher and the researched by letting the stakeholders define the problem and work toward solutions (Given, 2008)".

The focus of this methodology is to conduct esearch by, for and with the people who will take benefits for the research output itself (Bilandzic & Venable, 2011; Jones, 2018). It is a methodology flexible uniquely suited to researching and supporting change (Given, 2008).

In this perspective, a workshop into the referring company has been planned and researchers have been able to depict properly the internal workflow in collaboration with employees. The activity aim was to identify specific moments in the workflow where, through direct collaboration between departments, professionals were enabled to empower their communication and information transfer. In the same way, it has been possible to find specific moments in which the research on innovative materials could be introduced in the working routine.

To manage those activities in a strict time span (one day workshop) it has been fundamental to deploy proper design tools such as:

- extensive maps;
- Data visualizations;
- User data-sheet;
- Online material libraries;
- Sharing platforms.

Those tools were essential to carry the workshop and to promote co-operation through colleagues and are very flexible to an easy updating activity, indulging company's needs.

Results

As mentioned previously, designer is a professional figure strongly dependent from its context of operation continuously evolving. The multifaceted nature of designers is extremely receptive and allows professionals to bring new values in several contexts, promoting new collaborative activities even between different experts thanks to its own tools (Bowen *et al.*, 2016).

Moreover, operating in contexts always more complex and interconnected, to be strongly influenced by contemporaneity allows designer to visualize entangled problems even at a systemic level (Jones, 2014).

In the same way of pollinators, designers can take nourishment from the environment and, through several methodologies and tools, bring them into professional context in a sharable language. In this way, designers are able to promote collaborative activities oriented to adopting innovations at different levels, becoming pioneer of innovative changes even for work methodologies.

To confirm this hypothesis, thanks to the experience in the industrial company, depending on the modalities and timing presented in this paper, authors can affirm that:

- visualization tools properly designed can stimulate discussion and debate through several professionals, generating healthy comparison moments and enabling exchange of information between different departments, focusing on employees needs and their work-modality;
- through mapping and cooperative tasks, it is possible to enlighten neural points in the workflow in which innovative practices could be slowly integrated, as a starting point for change even in recalcitrant environments;
- collective moments are highly receptive to implement research activities in the workflow: to plan cooperative activities finalized to promote research and to reflect upon integration of innovative materials as well as working modalities, could ease the transitional process to a more sustainable production.

In this context, the designer contribution is essential due to:

- the ability of synthesizing and visualizing information through graphical artworks allows all the employees to have a common ground as starting point for a change;
- the natural mutability of design practice implicitly influences designers in their "need to be constantly updated", so innovation promoted by designers will always be up-to-dated;

-   designer's attitude to be a facilitator in multidisciplinary contexts is a plus for easing transitional processes towards new work modalities.

The presented methodology is the result of a year-long research and new counter-proofs are needed for its validation. Authors suppose that through cyclical investigations and mapping activities it could be possible to monitor and to identify neural points of intervention for promoting or integrating new practices in the workflow, looking for a transition towards fast-refreshing work modalities. The hypothesis is that, even for complex and entangled contexts, designer could promote an agile adaptation to incoming necessities, as the current one that is demanding a fast conversion of industries towards more sustainable production.

In this process, designer could play a central role.

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