

Experimenting with policy design: fostering reshoring in Emilia Romagna region

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ABSTRACT

Design for policy deals with the policy cycle by recurring to design practices and tools, such as user-centered design, co-design, insights identification, abduction, creativity, prototyping. Empirical studies show that design as inspirational and creative practice usually happens in the first phases of the policy cycle, and it hardly manages the challenges faced in policy formulation and policy implementation of the later phases of the policy cycle. In this case study, we experiment with a policy innovation process that deals with design practices also in later stages of the policy cycle. The case study settles at the Regional level in Emilia Romagna to foster Reshoring initiatives.

Keywords: Policy design; prototyping; design thinking; reshoring; co-design; implementation.

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INTRODUCTION

In recent years, design approaches in public administration have gained popularity among policymakers and scholars (see Hermus et al., 2020 for a review). To cite some of the emerging topics around design and public administration, we mention design labs, design charrettes, design thinking for policy design, design-driven policy design, counterfactual thinking for policy design, experimental-driven policy design.

Design thinking (Micheli et al., 2019) is recognized as a solid methodology that supports innovation with its mindset (Dosi et al., 2018), tools, and micro-foundations (Magistretti et al., 2021). Design Thinking is now studied as a methodology that supports and integrates with many others, in terms of organizational processes for new product development (Cocchi et al., 2021; Franchini et al., 2018), design practices like computational simulation (Dosi et al., 2021), or innovation practices like open innovation (Mincoelli et al., 2020). In the last five years, design for policy has evolved to integrate design thinking to support policy design and making.

This work illustrates and discusses a four-year policy innovation effort (2016-2020) that spans different phases of policy design and making with the design thinking methodology. In the case study described, one of the most industrially relevant Regions in Europe (Emilia-Romagna) decided to incentivize the practice of reshoring, i.e., “a voluntary corporate strategy regarding the home-country's partial or total relocation of (in-sourced or out-sourced) production to serve the local, regional or global demands” (Fratocchi et al., 2014), and

developed *ad hoc* policies. The reshoring phenomenon has undoubtedly gained momentum over the last years (Ciabuschi et al., 2019). Recent studies (e.g., Wiesmann et al., 2017; Barbieri et al., 2018) exhaustively summarize the state-of-the-art of reshoring. They also notice the increasing interest that public administration demonstrates towards it. In effect, policies that support reshoring initiatives have been observed over the last years (see Elia et al., 2021 for a review). They generally took the form of financial aids, fiscal incentives, and subsidies for reshoring costs. While these policies have mainly been launched by National Governments, locally implemented policies also exist, involving public and private stakeholders (Pegoraro et al., 2021).

In the rest of this paper, we will describe the policy cycle of Emilia-Romagna's project to foster reshoring and how it has been supported with design thinking tools.

THEORETICAL BACKGROUND

The idea of public administration as a design science (‘a science that designs how things ought to be and not as they are’) has existed since Simon's work (1969) and is labeled as the design of policy. That means interpreting policy as a set of goals and policy design as the process of finding the (apparent) best solution for those goals that will be later implemented and tested in the ubiquitous policy cycle (agenda-setting, policy formulation, decision making, implementation, and evaluation). Differently, design for policy is about understanding the problem that the policy wants to tackle rather than finding solutions (Hoppe, 2018). In this stream, policy



design leverages the breadth of the search for possible solutions by involving users and stakeholders in co-design processes, leveraging empathy (and not only rationality), and prototyping the ideas with users before selecting the best one.

In a recent special issue related to design and public administration, Van Buuren *et al.* (2020) illustrate three different design approaches to policy design (not mutually exclusive). *Design as optimization* interprets the design process as an experiment aiming at validating a solution, meaning that designers collect scientific knowledge about methods that should solve a specific problem, apply it in a particular context and collect evidence about its functioning dynamics and effectiveness. Hermus *et al.* (2020) reviewed design tools and methods in the last decades of public administration disciplines and measured this approach as covering more of the 70% of the contributions they identified (they labeled this approach ‘informational design’). In this trend, “design is more often seen as a way of ‘translating’ knowledge than as a way of ‘producing’ knowledge” (Hermus *et al.*, 2020: 35). Coherently, in terms of methodology, scholars call for studies that show more straightforward and detailed descriptions of the use of design tools to create knowledge in public administration and public policy (Hermus *et al.*, 2020).

Van Buuren *et al.* (2020) identified two other approaches: design as exploration and design as co-creation. *Design as exploration* focuses on problem exploration and idea generation to find novel solutions. This approach uses classical design tools to understand the problem and propose creative solutions. Service blueprints, user journeys, or tangible artifacts are commonly used tools. The rise of public sector innovation labs, living labs, or design charrettes is ‘trending’ organizational solutions where those design activities happen. *Design as co-creation* includes a wide variety of actors, from stakeholders to users, to improve the understanding of the problem and design solutions that include different perspectives and identify an acceptable solution by different actors. Those last two approaches can happen together, although the practice still sees a dominant role of the expert designer against the role of a facilitator.

Usually, those last two approaches are limited to the initial phases of the policy design process (understanding and ideation). Leading scholars call for new methodologies that show how design thinking can go beyond generating novel ideas, considering the challenges faced in policy formulation and implementation (Howlett, 2020).

For Kimbell and Bailey (2017), systematic use of design in public administration practice would interpret policy design as a hypothesis and policymaking as a kind of prototyping. Still, we do not know what prototyping a policy practically means and which kind of tools or methods would support such a prototyping effort (Hermus *et al.*, 2020).

In this contribution we will describe with a single case study the design efforts and tools we developed to produce new knowledge during a policy cycle, and how we faced issues of policy formulation and (preliminary) implementation.

Table 1. Design approaches in policy design – table adapted from Van Buuren *et al.* (2020)

	Design as optimization	Design as exploration	Design as co-creation
Aim	Design as translating knowledge into the best possible solution to solve identified problems	Design as a creative art to foster creativity and enhance imaginative power: finding novel solutions to problems	Design as a participatory endeavor to foster learning and build consensus: all affected actors engage in defining problems and solutions
Tools	Tools to translate formal knowledge into artifacts	Tools that foster out-of-the-box thinking and innovation	Tools for dialogue and interaction
Keywords	Evidence-based design, scientific design, knowledge-based design, design as problem-solving	Design-thinking, open innovation, design as imagination	Co-design, collaborative design, participatory design

METHODOLOGY: EXPERIMENTING WITH RESHORING POLICY INNOVATION, AN IN-DEPTH CASE STUDY

This research used an in-depth case-study approach where the authors were involved in developing a design *for* policy process related to Reshoring in Emilia Romagna Region. We believe this case study is a relevant case study of experimentation since design practices happened beyond problem exploration and idea generation.

The research was experimental with no theoretical presumptions (Strauss and Corbin 1998). With full access to the field (as part of the team) and documents that trace how the activities developed, the authors traced the design tools and practices used during the policy cycle and extracted patterns of use. Regarding the material that the case study provides, it is essential to highlight that data were carefully collected during the policy development. The authors conducted four in-depth interviews with reshoring companies and other

interviews with stakeholders and focus groups with the leading team (Tab.2), three co-design workshops, one survey, and two extensive analyses on reshoring and foreign investment data. All interviews and interactions in co-design workshops were transcribed verbatim.

We first rebuilt the chronological process by collecting all the documents from shared folders and emails. In this phase, we used terminology similar to the one used during the process (see the following paragraph for a description). The policy cycle started by exploring Reshoring practice as an opportunity for the Region to strengthen investments on the territory; it then evolved into different policy prototypes, that enact that policy at the organizational and supra-organizational level.

We then extracted and classified the design tools used for each phase. For each of them, we discussed among authors which tools could be considered as classical tools that foster human-centered design, co-design, design as exploration, and which tools would instead be considered as significant for the call from scholars of ‘facing reality for policy implementation’. Those tools are described in the paragraph “The case Welcome back!”. At last, we visualized the use pattern of two primary practices that we believe can be a significant synthesis of how the design developed to face reality. Those patterns are in the Discussion session.

DESIGN TOOLS IN THE POLICY INNOVATION PROCESS

The team developed a policy innovation process represented in Figure 1 and structured into two macro phases (policy design and policy-making) divided into five activities. Each activity has specific design tools to enable exploration and creativity, abductive thinking and co-design processes, and iterative prototyping.

Policy design is about understanding the policy problem and the policy implementation strategies (Van Buuren et al., 2020). This part also includes a ‘fuzzy front end’ of policy design (Jungiger, 2013). Policy making includes decision-making and policy implementation.

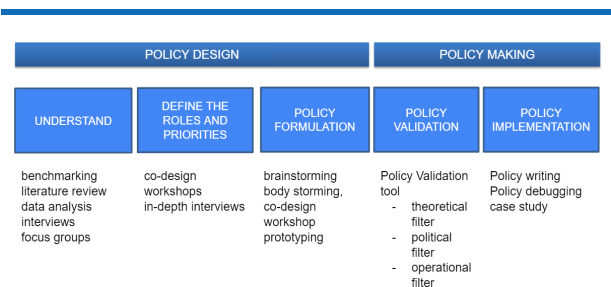


Fig. 1. Policy Innovation Process

In step 1, ‘Understand’, it is crucial to explore the phenomenon from multiple perspectives, with tools such

as benchmarking, literature review, data analysis, interviews, and focus groups. The second step is an alignment process, where the results of the understanding phase are openly discussed to support mutual acknowledgment of reciprocal needs among the different stakeholders. In this step, it becomes critical to define the roles and priorities of the public bureaucracy/legislators with regards to the main stakeholders. The tools used in this phase are co-design workshops and in-depth interviews. The third phase is Policy formulation, where local stakeholders work with the public bureaucracy/legislators to ideate and develop the first rough prototypes to test potential policies and rank them in order of feasibility and utility. As this is the final step of the Policy Design process, it is crucial to assess whether a policy has a high potential for implementation. The most relevant tools are brainstorming and body storming, co-design workshop, and prototyping in this phase.

The fourth phase is Policy Validation, where the public bureaucracy/legislators’ need is to validate the policy with the stakeholders, and refine its details. We designed a novel tool that we call “Policy Validation Tool” to do this. It is meant to determine the subset of users involved by the policy to refine it, and it uses three primary filters: theoretical, political, and operative (Figure 2). The theoretical filter concerns applying all known parameters from literature to the policy users to determine the set of interested parties. The political filter concerns discovering with politicians and stakeholders the decision heuristics for identifying policy priorities. The operational filter connects with potential users and validates their interest in the policy. By applying the filters, the policy is refined in an iterative discovery process, always having the population of interested users in mind.

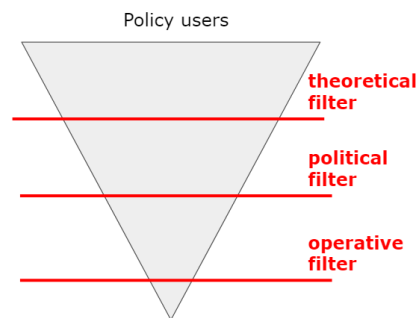


Fig. 2. Policy Validation Tool

The last phase, Policy Implementation, is about writing the policy and debugging it by testing at least one case study. It is to be treated “as if” the policy would be already implemented.

POLICY INNOVATION PROCESS APPLIED TO THE CASE: ‘WELCOME BACK!’ - RESHORING IN EMILIA ROMAGNA REGION

Through its Regional Innovation Strategy for smart specialization, the Emilia-Romagna Region pursues the objective of strengthening its industrial and production system - also in the form of increased investment and employment, value chains, and organization of post-productive services diversification - an essential enabling factor for the Smart Specialization Strategy. To this end, it promotes - through the tools and measures indicated by the regional law 14/2014 - the influx of national and foreign investments on the territory and in regional companies; it enhances strategies and projects of companies that achieve positive spin-offs in terms of qualification, innovation, and employment on the territories of reference or on the set of companies in the chain, with particular regard to the intelligent specialization of the production system; it promotes measures to counterproductive delocalization.

In this policy framework, the Emilia-Romagna Region considers with interest the phenomenon of productive relocation ("Reshoring"), which has emerged with increasing relevance in Western countries, particularly since 2009. This phenomenon presents clear elements of coherence with the objectives of strengthening value chains, recovery of competitiveness of the local production system, and increase in employment as outlined above. In order to further define the policies included in law 14/2014, the Emilia-Romagna Region engaged with four universities in a Policy innovation project. In particular, the University had to develop tools and a replicable methodology that public institutions could apply to support reshoring initiatives. Table 2 presents the multi-disciplinary and cross-organization team.

Table 2. Team in charge of designing the methodology behind the policy.

Policy innovation team	Role in the process
Regione Emilia Romagna	Regional Department of Labour – both political and technical directors
University of Bologna	Expertise in Reshoring practice.
University of Modena and Reggio Emilia	Expertise in design thinking, lead the development of activities and tools developed with design tools.
University of Parma	Expertise in public policy
University of Ferrara	Expertise in macro-economy
ARTER	The entity of the Regione Emilia Romagna that deal with data collection and statistical analysis to inform policy decisions to support investments

The project aimed at (1) monitoring the reshoring phenomenon and including support policies for

relocation processes implemented at a European, national, and regional level; (2) studying real experiences of reshoring; (3) identifying the factors that most impact the choices of productive relocation, with specific attention to the supply chain and strategies connected to the regional competitiveness, identify the preferred role of the Local Administration Entity (i.e., the Emilia-Romagna Region) in proactively stimulate and support possible reshoring initiatives. The team agreed to pursue this project with a co-design and exploration perspective, involving stakeholders from the industrial and productive world. The team then decided that project success was defining a prototype of a policy to support relocation, and a test of its implementability at the regional level, involving local stakeholders.

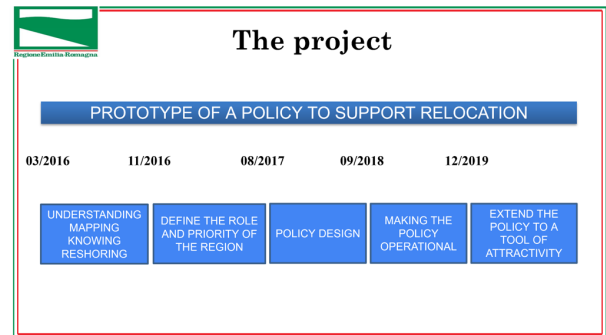


Fig. 2. Project Structure, adapted from the documental repository of the project

Figure 2 represents the project phases. In the first phase, the team focused on comprehending the context by deepening four case studies of local companies that developed reshoring initiatives. To understand those cases, the team interviewed the management and property of the four companies. The interviews had the objective to identify internal moments of decision making, dynamics with stakeholders, opportunities, and pain points that the Companies identified during the reshoring journey.

Combining the results of the analysis and a literature review related to ‘reshoring’, the team identified the most important themes (such as, to cite one, the connection among technical schools and Company HR needs) and the first network of local stakeholders willing to take an active role in regional policy co-design. The local stakeholder group was composed of representatives of the business world, associations, institutions, unions, education, and finance.

To define the priorities and role of the Region in a reshoring policy initiative, we started the second phase, and the team organized a co-design workshop to facilitate the interaction of the stakeholders and include multiple perspectives. The first project workshop with stakeholders took place (Nov. 2016) in the Emilia Romagna Region headquarters. A group of regional stakeholders, composed of six Public Administration,

nine Companies (Large and SMEs), four associations (cooperatives, industrials, unions), three financial institutions (a bank, a venture capital firm, and an investment advisory), and five educational institutions (universities and technical high schools) performed a co-design activity to define the needs and potential territorial policies to encourage the return of productive investments (reshoring) to the Region. The result was a need map (Fig. 3), and a list of candidate policy ideas (Fig. 4), further detailed in a Report shared among the actors.



Fig. 3. Need Map

A back-office design activity elaborated insights from the workshop and inputs collected so far and formally abstracted the definition of needs and policy ideas. The project entered the third phase of Policy Formulation, and a second co-design workshop was organized. On May 3, 2017, a mixed group of stakeholders (essential representatives from the corporate, association, institutional, unions, educational, and financial worlds) evaluated the proposed policy ideas. It gave suggestions concerning their subsequent design and implementation. We organized the workshop in a company that had reshored its manufacturing activities, and directors and the deputy president of the Region were present.

The point here was to collect inputs related to the desirability of the solutions and ideas' implementation (feasibility and viability). During the workshop, we asked stakeholders to indicate what policy ideas the Region should support to encourage the return of productive activities. The composite panel of 21 stakeholders evaluated the ideas that emerged, indicating a ranking of interest in terms of Utility and Feasibility for implementing the policy ideas, and they provided suggestions for further planning. The result of this workshop was a final ranking of the ideas:

1. Scouting Reshoring (14 votes) and Institutions Guide (14 votes)
2. Return kit (9 votes)
3. The nurseryman (5 votes)

4. The godmother (2 votes) and Supply chain designer (2 votes)
5. Identification of supply chains (1 vote)

Fig. 4. Policy Ideation

In the project's fourth phase, Emilia-Romagna Region and the Universities engaged in the Policy Making process and agreed to develop concept #1. The objective of the 4th phase was threefold: (1) to understand how a specific policy of reshoring could be inserted into the policy agenda (2) to design the implementation of the "Scouting Reshoring" solution down to the operational level, (3) to support in parallel the first round of implementation of the solution - considered as a prototype of the policy.

The first point started with the learning of phase 2 (i.e., welcoming the prodigal son rather than investing in the ones who stayed) and the awareness that the Region could not directly finance a reshoring activity. Technicians decided that such a policy would happen, adding a stream of reshoring support into the agenda for supply chain investments.

It took a specific design effort from the Universities team to conceptualize the second point: the functional design of a scouting solution for companies interested in reshoring to Emilia-Romagna. This solution is consistent with the vision, developed during the project, of a Region that does not wait for reshoring to happen on its own and instead scouts companies potentially interested in reshoring and proposes their return. The scouting is centered on supply chains of interest for the territory. It

starts from a shortlist of companies that have gone offshoring. It is conducted by a territorial team that is interdisciplinary and inter-institutional (not only representative of the Region). Once the selected potential reshoring company is identified, the interdisciplinary team has to make an offer to accelerate the reshoring.

The third point aims to develop this concept facing reality, such as limited resources, political tensions, constraints of actions. For example, every stakeholder knows the supply chain of interest of the territory, but who shall prioritize in case of limited resources? The reshoring of a mechanical company or a pharmaceutical plant? Another example: given that you have a list of all the offshored companies, how can you short-list the companies that could have a higher potential of reshoring? The third point (i.e., the development of the prototype) took months of work, and a new contract between the parties (see tab. 1) was dedicated to the activities. It was a joint design process by the team of Universities, the Region, and ARTER (The Region's agency for territorial development), to develop a prototype of a methodology that could practically serve that aim. This activity included, among others: identification of which data does the Region possess already, collection of data that are missing, identification of different databases with extra data to merge, design of the KPI for the selection of the target company, production of the algorithm to identify the best potential reshorers. In order to search for the most promising companies concerning reshoring, the team started from an extensive database using, first of all, a theoretical filter (informed by the literature), a political filter (informed by the positions of the stakeholders in the area) and an operational filter (informed by the possibilities of the team to contact the company).

For example, it is known from the literature that the company that has just relocated is not the ideal candidate for reshoring (Ancarani *et al.*, 2015). Therefore, all companies that have invested for less than two years will be filtered from the initial database. Applying the principles of the literature (theoretical filter), one can propose to the policymaker a portfolio of potential reshoring companies from which to choose. With the political filter, for example, only those types of companies that the territory needs (e.g., with high added value) are considered as potential targets for the policy. The last filter - the operational one - starts with the companies that have passed the various steps and eliminates those not interested in contacts with the institutions. The remaining companies represent the sample of potential re-entrants that the Scouting Reshoring team will have to meet to construct an offer of interest for re-entry.

To validate the policy prototype, the team designed a policy making workshop, the third co-design workshop of the project. Fifteen Stakeholders from the corporate, institutional, association, educational and financial worlds attended the workshop, and workshop exercises

fostered a continuous dialogue between parties. The first objective of the workshop was to collect enough discussion to shift from centralized decision-making (from the Region) to co-designed decision-making (from the territory, by all the different stakeholders). The decision to take was related to 'the preferred reshorers', meaning: among different types of potential reshorers (that could bring their production activities back to the Region), who are the most interesting ones upon which the Region should invest and push for their reshoring. The workshop structure thus aimed to understand the criteria that different regional stakeholders use to define 'the preferred reshorers'. During the activities, each stakeholder had to decide the preferred reshorer between couples of potential reshorers. The couples represented real Company names (selected by the algorithm of the policy prototype). The stakeholder also had to explain why they chose that (e.g., 'I choose Company A instead of Company B because...'), reaching an agreement in small groups, so that - thanks to the transcription of the workshop activities - we extracted and collected: i) a list of 'why' stakeholders made some choices (e.g., which supply chains, which minimum size of re-entry, to which areas of the region..), and ii) a list of prioritized whys since the stakeholders had to defend their choice in a public 'fight for reshoring', and we obtained a final shared position regarding which Company they would support reshoring first.

The second objective of the workshop was related to data supporting decision-making. A stakeholder has to decide who is the best reshorer among two potential ones. The prototype developed hypothesized the data that could inform such a decision. Is that data enough for the decision-making process? A specific process during the workshop enabled the validation of this assumption and the collection of missing data that the team would have to iteratively re-inject in the prototype.

In the workshop, the team defined and tested all the tools to facilitate reshoring. Hence, the policy was ready, and the co-design team identified a potential candidate to conduct a case study.

To perform the last phase of the Policy Innovation Process, Policy Implementation, the team considered a company with high reshoring potential that passed all the filters as a case study. By chance, a company representative attended the co-design workshop, and the team had a follow-up interview. During the interview, the company expressed how the management evaluated reshoring possibilities and shared confidential data related to the decision-making process. The fact that the company (identified by the prototype as a potential reshoring candidate with a high KPI) declared that the management evaluated the reshoring initiative, represents a first insight that validates the policy prototype's output. The following phases of the policy would require other prototype validation with a more classical use of deductive-inductive experiments following classical policy validation tests.

RESULTS

After the prototype validation phase, the project moved to the final step of the implementation, i.e., having the Regional Labor & Territorial Department write and publish the policy. Nevertheless, the emergency caused by the Covid-19 in early 2020 forced the Regional Institutions, including the Labor and Territorial Department, to focus on the urgent measures contrasting the pandemic. Despite this, it seems plausible that a renewed interest in proceeding with the actual implementation can materialize, also in consideration of the various vulnerabilities of global supply chains the pandemic has made apparent.

The process impacted services activated by the Region, and a new mindset activated into the Labour department. Indeed the labor department started a shorter relationship with companies with one-to-one connections between offshored managers and labor representatives. We consider this an interesting result showing the impact of such a design.

More importantly, due to the methodology described connected to the innovative process of policy design, the Region experimented with a new way to design for policy. Actors from the Labor department perceived the method itself as valuable in the ideation and definition of the solution concepts, especially in the second phase, where they could prototype a policy. This topic is readdressed in the discussion.

Even the team of experts from Universities had a change of mindset, departing from an expert-driven design engaged in a rational design of policy towards a co-design process and design for the policy process.

DISCUSSION AND CONCLUSIONS

Christiansen and Bunt (2014, 42) interpreted design as a practice that reduces the distance between policy and implementation. A policy is developed around users, co-designing with them and mediating their tensions. The problem has been reframed and explored since the beginning to improve the chances of successful implementation. However, most of the ‘creative’ application of design (the ones defined in this initial theoretical review as explorative and co-design) has shown some limits with this respect. We started the analysis of this case study to experiments around two main calls from policy scholars: how design thinking can go beyond the generation of novel ideas, considering the challenges faced in policy formulation and implementation (Howlett, 2020), and - given the notion of policy prototype (Kimbell & Bailey, 2017) - what it means in practice (Hermus et al., 2020).

Fig. 5 shows the use of co-design and prototyping tools during the process. The dot position represents when the tool was applied, and the dot radius represents

how relevant and intense the time dedicated to the prototype was.

The team used co-design tools beyond the ideation phase. First, in workshop two, we used co-design and asked stakeholders to express a vote related to the feasibility of each policy concept, so that both the votes of desirability *and* feasibility drove the final ranking of solutions. In that workshop, the voting session was anticipated by a body-storming where stakeholders had to face extreme choices and discuss possible positions to deepen their awareness while voting. Second, we designed the third workshop to identify the design principles of the final prototype, and we did that with a co-design approach. Indeed during the workshop, we ‘cornered’ stakeholders and pushed them to choose between real options that go beyond their general abstract positions, and extracted rational choices presented by territory stakeholders’ representatives. Hermus et al. (2020) reviewed and classified empirical design approaches to policy, and among them identified a subtype they named ‘the implementation-focused’ approach. One way to develop it is using consensus-driven design, where designers work towards the best supported (by stakeholders) solution rather than the best solution per se. We believe this is not what we have done here, as the two workshop mentioned above enabled a deeper solution selection.

Design tools along the process

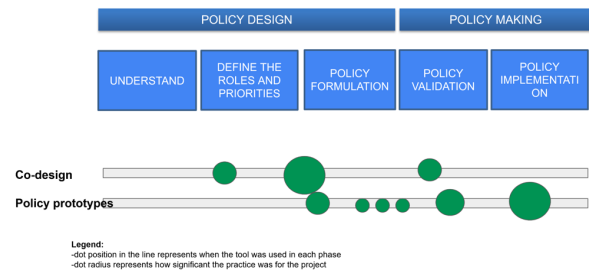


Fig. 5. Practices used in the different phases. Note: the whole process happened as a co-design inter-organizational process (see Tab. 1), but the co-design process mentioned in this figure reports to the involvement of the whole set of stakeholders (Companies, Finances, and Banking, Unions, Schools, ...).

Figure 5 also shows the prototypes we developed as policy prototypes. We developed different prototypes (more or less rough /elaborated) with tangibility, fidelity, and validity (see Dosi et al., 2020 for a definition and operationalization of those prototype characteristics). Among the used prototypes, we recall i) simple artifacts of policy concepts where a figure or a card explained the prototype, story-tellings where the policy was explained to stakeholders to collect feedbacks, iii) prototypes as proof of concepts, where the team (Table 2) developed the processes needed to put the policy in practice; iv) experiential prototypes, where the team experimented the interaction with actual companies exploring the offer of a reshoring service; v) real-live prototypes, where the

Labor department professionals experience the offer. We did not reach a stage of prototypes as pilots nor as live prototypes.

We believe that this case study proves how the use of design tools for public policy can inform the process also beyond the general solutions ideation phase and shares interesting methodological insights for the community of designers involved in the interaction with public bureaucracy and legislators.

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