

# Mapping Portugal's design landscape - findings, challenges and future research directions

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[doi.org/10.21606/iasdr.2023.314](https://doi.org/10.21606/iasdr.2023.314)

The closure of the Portuguese Design Center in 2013, left Portugal with no instruments of mediation between the Portuguese design ecosystem and the socio-economic fabric. DesignOBS (Towards a design observatory in Portugal) - a research project aiming to identify, map and interpret the Portuguese design landscape (2019-2022), aimed to tackle this issue via the development and application of a distributed and participatory observation approach, that integrated the knowledge of local nuclei, namely, design schools, about certain vectors of the national design ecosystem (design companies, education, research, professional designers, users). The use of information design as an approach to interpret and materialize data resulted in open datasets about design in Portugal, infographics, dynamic augmented reality visualizations with an info-object, national design meetings, and design exhibitions. Based on these results, this article reflects about the challenges and limitations of the project. Moreover, reflections about the continuation of this collective endeavor are being tackled, first, at the country level, to find potential mechanisms and organizational infrastructure that could lever continuous observation and representation of design in Portugal in the future; and second, at the European level, to reflect on alternative strategies and actors that can support these actions in countries with similar conditions as Portugal – that is, with no specific entities dedicated to systematic design observation/representation. We found the role of design schools can be pivotal for the formation of an alternative organizational structure for design observation.

**Keywords:** *design observation; design research; design education; participatory approach*

## 1 Introduction

Design is a key vector for innovation. Research studies undertaken worldwide demonstrate its potential to enrich socio-economic activities, with multiple large companies (e.g. Accenture, Deloitte, Google) acquiring design agencies to improve their products/services. The European Commission developed its Action Plan for design-driven innovation in 2013 (European Commission, 2013) and established its EU policy lab with design as a core competence in 2014. Design is also at the heart of the EU's New European Bauhaus Initiative (European Commission, 2020). During the last ten years,



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more than 15 design policies have been developed in Europe and Asia, including for example, Estonia, Denmark, Finland, Ireland, Latvia, Philippines, among others (Whicher, Swiatek, & Ward, 2018) – to develop a stronger design vision and operationalize that vision through concrete and targeted policy actions. These efforts are usually accompanied by data collection and analysis for the multiple vectors of the design ecosystem that can include information on design education and research, design companies, design users, promotion and support mechanisms, key actors and policies at local/national levels (Whicher et al., 2018). However, the application of this model also usually requires dedicated design infrastructures (e.g. design centers, design associations) as well as design-focused datasets, which are not always present. Different levels of maturation of design culture co-exist in Europe and still little guidance is offered to these countries (Costa et al., 2021a). The capability to make change; develop solutions and policies that can enable the betterment/transformation of existing systems, thus, requires additional data and information (KPGM, 2016).

A system of innovation for data-driven discussion about design

In the context of data, Kappor et al., (2015) emphasizes it is important to “provide mechanisms for engaging all interested stakeholders [...] in data-driven discussions, thereby creating an environment that will accelerate the identification of important problems that can be addressed” (Kapoor, Mojsilovi, Strattner, & Varshney, 2015). To unlock significant value from data thus requires not only making data more liquid, but also more accessible. To support innovation requires the combination of three types of system (Kappor et al., 2015): (1) system of records (which consist in cleaning, publishing, standardizing, filtering data); (2) system of insights (using methods/tools to support its interpretation); (3) systems of engagement (social and collaborative activities that support discussion amongst stakeholders about data). While many studies around data are still predominantly focused on increasing data availability, there are still efforts to be undertaken at the level of insights (usually undertaken by ecosystems of developers and hackers) and engagement (since discussions are often restricted to experts).

This framework has already been applied in other cases such as the Open4Citizens project. Morelli et al. (2017) developed a series of hackathons as well as an online platform to integrate data into the design activity, to develop concepts, interface prototypes and apps. While hackathons are a successful process that allows to go through all stages of the innovation workflow, an weekend-event, bringing together multiple stakeholders is not very scalable and does requires substantial investment (Concilio, Molinari, & Morelli, 2017; Morelli, Aguilar, et al., 2017; Morelli, Mulder, et al., 2017). Moreover, the role of design within this process focuses on facilitating participatory processes and social innovation (Morelli et al., 2017). However, by looking at design from a perspective of cultural mediation (Branco & Providência, 2018) – this role could be expanded, potentially going beyond problem-solving, and enabling more creative inquiry in the data interpretation context (Verganti, Dell’Era, & Swan, 2021; Verganti, Vendraminelli, & Iansiti, 2020). The proposal for this project derives from a unique context in which design in Portugal finds itself: with no institutional representation or policy making actors. There are currently no professional or governmental organisations that can aggregate a meaningful percentage of the already existing thousands of designers that have graduated in the last decades.

## **2 The DesignOBS research project**

Portuguese Design has lived the last decade (since the closure of the Portuguese Design Centre in 2013) without a political instrument that serves as an interface between the national design ecosystem and the socio-economic fabric. The lack of an effective systematic observation/representation approach is harmful for the discipline, lacks lobbying power next to local government, and representation in Europe as well. To address this challenge, the foundations for an observatory were developed by researchers from four national Higher Education Institutions. “Towards a Portuguese Design Observatory in Portugal” (DesignOBS) was a research project aiming to identify, map and interpret the Portuguese design landscape. It aimed to tackle the challenge of lack of infrastructure via the development and application of a distributed and participatory observation approach (Costa et al., 2020) that integrated the knowledge of local nuclei, namely, design schools, about the national design ecosystem – following a model already replicated and used at the European level (Whicher et al., 2018). Following this base structure, we had two options: to isolate specific points of the Portuguese design ecosystem and produce a more dense analysis of these fields; or, to do a 360° sweep, trying to identify some “life” in the various vectors of the ecosystem, although producing in some cases a more superficial analyses. As this was an inaugural mapping effort, we opted for the second option, aware of the limitations imposed by the scarce resources available to us.

In a first instance, based on existing data, a first portrayal of these vectors were built and used to raise awareness inside the community about the status quo of design data, which in turn, would leverage more coordinated initiatives/actions amongst schools and other stakeholders. Second, the school-driven network was used to support local observation and was also expected to provide continuous feed of design data, providing traceable material, increase ownership, responsibility of the representation of design per region, and to stimulate grassroots governance and self-organization (Costa et al., 2020). The application of this iterative participatory approach was complemented with the use of information design as an approach to interpret and materialize data about the discipline, experimenting multiple digital, printing and material techniques (Costa et al., 2023; Costa et al., 2021b; Costa et al., 2021c); and explore how this ecosystem can be mapped through the practice of design.

With the project at an end, it is necessary to reflect on the status quo as well as the future research steps to take advantage of this momentum. This article thus, focuses on two points specifically, which we believe can have an interest at the international level: (1) first, it discusses about the lessons learned and challenges which were faced during the course and implementation of the distributed approach to observe/represent the design ecosystem; and (2) second, it debates on the strategic actions, partially co-developed during a participatory session with 22 pivots from national design schools – to reflect on the results and next steps of the project’s mission.

### **2.1 Approach and main results obtained during the project**

This section presents the distributed approach, results generated, as well as the lessons learned/challenge from its application and diffusion in Portugal. It uses the construct of system of innovation (Kappor et al., 2015) to support the interpretation of the results obtained. Table 1 presents

the main activities undertaken during the DesignOBS project which iterate between (1) data collection, (2) interpretation and representation; and (3) discussion and action. Table 2 combines the application of the main activities with the system innovation framework of Kappor et al. with the respective sub activities and outputs.

Table 1. main activities of the DesignOBS project

<b>Collect</b>	<b>Interpret and represent</b>	<b>Discuss and act</b>
define/refine model of observation	development of a “first portray” based on data	participatory analysis and discussion of the results to guide and influence public policy
collection of information in official governmental databases	launch calls for participatory interpretation and representation;	discuss about errors/failures detected as generators of other questionings and new actions
use of design school network to aggregate local information		
curation of the databases		creation of calls-for-action

Table 2. application of the system of innovation framework (Kappor et al., 2015) and main research activities

	<b>system of record</b>	<b>system of insights</b>	<b>system of engagement</b>
<b>collect</b>	aggregation and curation of public databases records of local testimonials archivals, reports	inquiries and questionnaires for design ecosystem vectors [yearly feedback loop]	involvement of data owners in data collection activities visits to design schools
<b>interpret and represent</b>	design ecosystem model infographics scientific studies case studies	toolkit to support data visualization and interpretation co-development of inspirational questions	workshop facilitation in schools launch calls for action and competitions at the national level
<b>discuss and act</b>	updated design-focused databases proposals for implementation of public policies	open calls for [other] data collection website navigation	national yearly workshop with data owners and public/private entities

The application of the distributed approach with design schools resulted in 5 open datasets about design in Portugal, 41 infographic posters developed by design students and design professionals, 2 dynamic Augmented Reality visualisations with an info-object, three meetings with Portuguese design schools, and a travelling design exhibition. All the material collected, curated and interpreted are part of DesignOBS website ([www.designobs.pt](http://www.designobs.pt)), the knowledge base around Portuguese design data. From archives of datasets, reports, documents, infographics etc. along with the data collection and interpretation toolkits, that can make it possible for any visitor to (re)use the data, work/manipulate it; and/or add additional datasets, complementing existing information. Given the evolving nature of this ecosystem, the DesignOBS can also identify new inquiries, need for additional inquiries and datasets to provide a more complete view of the national design landscape.

### 3 Methodology

As previously mentioned, this study presents post-project reflections about the application of the distributed observation approach, the results obtained, the limitations and challenges overcome to support the diffusion of the participatory approach to observe a design ecosystem when there is no specific infrastructure or actors to undertake this role - and understand if this alternative structure for design observation can be sustainable; and replicable in other contexts, with similar conditions as Portugal.

To attain these objectives, we used tenets of case study research (Yin 2014), and data triangulation analysis. Case study research is adequate to study past or current phenomena, drawing from multiple sources of evidence; in exploratory investigations of a phenomenon, where all variables are still not all understood. The DesignOBS project was a 4 years research project that involved various actors; design-led actions and development of artifacts. Multiple types and sources of data were collected systematically, analysed and captured either through reports, booklets, papers and presentations.

To validate the process, a final participatory workshop with design schools was undertaken to debate about the results as well as the short- to long-term strategic priorities and actions to consider for the Portuguese case; and reflect on the limitations of the organizational infrastructure to continue the project's mission. The development and application of a distributed, participatory approach to observe the ecosystem, thus emphasises the exploratory nature of the project. Details about data collection and analysis to define the limitations and future actions are provided below.

#### Data collection and analysis

To support the reflection process about the application of the approach and results obtain in the portuguese context, multiple sources of information were collected during the course of the 4 years research project namely:

1. The project's data log, which includes the registration of the research team meetings that occurred during the project (35 meetings). These meetings aimed not only to discuss about the inherent management activities of the project (activities and budget execution), but also to reflect about the datasets that were being built to support the development of preliminary data-driven questions to bring for discussions in REDE (National Design schools meetings);
2. REDE meetings documents, currently available for design professionals, design schools and other stakeholders interested in reflecting about this ecosystem (Borges et al., 2018, 2019, 2021). These meetings, which gathered in total 124 participants from 37 schools, were followed by an analysis of records (audio, pictures) and systematised into key points related mostly to design education, research, knowledge transfer; and future questions. The meetings' structure evolved organically - calling on more active participatory action of its agents. REDE#03 in particular was led by a representative panel of academics from schools of different geographic areas, and subsystems of design education (i.e. private, public, polytechnic and university) which provided a reflection on the status quo of design education, making also a critical analysis and proposal for its evolution;

3. Collection of testimonies through interviews from professional designers and design students which participated in the development of infographies; and collection of the visitors' feedback about the objects included in a travelling design exhibitions organised in 2021 and 2022 (Borges et al., 2022; Costa et al., 2023). The usability tests of certain artifacts were captured following a thinking out loud method, and analysed following tenets of qualitative research analysis. All the results from these tests are available in Costa et al., 2023 (forthcoming). This activity represents in itself a knowledge generated from the practice of design;
4. Reports from the meetings undertaken with key European and international design entities in six different countries (Denmark, Sweden, Germany, Italy, Spain and Japan) focused on exploring different modus operandi and organizational components to sustain the observation and promotion activities in contexts where design culture is embedded at a government level (either through ministry or local-based entities, such as city halls).
5. Finally, a workshop named “Exploring the Portuguese Design Ecosystem” led by Dr. Anna Whicher (author of the Design Ecosystem Model) counted with the participation of the 22 design researchers and professors from eight different design schools. It aimed on the one hand, to revisit and reflect about the process to collect data about design in the country; and to develop recommendations for the future of the observatory. The workshop captured insights from the different participants through a collection of models (Whicher et al., 2018) and recorded interviews with participants (Whicher, 2022).

The information from these different sources were in a first instance summarised, presented and discussed internally, with the project's team members in two different meetings. Then, following tenets of qualitative research (Charmaz 2014) a list of all the insights/limitations was collected and systematised into higher order categories. The meeting resulted in two sets of interdependent conclusions (that include both limitations and actions) in the political/organisational sphere; and in the research and development sphere. Second, these insights were brought to the participatory session with the design schools representants, during the workshop. In total, a list of 32 priorities were identified by the participants, adding additional layers of information about the priorities and actions needed for the continuation of the project. The topics included multiple points of view, that in turn, complement the two categories identified by the research team (organisational and research sphere), namely the need to have design influencers (people/entities with power to drive opinions; and promote/lobby design); evolve design education (bringing futures' thinking and philosophy in the agenda); showcase design value in/for business; and diversify the financial sources and incentives dedicated to design action and promotion in schools and industrial sectors. These priorities were transformed into actions that are detailed in the next section.

#### **4 Reflections about the project**

The results section presents four actions, namely, two organisational-oriented actions (1. building a more sustainable and resilient approach of observation; 2. combine designOBS and REDE initiative as a platform) and two research-oriented actions (3. explore information design and virtual technologies

to map ecosystems; and 4. emphasise design culture within the design ecosystem model). Each of the sub sections summarise the reflections and limitations of the topic.

#### **4.1 Building a more sustainable and resilient infrastructure for design observation**

The REDE initiative - Design Schools REunion - brings together 37 schools to discuss the challenges of design education and research in the country and was a key forum for the amplification of the DesignOBS's initiatives. Since 2017, REDE, has been an important network to lever observation efforts in design. The first meeting organized with the schools included a broad spectrum of discussion that served to develop a first diagnosis of a community's concerns and issues, characterized by a great diversity of geographical contexts and heterogeneity of the social and economic conditions (Borges et al., 2017). With the approval and development of the DesignOBS research project in 2018, REDE#02 already included more specific questions and data about design research in Portugal, pointing towards more specific issues in design and ethics, design competences as well as the lack of strategic vision for design and culture (Borges et al., 2019). Finally, REDE#03 – which aimed to give a more active role to design schools – focused on reflecting, criticising, and speculating about the future of design education in the country, pointing towards actions that could make these futures come true (Borges et al., 2021).

“Schools are, perhaps, the biggest and most fruitful critical resource for research and development in design, reconciling it with the reality of each territory and culture. Therefore, it has been mainly in schools that the production of knowledge in design has passed” (Providência, 2019) – in the Portuguese case, design professionals, researchers, teachers have been undertaking an observation effort individually, because the country has no strong associations and/or representative entities for the discipline. Because the central mission of schools focuses not only on teaching, researching but also on cooperating with society (via knowledge transfer and mediation) they are a primary actor to consider for the application of a distributed observation approach, with access to local knowledge and experiences, contributing to the adaptation of the markets (through industrial qualification, and valorisation of products and services) and imagining futures. However, the application of cohesive exercise of design observation across the territory requires a multilevel method, influential entities and a national strategy.

On the one hand, micro-observations are important to consider diverse design instantiations that can only have interest in certain regions. Using design as a mediator between scientific (academia), economic (industries) and political (public administration) agents, can contribute to the economic sovereignty of regions, adding value to territories (Ribeiro & Providência, 2022), hence the importance of its inclusion. On the other hand, a *meso* perspective, which combines/aggregates these observations are needed to amplify reflections and discussions among other local influencing agents/institutions in the territory. The articulation of design instantiations can contribute to communicate its role to (1) mediate and integrate collaborative projects for scientific innovation through design artifacts (academia); (2) consolidate territorial brands, turning regions into more competitive hubs of innovation, thus fixating talent (local power, public administration); or (3) to value industrial products and services, strategically positioning Portuguese industries in global markets through design innovation as opposed to price competition, thus shifting the “made in” Portugal paradigm to “created in”.

The consolidation of the observation approach and models is expected in future research, either through the definition of a specific task force with representation across the different components of the design ecosystem, including designers to engage with business representation groups; or through the expansion of a network of autonomous local nuclei ("distributed observatories"), with their own specific objectives, but all aligned for a national contribution whose ultimate goal is to put Portugal under the EU Design ecosystem radar. Despite the positive results and momentum in the academic community, the limitation of an exploratory research project such as the DesignOBS, are not expected to suffice. This consolidation effort requires funding that does not necessarily fit within the umbrella of "academic research", but would require the involvement of the government, namely through the investment in a dedicated task force or organism.

#### **4.2 Combine DesignOBS and REDE initiative into a platform**

The project's conclusions point to deficits in the ecosystem at various levels, but above all in terms of the development of its associative dimension and public policies for its promotion with companies and other entities, as well as its self-knowledge.

The REDE initiative aggregates, in itself, a potential associative embryo, which can stimulate the almost non-existent associative life of designers, collect local information about design, in its dimensions and be active in its promotion and in the demand for political attention on this ecosystem, but it needs to transcend the walls of academia, by working with communities.

The DesignOBS project defined a model for guiding the study of the ecosystem. It aimed to collect and interpret data that could substantiate claims for public policy policies for the promotion of Design, but also for its self-knowledge and dissemination of its culture. It tested some methodologies for the implementation of this process; developed a set of new practices related to design observation and interpretation; and researched information design on this universe of data.

In parallel, the preliminary infrastructure of the DesignOBS website operated as a hub for the dissemination of the multiple materials that were developed throughout the project. Its major components included news (about the project initiatives and actions e.g. exhibitions), liaisons (network or cooperation established with other design-related entities and/or events), resources (namely, curated datasets about the different vectors of the ecosystem which other people could use), and publications (which aggregated both scientific publications in regular research paper format, as well as other instantiations of design produced through the Observatory's datasets e.g. infographic materials, *physicalizations*, data visualization with augmented reality; interactive interfaces). The richness and vast panoply of design artifacts produced constituted one of the major differentiating factors of this project as it used design as a key agent for cultural mediation (between data and society). These artifacts constitute today, the project's memory.

The consolidation and continuation of this iterative practice of observation and representation would require more stimulus of engagement behaviour, which does not occur naturally (especially for designers or design researchers operating with data) but requires a structured frame which sets the parameters within which activities can occur (Blasco-Arcas et al., 2020). Thus, based on the experience and lessons learned from the DesignOBS' project, one of the important venues to improve focuses on



exploring how engagement can be organized more systematically through existing associative efforts (such as REDE), but also with the support of more efficient digitally enabled platforms (intermediaries), able to sustain (1) the systematic integration of the different local design knowledge and design instantiations; and (2) support a more effective aggregation, cross analysis and curatorship of existing data (a reality most commonly found in other observatories which deal with big data).

Platforms are increasingly considered a key component to connect actors within complex systems, foster joint actions, engagement, and lever innovation (Blasco-Arcas et al., 2020). In design research, studies that dwell on designing these platforms are still at an early stage, with only a few empirical examples applied in the social innovation context (Baek, Kim, Pahk, & Manzini, 2017; Baek, Meroni, & Manzini, 2015; Morelli, 2015). Thinking about the continuity of this project involves deepening the intersection and articulation of two platforms (considering not only its information technology dimension, but also its necessary associative and social dimension):

(1) the first – REDE – as a source of action on the ground that generates the associative motivation capable of creating events - involving the local community of designers - that give visibility to the design that takes place in each part of the territory (exhibitions, competitions, cases of success, meetings, etc.), promoting and supporting the construction of local associative structures;

(2) the second – DesignOBS – acts as the structure (with consolidated rules/norms) for producing knowledge about the ecosystem, collecting data and systematizing, representing and disseminating the information generated by the REDE's action that can be crossed with data collected by official institutions, responsible for this task in the country (eg. National Institute of Statistics).

In this context, it will be decisive to launch actions that motivate academics to know (quantitatively and qualitatively) the local instantiations of the design ecosystem. This will be much more feasible, if opportunities for scientific (or professional) production are recognizable from the local observation of the ecosystem. Promoting an accredited national or international conference, around these themes, organized from the various Portuguese design research units could be the first step.

On the other hand, the combination of these research units around these platforms could ensure the critical mass, scientific, technological, and financial support necessary for the success of this initiative and, simultaneously, the institutional credit and international visibility indispensable for its affirmation.

The DesignOBS/REDE platform must have the ambition to scale up this research by looking in Portuguese-speaking countries and in Europe – namely in countries that share the same deficits – partners (and case studies) that allow to deepen this purpose, either for the possibility of comparing results and by exchanging experiences, generating common knowledge, and collaborating in the promotion and internationalization of Design and its culture.

### **4.3 Promote information design and virtual technologies to map ecosystems**

Data depends on participation and collaboration to reach value (Kapoor et al., 2015). Cultivating data literacy with a non-specialized audience thus, can be important to broaden the exploration of problems. In design, multiple initiatives emerged in this direction (Mauri, Colombo, Briones, &

Ciuccarelli, 2021); however, designers “are not used to working with data” and “still tend to see it as something far from their practice” (Mauri, 2020). Statistical analysis is important, but the ability to use visual narratives with images that convey messages (Valsecchi, Ciuccarelli, Ricci, & Caviglia, 2010), can enrich the design landscape, opening new inquiries and supporting innovation. As such, bridging systems of records (datasets), insights (representations and interpretations) and engagement (participation) is paramount to implement more structured innovation processes for the discipline (Kapoor et al., 2015).

Starting from the assumption that design is an activity of cultural mediation (Branco & Providência, 2018), its role in data interpretation can promote more participatory discussions about the discipline, and ultimately enrich the ecosystem. In this context, the project used a hands-on approach to infuse data literacy; and explore new ways of navigating within thick layers of datasets (Costa et al., 2023; Costa et al., 2021b; Costa et al., 2021c). The exploration of information design as an approach to analyse, map, and materialize data about the design ecosystem, with design students and design professionals, contributed not only to diffuse information about this ecosystem, but open conversations and support collective discussions.

For instance, the infographic posters emphasized certain messages about the vectors of the ecosystem (e.g. the disparities between gender within design education staff; the imbalance in offer and demand for design education within certain geographic areas). Certain artifacts aimed to provoke, other to invite participants in speculation exercises; or to elicit insecurities regarding personal interpretations (Borges et al., 2022). Also, other technologies and objects intersecting databases with multiple types of information, in immersive experiences supported interactive data exploration (Marques et al., 2023).

The data and information produced through this approach constituted an important medium to build the memory of the project; and to communicate it a posteriori. However, additional research is important to multiply and replicate this practice; exploring how information design – and the design of artifacts - can be used to communicate with meaning and trigger some transformation of local and national realities.

#### **4.4 Emphasise design culture in the design ecosystem model**

Considering the model proposed by Whicher et al. (2018) – comprising 9 components i.e. users, support, promotion, actors, policy, funding, research, education and designers – being the core of the project “Design for Innovation”, and tested by several European regions (Whicher et al., 2018) was set as a starting point to observe the Portuguese landscape. In their research, the authors define Design Ecosystem as “a theoretical construct used by academics and policymakers to identify and examine actors and initiatives in the design landscape and how this can inform targeted policy action for design” (Anna Whicher et al., 2018). The vocation of this model thus, directs to the collection/interpretation of data to inform the development of policies and actions for design. However, when comparing it to other ones, such as the Catalan design system model (Calvera & Monguet, 2008), the subsystem linked to “design culture” and its infrastructure (work is related with design and the creation, sustenance and promotion of its culture) are not very explicit.

Additionally, the application of the model has so far been mainly focused on the analysis of each component separately, with “policies and actors” being identified to balance/influence design supply and demand. Despite being useful in operational terms, this does not necessarily contribute to categorize the mission and typology of action of the agents present in each component, nor does it value the convergence of the components to create/develop a design culture in a country/region.

Thus, the proposal discussed and developed during the DesignOBS project attempted to integrate these different points, considering the need: (1) to compare the components across regions/countries – thus maintain a similar structure of the components; (2) to emphasize both national (quantitative) and regional (context dependent) data collection/interpretation – enabling a participative observation, with data/information that, a priori, has interest only at the local level; and sustaining more interpretative layers of information; (3) have a diverse body of actors contributing to design culture across the ecosystem (research, education, practice; promotion and communication).

This new model proposal was reorganized into four groups: (1) demand for design services; (2) supply for design services (including not only design companies/designers but also design departments inside companies; and the artifacts that represent instantiation of Portuguese design); (3) design culture (undertaken by entities/institutions to generate/promote information and knowledge about/for design); (4) political, social, and economic contexts (e.g. public policies, funding) – with which the ecosystem interacts.

The mechanisms feeding the data of existing vectors (design demand, offer and culture) need to be refined, emphasizing a diachronic perspective of the evolution of the discipline. The next step thus focuses on consolidating this model; and enriching current observation activities according to EU directives/incentives. The tools/methods will allow the various nuclei to operate according to a global philosophy, and simultaneously develop their own tools to observe, analyse, interpret and represent the local expressions of the Portuguese Design Ecosystem.

## **5 Conclusions**

This article presents the DesignOBS (Towards a Design Observatory in Portugal: models, instruments, representations, and strategies) process and results. It also discusses the main challenges faced during its development and reflects about future steps/actions to what could help constitute a more resilient distributed observation infrastructure for the continuation of the observatory’s mission, in a context where there are no actors dedicated to design observation, interpretation and communication.

This article also points to two organisational actions needed for the expansion of the project’s mission; and presents additional future research proposals. First, the organizational priorities focus on consolidating the distributed approach with multiple local nuclei, enabling a multilevel observation of design instantiations; and stimulating the systematic generation of design knowledge through effective platforms that integrate associative efforts with technological infrastructure.

It also emphasises the important role of design schools to act not only within the dimension of design education and design research, namely to strategically direct change and transformation, but also to

lever the role of design as a mediator of change in society. The implementation of these actions however, requires the establishment of a dedicated task force, a national strategy, and more influential entities. While schools play an important role, they may not have the resources or incentives to sustain continuous observation efforts in the long run. Future research could explore strategies to involve a wider range of actors and institutions in the ecosystem to share the observation responsibility.

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**Acknowledgement:** This work was financed through the research project Design Obs. “Towards a design Observatory in Portugal: models, instruments representation and strategies”, supported by Lisbon Regional Operational Programme (LISBOA 2020) and the Competitiveness and Internationalisation Operational Programme (POCI-01-0145-FEDER-032445), under the PORTUGAL 2020 Partnership Agreement, through the European Regional Development Fund (ERDF) and FCT; and the FCT-Foundation of Science and Technology, I.P., when eligible, by funds of FEDER of COMPETE 2020, within the Individual CEEC-2020.02229.CEECIND/CP1589/CT0001.