

Designing Across the Boundary: Translation Work in a Resource-Constrained Public Institution

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Abstract: This paper examines two moments of translation work in a thesis with an Research through Design (RtD) approach that produced a consultancy model grounded in Product-Service System (PSS) Design for Sustainability suitable for integration into the Ventanillas Regionales de Negocios Verdes (VNVs) services, a Colombian green-business regional program. The first moment converted an academic reference framework, developed and deployed by LeNSlab Politecnico di Milano, into a localized, board-format artefact. The second moment considered the difficulties of participatory validation that the board-format artefact application endured in execution, undergoing an adaption, in mid-study, into a conversation-centered format. Drawing on account of translation work in participatory design, alongside scholarship on participatory design in resource-constrained Latin American contexts and pluriversal design's critique of design frameworks spread as universal, these two moments are understood as empirical instances of how systemic intervention frameworks are translated into situated public-sector practice. This paper supports that translation work in such contexts moves across different domains, and adaptations made to a reference framework reappear in design practices and processes, further accelerated by stakeholders engaging with the artifacts. Eventually, it closes by discussing designers' accountability as mediators in emerging contexts, and open-ended remaining of a pilot-ready model that the underlying thesis proposes as next steps of experimentation.

Keywords: participatory design, boundary objects, translation work, pluriversal design, Latin America, public institutions, research through design

1. INTRODUCTION

Design interventions integrating systemic approaches to support sustainability transition are frequently constructed by adapting existing methodologies, developed and validated in foreign contexts, to settings for which the methodology was not originally designed. This adaptation processes are essential component of the design process, particularly in contexts such as of a resource-constrained public program in Latin America. These public programs operate under conditions, staffing, budget cycles, and geographic dispersion that differ significantly from the settings in which most participatory and systemic design literature is conceived.

This paper examines the design process adaptation directly, within Research through Design (RtD) approach project aimed to support the *Ventanillas Regionales de Negocios Verdes* (VNVs), the regional technical units of Colombia's National Plan for Green Businesses that verify, endorse, and advise Small and Medium-sized Enterprises (SMEs) on sustainability transitions. A companion paper (Luisa Valentina Arosa Cely, in review) reports the resulting design contribution of the thesis work, a modular mature-routed Sustainable Product-Service System consultancy model built to support the duties of this public ecosystem (VNVs). The present paper diverges from the broader investigative scope of the model proposal by posing a narrower, empirical inquiry: how does Research through Design (RtD), employing participatory methods, translate a global systemic framework into a Latin American public-sector context, and what does this translation work reveal about designers' role from a pluriversal perspective?



Two moments of translation, drawn from the same thesis, answer this question directly. The first converted an academic reference framework, developed by LeNSlab Politecnico di Milano, into a localized, board-based artefact. Both moments are interpreted as empirical evidence in three conversations in the design research literature: boundary objects and translation work, participatory design in resource-constrained Latin American contexts, and pluriversal design's critique of frameworks that spread universal.

Section 2 develops the conceptual framework, Section 3 details the methods used in each moment of translation, Section 4 presents both moments as empirical findings, Section 5 discusses them through Botero et al.'s (2020) four domains of translation work in participatory design, and Section 6 closes with limitations and conclusions.

2. CONCEPTUAL FRAMEWORK

2.1 Boundary objects and translation work

The boundary object was proposed to illustrate how cooperation among disparate communities of practice can be achieved without the requirement of consensus on meaning. The concept posits that an object, such as a map or a specimen, can be interpreted differently by each community while retaining a sufficient degree of shared structure to function as a common point of reference. I extend this technique into translation work, arguing that the core skill of participatory design is not solely the selection of the appropriate method, instead, it is the continuous articulation of four co-constitutive domains. The first domain is Strategic Considerations, which encompasses the institutional agendas, policies, and power relations that frame who is included in the design process and the rationale behind it. The second domain is Mundane Acts, which refers to the practical, often invisible labor of logistics, scheduling, and preparing materials that condition how collaboration unfolds. The third domain is the Choice of Methods, which includes the specific games, cards, and workshop formats used to structure a session. The fourth domain is Design Outcomes, which refers to the sketches, prototypes, and artifacts produced during the session. Drawing on actor-network theory, they characterize translation as inherently imperfect, never pure, and involving some degree of betrayal of what is translated. This paper adopts these four domains as its analytic vocabulary.

2.2 Participatory design in resource-constrained, Latin American contexts

The concept of Participatory Design (PD) originated in Scandinavian workplaces and has since spread widely. However, its methodologies entail assumptions regarding resources, documentation procedures, institutional stability and collective design literacy, that may not be applicable in diverse contexts, particularly in complex scenarios such as those encountered in the public sector, a subject that this paper is bounded. Evidence from developing-country health information-systems projects shows that participatory approaches rarely transfer intact, requiring adaptation to local conditions. In Latin America, imported participatory formats encounter local practices of authority and informality that reshape how the format is used. This finding extends to the public sector, in which is considered that Latin American efforts of Public Innovation (PI) labs are highly vulnerable to shifting political priorities and administration transitions.

The question of adaptation also extends to how participation itself is organized. It is argued by authors that consensus-oriented participation formats risk reducing marginalized participant to passive subjects of a previously established agenda, and genuine democratically empowering participation requires making room for dissensus. Similarly, standardized participatory formats developed for one have the potential to become burdensome when introduced in another setting without sufficient adjustments, potentially overwhelming the civic engagement they seek to support.

2.3 Pluriversal design and the translation of global frameworks

Sustainability and systemic design interventions are increasingly understood as situated practices, raising questions about how frameworks developed in particular contexts spread to others. I argue for a pluriversal approach to sustainable development in which situated ways of sensing, thinking, and making shape design practice rather than universal models being applied across contexts. In Latin America, this concern is particularly relevant as transition

and systemic design frameworks developed predominantly in the Global North can reproduce colonial assumptions when applied directly, calling for engagement with perspectives such as Buen Vivir, redes de solidaridad, diálogo de saberes, and sentipensamiento . Similar concerns emerge in service research, where imported, product-centred perspectives can obscure forms of service innovation emerging from low-resource and underexamined contexts . These perspectives foreground the interpretive work involved when design approaches move across contexts. emphasize that objects carrying design proposals across boundaries are inevitably imperfect act of interpreting a shared situation.

Building on these views, the present paper approaches translation as an inherent part of systemic design practice, in which frameworks and design practices are interpreted and reshaped as they encounter different forms of knowledge, institutional conditions, and ways of organizing practice.

3. METHODS

This paper reports on Research through Design (RtD) approaches, in which the design process itself is the primary mode of inquiry , complimented with a participatory design approach to engaging institutional and academic stakeholders . In contrast to the companion paper, which presents the consultancy model's content, this paper focuses on the methods employed to translate that model as its primary empirical material. Therefore, it treats the methods used to translate that model as its primary empirical material, data generated across two moments: the translation of a reference framework into a board-format artifact, and the translation of the artifact into a conversation-centered validation format.

The first moment used desk-based methods, including a structured reading of the LeNSlab Politecnico di Milano consultancy document, grounded in the Method for System Design for Sustainability (MSDS) , against findings from semi-structured interviews with VNVs operators from two contrasting regional contexts and a first encounter with a LeNS Colombia network member. These were later synthesized into three translation artefacts: a stakeholder map, a system map, and a board-based format of a first user journey through the proposed phases, actors, and tools, together constituting Model v0.1.

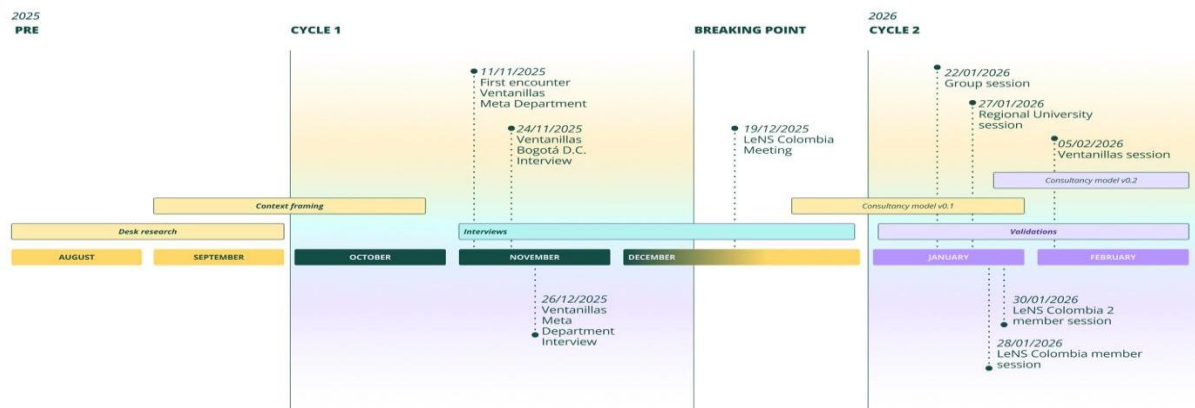


FIGURE 1. Timeline of the Research

The second moment attempted to virtual participatory methods, designed as a group validation session with two LeNS Colombia network members and a VNV operator, and executed through a structured around the board-format and three card sets: Critical Point Cards, Actor Cards, and Tool Cards, with a color-coded complementary

annotation system; followed, once this format proved too dense for the setting, by four individual walkthroughs with additional LeNS Colombia members, the VNV operator and a representative from a regional public university, conducted as open, conversation-centered discussions of the same material.

The data sources encompass the reference framework and the researcher's own record of the decisions made during the conversion process. Additional sources include the board's content and annotations, as well as facilitator notes from all four sessions. Given that the researcher who carried out both translations is also the paper's author, the account is a first-person, reflexive record rather than an independent observation. Section 4 analyzes the material through the four domains identified by : strategic considerations, mundane acts, choice of methods, and design outcomes. Section 5 discusses how each method employed, including desk-based synthesis, board-based facilitation, and open conversation, served or strained that translation work.

4. FINDINGS: TWO MOMENTS OF TRANSLATION WORK

4.1 From reference framework to local board

The study's initial phase entailed conducting the semi-structured initial interviews, parallel to the understanding of the validated consultancy format framework developed by LeNSlab in Politecnico di Milano and grounded in the Method for System Design for Sustainability (MSDS) . The adoption of this validated consultancy format was a deliberate decision with the objective of preserving the theoretical structure equipped to address the complexity of Sustainable Product-Service Systems and its design processes. This decision can be regarded as a translation one that was informed by the outcomes of the semi-structured interviews- Consequently, not all MSDS tools were incorporated into the local proposal, and the consultancy format served as a reference to select what a resource-constrained regional program could plausibly use.

As previously stated, this selection was intended to address the findings that emerged from Cycle 1. A series of semi-structured interviews with VNV operators in two distinct regional contexts: an urban district office in the capital of Colombia, and a rural-dominated office in the department of Meta. These interviews revealed that a single national program was operating under two divergent local logics, in which the urban operator described a landscape of “polarized knowledge,” entailing businesses ranging from unintentional, survival-driven sustainability practices to highly credentialed circular-economy expertise, and in contrast, the rural operator described a context built on empirical, production-focused knowledge, oriented toward practices such as substituting organic for chemical fertilizers rather than strategic sustainable business modeling. As one operator explained, businesses could not be treated as a single category because their activities, needs, and operational contexts differed substantially, therefore, a reference framework designed to promote uniform business conditions in other regions had to be adapted to account for this variability before it could be disseminated.

In the initial set of interviews conducted for Cycle 1, two participatory activities have been designed to facilitate the first LeNS Colombia network member's interview. These activities included a “finding-driven ideation” exercise and a “collaboration role matrix”, which were intended to map potential actor interactions and collaboration effort directly into the emerging consultancy model. However, both were abandoned due to their impracticality when faced with time constraints and scheduling limits, within a single encounter. This preliminary adjustment established the direction for subsequent development: findings would require consolidation into a unified format, capable of being discussed independently, and in which the validated reference consultancy format by LeNSlab compensated the oversight of conceptual co-design activities.

Subsequently, the findings enabled the configuration of the initial versions of stakeholder mapping, the flows of consultancy services, resources and knowledge in the ecosystem mapping; and the board-format rendering of the first blueprinting of the consultancy model through the proposed phases, actors, and tools. Collectively, these design components constituted Model v0.1, which was designated as the study's “breaking point” in the underlying thesis, and in which the moment academic methodology met a localized, discussable form. As the thesis itself states, the

objective of this phase was not to finalize a design outcome but to create “a device for conversation that could facilitate the connection between global theory and the particularities of the Colombian context”.

4.2 From board to conversation

The board-format that resulted from this first translation was built with real ambition. It organised the consultancy process into four modular phases, two drawn directly from the LeNSlab reference structure and two, “Enabling Conditions” and “Impact Validation and System Activation,” added from Cycle 1's own findings about context and capacity.

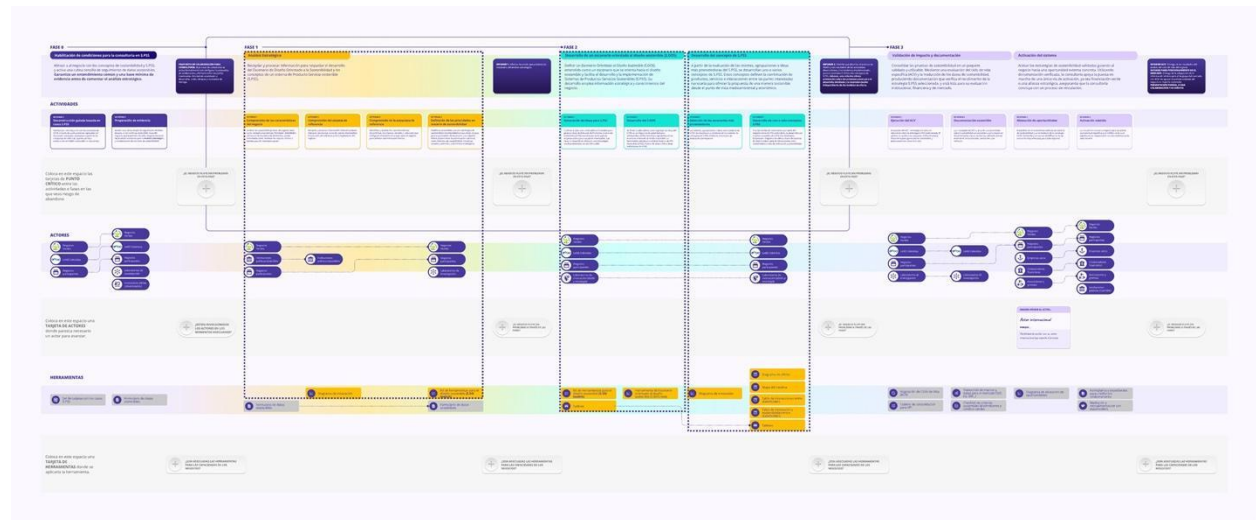


FIGURE 2. The board-based format, four modular phases, actor and tools allocation

It combined this structure with three card sets, Critical Point Cards for marking risks of business disengagement between phases, Actor Cards for reassigning who would perform which activity, and Tool Cards for assessing proposed instruments, alongside a color-coded annotation system for highlights, risks, and suggestions. The session itself was compressed into 55 minutes: a ten-minute introduction, a 35-minute collaborative walkthrough, and a ten-minute reflection.



FIGURE 3. Close-up of the three card sets (Critical Point, Actor, Tool) and the colour-coded annotation system.

However, the effectiveness of this compression rapidly diminished. As the session was proceeding, one of the participants made a request to moderate the pace of the discussion, while expressing the interest in allocating sufficient time to meticulously approach the board-format. This indicated that the board's conceptual density, four phases, an actor allocation scheme, three card sets, and a live annotation system, exceeded what a single 35-minute walkthrough could hold. An institutional participant raised a substantive concern that the board-format learning-curve made difficult to explore in the time available, the raising concerns in within the model's structure and contents, such as relevant themes in the financing logic. The intended validation session, initiated through the participatory tool of evaluation, rapidly evolved into a critique of the validation process itself.

Instead of maintaining the original format consistently across all subsequent sessions, risking failure of the tool, the study underwent an adaptation. After this, four individual walkthroughs were conducted, with two additional LeNS Colombia members, the pertinent VNV operator, and a professor of a regional public university. In each case, the utilization of cards was designated as optional, and the facilitator, rather than the participant, was tasked with navigating the board. This navigation entailed the live annotation of each phase in the established color-coded system, guided by a single question per phase rather than an unrestricted board. Consequently, the designer effectively assumed the role of conductor for the new tool, thereby relieving the participants of the responsibility of manual operation.



FIGURE 4. One of the conversation-centered slids scaffold, and explanation.

This shift, from a tool-centered to a conversation-centered approach, produced a different form of engagement: interaction transition from interface use to sense-making, and the resulting commentary, while still mapped to the same phases and still color-coded, became more nuanced. The collective analysis and outputs of the sessions culminated in the qualitative material, highlights, risks, and suggestions, that would inform the model's second iteration; nevertheless, the most consequential finding within the design process and objective of this paper indicates that the very artifact that had to be designed, through deliberate selection and translation, to render a global framework locally discussable, then had to be re-mediated, in real time, once local stakeholders engaged with it.

5. DISCUSSION

The examination of the four domains identified by , reveals that the two moments examined in Section 4 demonstrate translation work occurring in distinct locations on each occasion. In the process of adapting the LeNSlab/MSDS reference consultancy format to Model v0.1, the primary challenge was in the design domain: deciding which MSDS tools to keep, compress, or disregard, and creating new outputs, including the first versions of the stakeholder map, ecosystem map, and the consultancy model structure, that did not exist in the reference document. The mundane domain was also present, however to a lesser extent: the earlier fallout of the “finding-driven ideation”

and “collaboration role matrix” activities in Cycle 1, due to scheduling and time constraints, was mundane friction that reshaped the study's method domain prior to the format-board tool conception.

The breakdown of the board-format in the initial group session demonstrates the opposite distribution. In this case, the challenge was directed associated with the method domain: three card sets and a color-coded annotation system, selected deliberately to support traceable feedback, resulted in a cognitive load that the mundane conditions of the session, a 55-minute meeting, competing institutional schedules, could not accommodate. The subsequent shift from tool-centered to conversation-centered facilitation was, in 's terms, a re-negotiation of the method domain to relieve pressure on the mundane one, at the cost of moving translation labour from the participants to the facilitator. The design domain was also subject of modification, with the board-format static artifacts being substitute for live, facilitator-authored annotations, offering a different kind of design outcome from the validation sessions.

Collectively, these two moments demonstrated translation work migrating across domains within a single project. During the conversion of the framework, the design domain was protected, and its theoretical SPSS structure was maintained. Consequently, the strain was transferred to the mundane and method domains of the validation session itself. This contributes to a more robust understanding of the dynamics of design and participatory activities, as demonstrated by , by providing a concrete example of the impact of early translation decisions on subsequent design processes.

In the conceptual framework of pluriversal caution, as posited by and , pertains to the potential risks associated with the propagation of global frameworks that are presented as if their assumptions were universally applicable. This risk was visible in the format-board version and became apparent through its breakdown. The consultancy model validation became locally viable only when its method domain was renegotiated in relation to the everyday conditions of the stakeholders meant to engaged in discussion. For practice, systemic and participatory design work involving the adaptation of global frameworks to under-resourced public programs should expect the following sequencing: strain contained during framework adaptation does not disappear, it resurfaces each time participants engage with what was designed, often in a different domain from its original one.

Ultimately, translating the MSDS/LeNSlab framework into the public sector was of the Colombian context, was not a single, preliminary act of localization. Instead, it required continuous, distributed effort across multiple domains and phases of the design process. This ongoing mediation reveals that adapting a framework is part of the labor of the designers in their participatory and translation attempts, hence, they must act as accountable mediators, continually reauthoring structures as they engage with stakeholders and taking responsibility for the terms of each translation.

6. LIMITATIONS AND CONCLUSION

Within the limitations, the empirical scope of this study is modest: scope is modest: one set of interviews with a mid-study adjustment, one act of framework conversion, one group session, and four individual walkthroughs, involving institutional, academic, and consultancy-oriented participants. This scope was sufficient to trace a case in how a global framework was translated and adapted through engagement with the institutional and academic context, but it did not include direct involvement with SME owners or the wider VNV network in later phases, and who constitute the key participants in what the underlying thesis identifies for the pilot, as a further step. The analysis also rests on the researcher's own record of translation decisions and facilitation; this positionality is acknowledged as part of the paper's interpretive perspective. The case is geographically and institutionally specific to one regional public program in Colombia, and its account is situated rather than generalizable; how far it holds elsewhere is a question future comparative work across Latin American public programs would need to answer.

Finally, this study shows that translating a global systemic framework into a Latin American public-sector context is an ongoing process of adaptation and negotiation. Through RtD and participatory engagement, the framework was first made locally discussable and then reshaped as stakeholder engagement revealed conditions the initial form could not accommodate. The resulting traces in interviews, board annotations, and facilitator notes show

how translation emerged through practice. From a pluriversal perspective, this positions designers as accountable participants in the process: responsible for recognizing what a framework carries, what must change, and how those changes are negotiated locally. Therefore, translation work continues as the framework encounters new contexts, actors and design phases.

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