

DESIGN FOR DESIGNING: ENVISIONING AN INNOVATION & CREATIVITY CENTER FOR THE EMERGENCE OF THE NATIONAL DESIGN COMPETENCE

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Abstract

This work reports the case study of the preliminary efforts and consequent conceptualization of an innovation & creativity center. Specifically, this work focuses its intervention within a country of the Caucasian region, where strengthening non-oil-centered entrepreneurship was defined as a priority by the government, and Design competence is considered one of the primary drivers of national investment. In this context, the cooperation between two international universities has allowed for creating the research and development space for studying a solution that could support local entrepreneurship through the integration of design skills in the territory. Since innovation & creativity centers often function as bridges between creative concepts and entrepreneurial outputs, this contribution reports the results of the research: the logic of functioning of the innovation & creativity center, its organizational model for enabling a design-driven reinforcement of local entrepreneurship and the first steps required to start creating a heterogeneous community of stakeholders willing to participate in the intent realization of the country.

Keywords: International cooperation, design competence, strengthening local entrepreneurship, innovation & creativity center, complex adaptive systems.

1 INTRODUCTION

Within the context of this case study, governmental strategies for the country's prosperity are currently encouraging new trajectories for economic growth. Since the local government envisioned a new competitive role for the local production system that relies on fostering entrepreneurship in the non-oil sector, the country is focusing on integrating novel capabilities for product and service development. Particularly, Design is perceived as a critical national competence to support new product development within an unexplored sector of production and consumption as the non-oil currently is.

Under this premise, the substantial injection of governmental resources allowed for several initiatives to start and put efforts into the strategic intent realization. Beyond national entrepreneurial actions, a significant international partnership between a local and an Italian university is ambitiously committed to impacting the local entrepreneurial system with Design-driven growth on the large scale and long term. Among the challenging agenda initiatives, partners are focusing on the creation of a leading Design entity that could provide large-scale engagement of the local production and consumption system and sustainable outputs development and implementation.

From this perspective, envisioning a Design entity to build Design capacity represents the main strategy for supporting the intent realization. However, real success will derive from the integration of Design capacity building and a systemic approach [1], as the wide context of intervention for long-term change and impact requires characteristics of system adaptability to be taken into consideration [2]. Therefore, this contribution shows the preliminary conceptualization of an innovation & creativity center for a large-scale and long-term change and impact by integrating Metadesign and Complex Adaptive Systems (CAS) principles and related practices (i.e., infrastructuring and entrepreneurial ecosystems emergence).

Specifically, this work focuses on the design of the organizational configuration of the innovation and creativity center that could reflect characteristics at the intersection between Metadesign and CAS.

1.1 Emergence for infrastructuring the national design competence

The systemic context of this research and the lack of a Design infrastructure as a support for new products and services development in the country require the consideration of complexity science, particularly the theory of CAS, to provide a basic understanding of systems dynamics and consequent requirements for change. While infrastructures are defined as CAS of interacting and co-evolving agents

toward a common purpose [3], this research focuses on the preliminary process of emergence and related forces as enablers for the Design infrastructure to exist. Within the entrepreneurship field, emergence is a process that generates an emergent outcome [4], or the tangible expression of what has been created, whether an organization, a new system/innovation, a collaboration, or shared value. Therefore, in the specific context of this research, enabling the Design infrastructure in the country means focusing on emergence forces to generate an emergent outcome that allows for local entrepreneurial agents to interact and co-evolve through new product development.

1.1.1 *Linking Design and CAS*

Emergence forces of CAS in entrepreneurship are defined by Roundy et al. [2] as the followings:

- 1 the intentionality of entrepreneurs
- 2 the coherence of entrepreneurial activities
- 3 the injection of resources

While the latter reflects the availability of funds provided by the government and the presence of local entrepreneurial actors, intentionality and coherence refer respectively to the tendency of entrepreneurs toward a goal and their aggregation in similar behaviors and activities. Therefore, the emergence of the Design infrastructure in the country strictly depends on local entrepreneurs willing to collaborate in the realization of a common purpose. In a favorable context where the country's government provides substantial funds to encourage the local entrepreneurial system in non-oil products and services development [5], Design can intervene as an organizational driver to build entrepreneurs' motivation and large-scale engagement through Design activity [6], [7]. New product development then becomes the "inquiry" [8] where Design through its skills, practices, and strategies can apply to build the country's Design competence. As a consequence, Design informed by emergence forces can enable the creation of the Design infrastructure in the country by opening up a solution space [9] where entrepreneurs can build Design capacity for long-term new products and services development.

2 **METHODOLOGY**

From preliminary research data, the strengthening of non-oil-centered entrepreneurship through Design in the country required overcoming two main challenges: creating a dialogue between the existent non-oil product development know-how, fragmented in numerous industrial clusters, and integrating design skills provided by a new local school of design. Therefore, if from one side the country is building the design capacity through educational intervention, from the other it requires a dedicated function that integrates educational outputs with the local entrepreneurial system for new product development.

In this context, the case study was driven by the main question: Which kind of organizational setting can enable the emergence of a Design infrastructure allowing for the sustainable growth of non-oil sector production in the country?

To open up a solution space where local entrepreneurs can create solutions for the sustainable economic growth of the country, this work aimed at configuring a leading Design-driven entity as the primary enabler for the national Design infrastructure to emerge. Particularly, the creation of the Design-driven entity aimed at:

- Connecting and engaging the local innovation system in long-term participation, development, and implementation of Design initiatives.
- Supporting the entrepreneurial system in the country to adapt to non-oil-oriented new product development through Design initiatives.

2.1 **Method and approach**

2.1.1 *Preliminary data collection*

Due to the international partnership leading this research, data for research development were collected through several inputs. First, it was fundamental to organize local, in-person meetings between international universities to collect information about the country's strategic intents and relevant economic and cultural phenomena. Then, online meetings and sensitive information sharing allowed for the collection of qualitative and quantitative data about the country's state of the art on Design territorial presence and educational skills provided by local universities plus detailed analyses of the local

production and consumption system dynamics. The collected information was then supported by a contextual literature review on Design and Entrepreneurship theories and practices in systemic contexts of innovation.

2.1.2 Theory as research driver

Designing a leading Design-driven entity enabling the emergence of the national Design infrastructure required researchers to adopt an organizational perspective due to the large-scale and long-term transformation envisioned. Therefore, the contextual literature review and researchers' expertise in Design for systemic interventions in entrepreneurial contexts drove the data interpretation and elaboration.

Collected data were interpreted by following an interdisciplinary approach between Design and CAS domains [10], [11]. Particularly, the Metadesign concept [1] and its applied approach of *infrastructuring* [6], [9], [12], [13] were informed by the Entrepreneurial Ecosystems concept [14] and related emergence forces and practices [2], [15], [16].

The interdisciplinarity of this research led to an integrated output that reflects Metadesign's practice of infrastructure informed by the entrepreneurial ecosystem concept and CAS principles (Fig. 1).

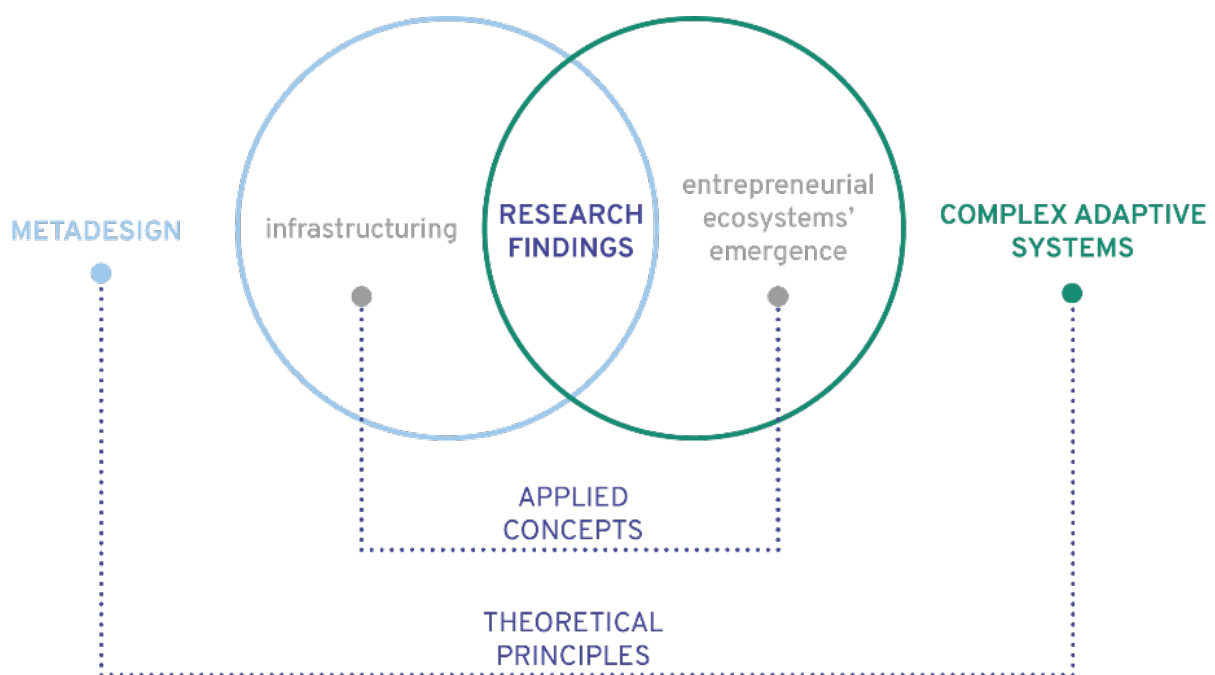


Figure 1. The interdisciplinary approach at the intersection between Metadesign and CAS

3 RESULTS

The tangible expression of interdisciplinary research efforts resulted in the organizational configuration of a Design-driven innovation center (DDIC). DDIC general purpose is to build the country's long-term Design competence through the large-scale engagement of the local entrepreneurial system in the development of new products and services. Particularly, DDIC is constituted of three main components, namely The School, The Department, and The Venturing, that establish the system's interfaces and the rules governing interactions among different parts. By striving for a specific and co-dependant goal, each component defines sub-components that fulfill determined functions through the performance of Design initiatives (Fig. 2).

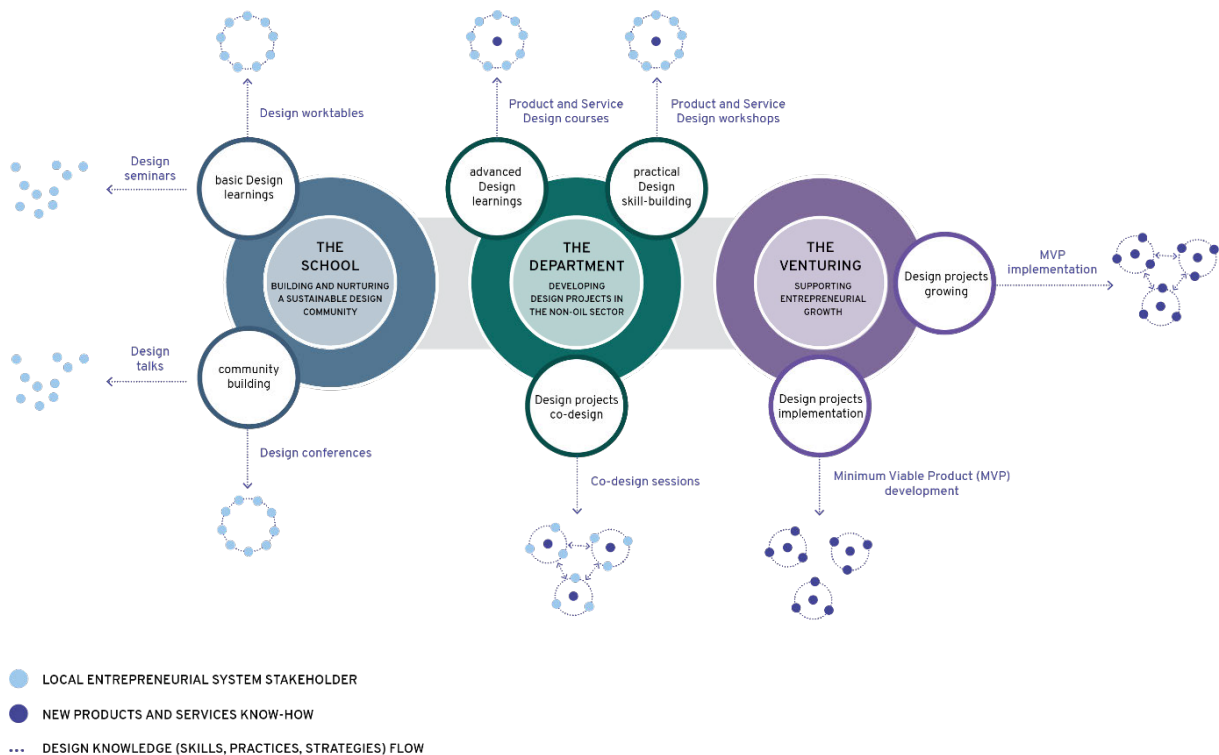


Figure 2. The organizational configuration of DDIC as a platform

The School represents the first touch-point for the local entrepreneurial system to enter the DDIC community. Stakeholders from every non-oil industry create here a space where heterogeneity can converge and participate in basic Design learning and networking. While building and nurturing a sustainable Design community, The School provides The Department with diverse resources that can there advance their knowledge in Product and Service Design through practical skill-building. Acquired resources will also contribute to co-designing new product and service projects that respond to national needs, thus continuously interacting with the local production and consumption system. Then, to grow the country's new product development capability in the non-oil sector, The Venturing has been envisioned as the component where Design projects and entrepreneurial perspectives intersect. By implementing Design projects resulting from The Department under a viable and feasible perspective, The Venturing sustains project development growth in local companies and organizations.

DDIC supports the emergence of the national Design infrastructure as it is dependent on a populated and strong community that interacts and collaborates as a continuum. Indeed, without interaction dynamics between people throughout the three main components and related sub-components, DDIC would provide siloed basic functions lacking heterogeneous knowledge nourishment to grow and impact the local external context. This peculiarity is reflected in DDIC platform-based architecture, which makes DDIC success as depending on network effect and interactions.

As a platform, DDIC relies on the aggregation of heterogeneous stakeholders in similar behaviors and activities due to the explicit purpose that all participants tend toward. Therefore, DDIC for the development of non-oil new products and services represents a supportive entity in the emergence of the national Design infrastructure. Particularly, DDIC takes advantage of financial resources provided by the local government to organize Design informative events and learnings to allow the local entrepreneurial system to identify, create, and respond to market opportunities, thus supporting the enhancement of stakeholders' intentionality in the realization of the country's strategic intents. While the local entrepreneurial system intends to participate in Design initiatives, practical Design skill-building engages diverse stakeholders in forming working groups that share the same intention in different non-oil industries of interest. This results in similar behaviors and activities (e.g., participating in Design initiatives) and interdependent goals (e.g., creating a Design community that benefits from non-oil sector products and services development) that make coherence in the local entrepreneurial system.

As a consequence, through interactions with one another, the actions of the local entrepreneurial system's stakeholders in DDIC will produce continuous modifications to the country's production and

consumption system, which shape how the system responds to endogenous and exogenous Design contingencies and allow it to adapt to changing and novel conditions.

4 CONCLUSIONS

Integrating the Design competence in the country required the design of a driving entity that satisfied a systemic level of engagement and long-term change due to the large-scale setting and the need for sustainable change [17]. Therefore, this research envisioned the organizational configuration of a Design-driven entity that could support the national strategy for growth through Design through a platform-based architecture [18]. Indeed, platforms can bring together different stakeholders, such as businesses, governments, and civil society, to work together toward a common goal [19]. Consequently, multi-stakeholder collaboration can lead to more sustainable practices and solutions [6].

Specifically, this research resulted in the design of the organizational configuration of a DDIC as innovation centers reflect platforms' characteristics. By serving as a hub for collaboration and exchange of ideas [20], DDIC brings together diverse stakeholders such as startups, established businesses, researchers, investors, and government agencies to create new solutions, products, and services in the non-oil sector by providing resources such as funding, mentorship, and training. Indeed, the configuration of the DDIC through its components enables large-scale engagement as it provides a space for different stakeholders to share knowledge and resources [2], and opportunities for networking and relationship-building [21]. Overall, DDIC can be considered a platform as it brings together diverse stakeholders to collaborate, share resources, and create new solutions.

While DDIC supports large-scale engagement through collaboration, it enables long-term change in the local entrepreneurial system through Design learning and practical skill-building. Yee and White [22] describe establishing a learning capability and practical skills respectively support the development of a mindset receptive to change and the ability to deploy tools for change. Therefore, Design intervenes in long-term capacity building as it is the protagonist of teaching and learning opportunities in DDIC in parallel with DDIC's business practices that guarantee design thinking and methods dissemination effectively throughout and outside the organization.

By proposing to ensure large-scale and long-term change through collaboration and capacity building as co-dependant factors for impact, DDIC represents an agile and adaptive Design entity able to deal with contextual adaptation contingencies [2]. These characteristics are essential in a complex context of intervention [12] for enabling the emergence of the National Design infrastructure as a strategic solution space for the country. Moreover, as the World is emerging from the pandemic, DDIC can be critical in driving the local entrepreneurial system to rapidly adapt to new market conditions and consumer demands.

This research developed the organizational configuration of a Design-driven innovation center in the country. By focusing on satisfying emergence forces of complex entrepreneurial systems for enabling the creation of the national Design infrastructure, this work resulted in a platform-based configuration for large-scale and long-term change. An interdisciplinary applied approach between Metadesign and CAS theory led to findings that enable emergence forces support for infrastructuring. Particularly, in the strategic context of the country, where the local government provides consistent resources for economic growth through Design competence integration, a platform-based configuration drawn on collaboration and capacity-building dynamics can enable the sustainable transformation and adaptation of the local entrepreneurial system when developing new products in the non-oil sector. Overall, this contribution intervenes in the initial steps of systems emergence for sustainable new product development thus participating in the discussion about how Design can enable large-scale and sustainable change.

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