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PMI-GUEST for social innovation

Adapting the GUEST methodology for application on social innovation projects

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Abstract

Coordination, progress tracking, and communication are issues inherently linked with pursuing an objective collaboratively, and exponentially increase with the number of involved stakeholders.

These challenges are shared between the well-studied and known field of economic value creation and the lesser considered, wide, and unexplored field of social innovation projects.

This thesis explores the possibility of offering a universal methodology to ease the cooperation between stakeholders in any social innovation project.

The primary aim is adapting the existing GUEST methodology, developed to foster innovation in startups and small-medium enterprises, to allow it to be universally available to be applied to any social innovation project.

To achieve this, the application of GUEST to the project SINFONICA through the creation of SI-GUEST will be analysed. Then, the core characteristics of social innovation projects will be studied, and the benefits and possible mistakes in generalizing the methodology will be listed.

Considering the concept of pluriversality and the paradigm of complexity, the newly developed methodology will not be a set of pre-determined tools but will transfer part of the power in the design process to the user.

Instead, a set of tools commonly adopted by managers, designers, and communicators will be analysed and categorised based on several characteristics of social innovation projects: formal or informal contexts, number of members of the consortium, time span of the project.

These tools will then be presented to the users divided by the step of the GUEST methodology (or of the design thinking process) to which they may be applied.

The user will thus be given power in the design process by allowing the choice of the most appropriate tools for the project they are considering, building their own, customized, and adaptable Pluriversal, Modular and Innovative GUEST methodology, from now on named PMI-GUEST.

Acknowledgements

This thesis is a worthy representation of the fundamental lesson that university, and life in general, has taught me during this first quarter of my life: that cooperation is not simple, collaborating is not easy, but that through successful sharing of knowledge and experiences, the best results are reached.

I want to warmly thank my supervisors, Guido Perboli and Francesca Merlo, for their support through the difficult feat of creating this thesis while juggling through work, study, and daily life. Additionally, I want to thank them for introducing me to this challenge, which allowed me to express my passions in fields that are so distant from each other. I hope that the end of this process will not be the end of our collaboration.

A warm thanks goes to my family, which through their example allowed me to grow in the man I am today. No one would have been a better teacher at life than my parents and my brothers. Our mutual love, support, and trust may sometimes be left unexpressed, but is never given for granted or forgotten.

I want to thank Alessia, my partner, for creating a safe environment for me in which to learn how to be the best version of me, for accepting me at my worst and leading me through the steps of healing and blooming. I hope this is but one of the hundreds of steps of life which we will face together. I hope to one day be able to be a tenth of the man you make me feel.

Thanks to the friends who walked this path with me. I believe life's worth is defined by the stories we can share, the memories we create, and the lives we meet, and you were there through the worst and best times. Thanks to Anna, Lisa, Emiliano, Alessandra, William, Federico, Allegra, Elisa, Beatrice, Riccardo, Fabio, Francesca, Giulia, Giorgia, Leda, Leonardo, Marco, Marilyn, Mauro, Michela, Milagros, Momo, Nicolò, Valeria, Maite.

A special thanks goes to Mauro Vittorio and Dialogue Explore Bond organisation, thanks for being a safe place in our university, for being my greatest pride and challenge, and for pushing me forward.

- *"I am a mosaic of everyone I've ever loved, even for a heartbeat"*

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Introduction

In an era characterized by unprecedented levels of interconnection favoured by the globalization of communication, the internationalization of value chains, and the dissolving of borders, it is increasingly frequent to face the need to cooperate to increase efficiency and effectiveness of economic activities. This shifting has been expressed in *Appunti di fenomenologia del design* (Manzini, 2017) where the author states that the traditional *value chains* have been replaced by the modern '*value webs'* or '*value constellations*', thus showing how the once simple and linear conception of industries is now evolving. In the same work, Manzini describes this evolution as the change from a *solid world*, here intended as simple, operative, and stable, to a *fluid world*, where processes have become unstable, necessarily planned, and strategic.

This evolution and increasing instability call for tools to support proper communication, process monitoring, standardization, and evaluation: it is in this context that GUEST was born. Initially designed for "the process of coaching a PMI developing a new business or launching a startup" (Perboli, 2017), this methodology was conceived to be highly versatile, and since its creation it has been adopted in several projects. Recently, it had its application in SINFONICA, a social innovation project in the field of cooperative, connected, and automated mobility. The new adaptation planned specifically for this instance has been called SI-GUEST, and it will be adopted as a case study in this thesis. Opening to further applications in social innovation contexts, the GUEST methodology needs an in-depth study leading to its adaptation for this broader and different purpose.

This thesis will explore the SI-GUEST proposal, will analyse the specific needs of social innovation projects, and will provide viable solutions for the generalization of GUEST to this complex field. This study will consider multiple approaches, following the ideals of GUEST, taking from management, design, and communication knowledge. It will provide theoretical analysis and tools. The newly developed GUEST methodology will encourage to customize the tools for the needs of specific social innovation projects, allowing efficient and effective communication and process control.

The first chapter will discuss the theoretical basics adopted: the methodology, the several definitions of innovation. Subsequently, the case study and the proposed solution will be analysed in-depth. The third chapter will explore the study of innovation projects and the feasibility of a broader and specific generalization. In chapter four, viable solutions for generalization will be presented and further developed. In conclusion, the newly adapted methodology will be compared with the original GUEST ideals to verify their conservation, and possible further implementations.

1. Theoretical basis

To properly understand the GUEST methodology, we must first analyse the context in which it operates. This chapter will initially cover the framework in which the methodology is usually applied, its definition, phases, and tools. Then, it will move to the definition of social innovation, and how it is currently approached through the design thinking process.

1.1 Multi-Actor Complex Systems

As previously mentioned, the concept of supply chains has been changing with the evolution of globalization, and in the new "*fluid world"* the new "*value webs"* (Manzini, 2017) are represented by Multi-Actor Complex Systems, from now on addressed as "MACS". These systems are characterized by multiple actors, complex interactions, and an adaptive behaviour that require proper governance and communication to avoid exponentially increasing uncertainty and unpredictability. Examples of MACS can be found in several fields such as climate change mitigation, global supply chains, urban planning and development, which require cooperation between governing bodies, companies, users, and thus involving different needs, difficulties and perspectives. Even in projects with a narrower scope, but involving several stakeholders with diverse backgrounds, the need for cooperation tools can be highlighted.

1.2 The GUEST Methodology

To face the issue of cooperation in complex systems, the GUEST methodology was born with the intent of providing an innovative framework for business management by analysing startups and small and medium-sized enterprises (SMEs).

Developed by the ICE Center of the Polytechnic University of Turin by a pool of researchers led by Guido Perboli and Renzo Gentile, this methodology represents a set of conceptual and practical tools used to enable proper communication of challenges, visions, and opportunities between the stakeholders of a MACS. Additionally, it supports process control and monitoring, and the standardization of documentation.

To ease the complexity of these environments, GUEST has been developed to be easily accessible, multi-channel, covering the whole process, and iterative. This has been realized by including simple and understandable tools that can be used even without a professional background in management, that are viable through different medias requiring different levels of information technology, and assisting the clients throughout the phases of the project while allowing the Test phase to be the starting point of a new iteration of the process.

This requires the following study to be multi-approach and accessible, preserving these fundamental ideals of GUEST.

1.3 GUEST Steps and Tools

For the general monitoring of the methodology as a whole the authors suggest adopting the *Kanban technique*, which facilitates the flow of information in the company and process control during its execution. This tool is based on the presence of a shared and visible board where each activity is represented by a standardized post-it, colour coded to represent the phase of the methodology to which it relates. These post-it include information about the activity, the dates in which it started and finished, and the responsible resource. Its position on the board indicates the state of the activity: Backlog queue, To do, Work in Progress, Done, Sent (to the client).

This technique allows to avoid wastes of resources such as progress meetings, and favours communication and collaboration throughout the involved entities, which is the reason for which the tool was apt to its adoption in this methodology. For the same reason, it is suggested that the resource managing this project must have proper communication for optimal results, and this topic will be deeply analysed in the next chapters.

Figure 1 - GUEST Process Kanban Board [Self-work]

In some applications of the methodology a Process Kanban Board could suffice, as it provides the researcher with an overview of each task, activity, and process being performed, planned or completed in every project the entity is managing. With the board included above, a portfolio manager would have a constant overview over the application of GUEST to the whole company. But, in addition to this tool, the methodology strongly suggests that the Project Manager adopts a Project Kanban Board for each ongoing project. This is encouraged to engage in a constant communication with the client, updating them about the progress of the process, and strengthening the idea that the researchers are working continuously and with a solid structure and monitoring.

Project:	Project Manager:	Resources:	Start:	End:	
Phase	Backlog queue	To Do	WIP	Done	Sent
G					
U					
E					
S					
T					

Figure 2 - GUEST Project Kanban Board [Self-work]

The methodology and the tools offered by the methodology are easily presented through the five steps that compose it, which the name "GUEST" is an acronym for: Go, Uniform, Evaluate, Solve, Test.

1.3.1 Go Phase

The word "Go" is used to describe the first contact that the researcher has with the premises, the actors, and the interactions they have within the operation of the MACS.

In this phase, two main tools are adopted: a **standardized questionnaire** and a **value proposition canvas.**

The standardized questionnaire is administered face-to-face by a consultant part of the researching team and has the purpose of gathering general qualitative information about the entity object of the study. It is divided in seven sections, which are meant to get a qualitative evaluation of the organisation/company from the client themselves, which is then compared with research performed by the team through a Likert scale.

GO QUESTIONNAIRE - GENERAL INFORMATION	
Describe your company	
Describe the need fulfilled by your company	
Describe your relevant market	

Figure 3 - Example questions of the questionnaire [Self-work]

The value proposition canvas is a graphical tool designed by Alex Osterwalder and Yves Pigneur meant to draw a general customer profile and what the company has to offer, divided in: product and services, pain relievers and gain creators.

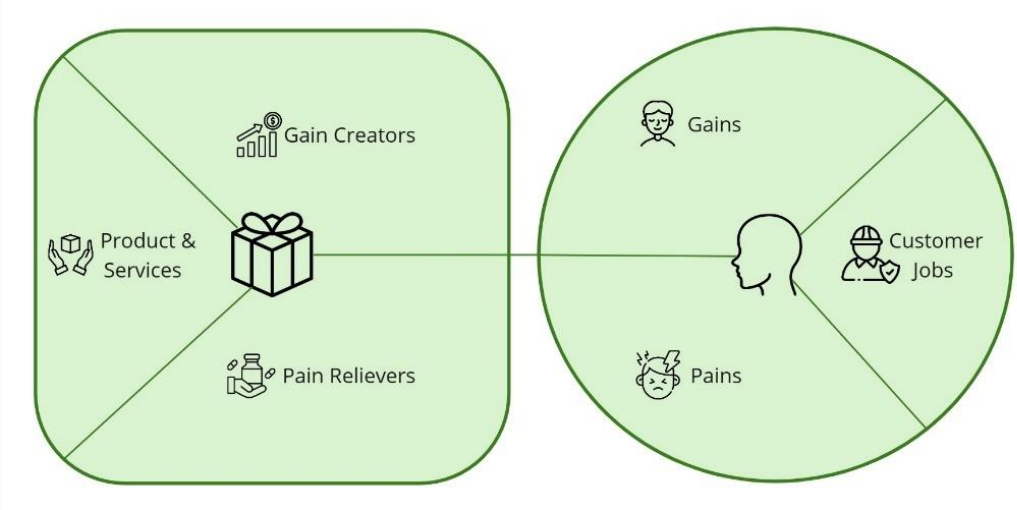

Figure 4 - Value Proposition Canvas [Self-work]

Through this first phase, the research team is able to gather a first qualitative impression of the company, its value proposition, its customers, and structure.

1.3.2 Uniform Phase

This second step's purpose is to go in depth in the information collected and uniform it through a standard format to allow for comparison with other cases, which may also include other iterations of the process within the same entity.

The main tool adopted in this phase, which researchers and the client will build together integrating the information from the Go phase, is the **Business Model Canvas**. This intuitive graphical tool developed by Alexander Osterwalder is often used in the early stages of startups or new businesses to properly focus on the elements which may constitute the business proposal. This model is meant to show the nine key elements through which the company intends to make a profit.

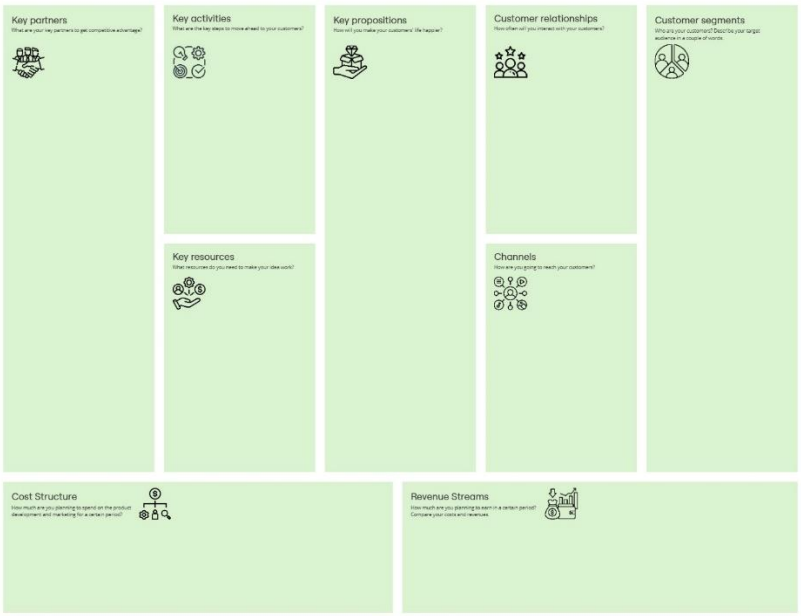

Figure 5 - Business Model Canvas [Self-work]

The data collected through this graphical tool will be adapted and transcribed in the following phases, especially in the Evaluate phase for the creation of the Balanced Scorecard. This phase allows us to complete our qualitative assessment of the company or organisation object of our study, thus allowing for the following steps, which shift the perspective to include the external environment.

1.3.3 Evaluate phase

In a process similar to the "house of quality" typical of quality engineering, the current situation of the company drawn from the Uniform phase is compared to the ideal situation that is to be reached through the collaboration with the researching consultant. This step is the most tools-intensive, adopting four different tools: the SWOT analysis, the Balanced Scorecard, the Social Business Network, and the ICE-Diagram.

The **SWOT analysis** is an analytical tool which has the purpose of presenting in a simple and concise way the internal and external environment in which the company operates, through endogenous (strength and weaknesses) and exogenous (opportunities and threats) factors.

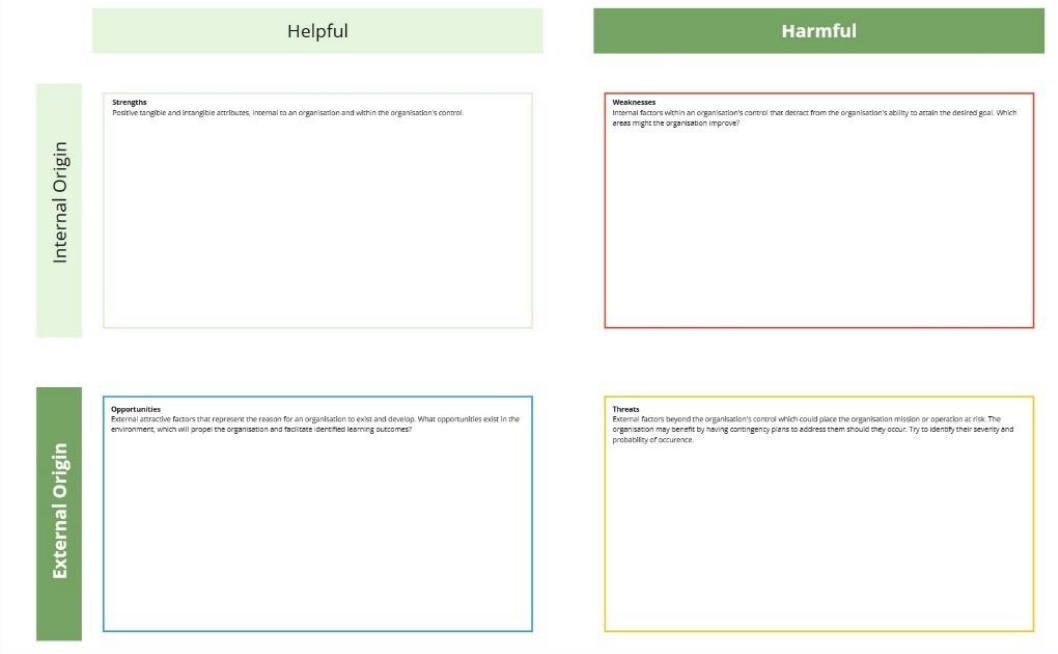

Figure 6 - SWOT Analysis [Self-work]

While this tool can offer a framework for the definition of future strategies, it implies the risk of over-simplifying reality and allowing for subjective selection of actions, and its implementation requires a strong cooperation and effective communication between the involved parties. Because of these risks and issues, the use of this tool is at the discretion of the researcher, but data from this can allow for a better implementation of the ICE-Diagram.

The **Social Business Network (SBN)** can be considered the most important tool for companies in MACS, allowing for a visual representation of the relationships between the entities and elements of the environment in which the object of the study operates. The adoption of this graphical support is strongly related to the definition and characteristics of MACS, allowing to carefully consider the interconnectedness of entities and elements and their responsiveness. While considering the primary direct interactions, this tool uses nodes to represent type and numerosity of actors, and arches for type and power of their connections. This provides the researchers with an eagle-eye view of the whole network representing the MACS object of the study.

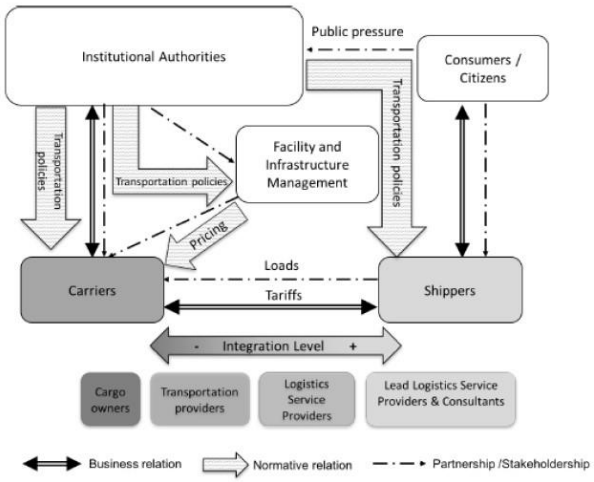

Figure 7 - SBN Example (Perboli et Al., 2018)

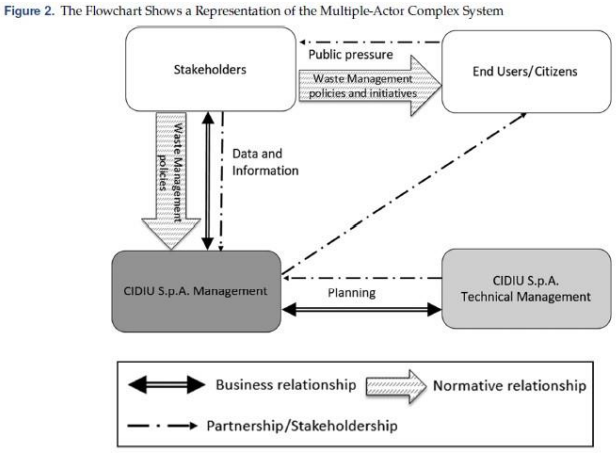

Figure 8 - SBN Example (Fadda et Al., 2018)

Designed by Robert Kaplan and David Norton, the **Balanced Scorecard** [Figure 6] is a tool which allows for an analysis of the alignment of the company's daily operations with its vision and strategic intent. It can be considered a comprehensive management system, which not only considers the financial perspective, but four perspectives covering a holistic view of the company. The process to create the scorecard is thoroughly described in the GUEST manual, and it has been summarized in the following four steps:

1. *Define the Vision and Strategic Intent*
2. *Identify strategic objectives and the variables affecting them starting from the content of the BMC*
3. *Build a strategic map & simplify it based on Vision and Strategic Intent*
4. *Identify performance measures and create the Balanced Scorecard* (Perboli, 2017)

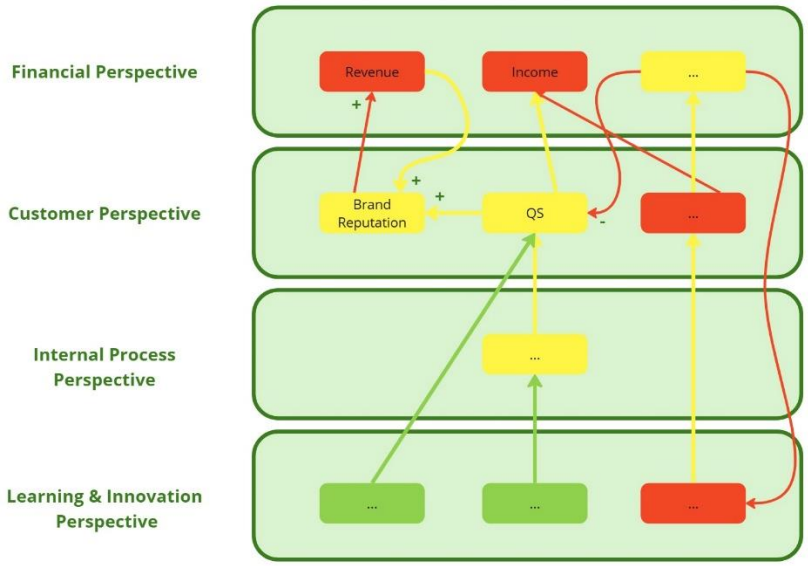

Figure 9 - Strategic Map [Self-work]

Through these four steps, data from the previous phases of the methodology (especially from the BCM) is used to fill in the graphical tool here reported, which is then translated into four tables (one for each perspective) listing the objectives, the variables that can influence them, and the Key Performance Indicators to be considered to measure the effort towards these objectives.

PERSPECTIVE _____		
Objective 1	Variable 1	Performance indicators
	Variable 2	Performance indicators
Objective 2	Variable 1	Performance indicators
	Variable 1	Performance indicators
Objective 3	Variable 2	Performance indicators
	Variable 1	Performance indicators
Objective 4	Variable 1	Performance indicators
	Variable 2	Performance indicators

Figure 10 - Balanced Scorecard Table [Self-work]

The last tool is the **ICE-Diagram.** Through this tool, data from the SWOT Analysis is used to hypothesize actions or solutions to take advantage of opportunities or solve problems. In addition, it offers an analysis of possible KPIs to measure them, the economic resources necessary to implement the solutions, and their priority. These results are listed through three

columns reflecting the three steps of the process, referred to as “Identify, Control, and Evaluate” (Perboli, 2017). In this diagram, the priority of items can be defined through a colour code meant to be immediately recognizable and represent guidelines for the studied company: red for high priority, orange for medium priority, green for low priority. The developed ICE-Diagram will then be reviewed, and solutions will be selected, thus creating the Executive ICE-Diagram, which will then be adopted for the company’s strategy and operations.

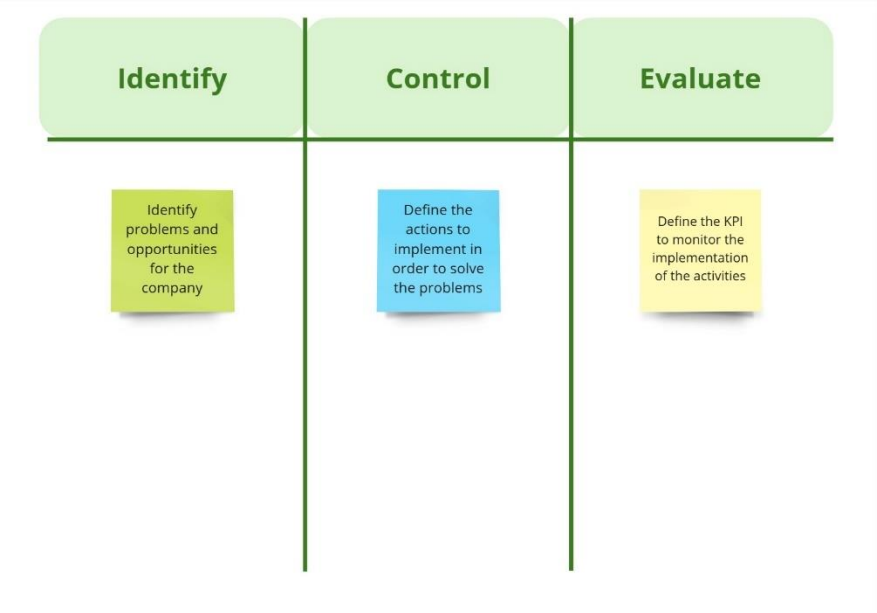

Figure 11 - ICE-Diagram template [Self-work]

Through these four tools, the Evaluate phase will provide the researchers with an overview of the environment in which the company operates, its relationship with other entities, its strategy and its alignment with the company’s vision, and the possible future strategies and their requirements.

1.3.4 Solve phase

The purpose of the Solve phase is to present to the company or the entity the developed solutions, their requirements, and priority. This can be done through two main tools: the Executive ICE-Diagram, previously mentioned, and the Solution Canvas.

The **Executive ICE-Diagram** is a selection of the highest priority solutions identified in the Evaluate phase, considering also the KPIs to be measured to identify the most interesting and relevant ones. To these, the cash flow is added in order to constantly monitor the company’s resources and possibilities of investment in new solutions.

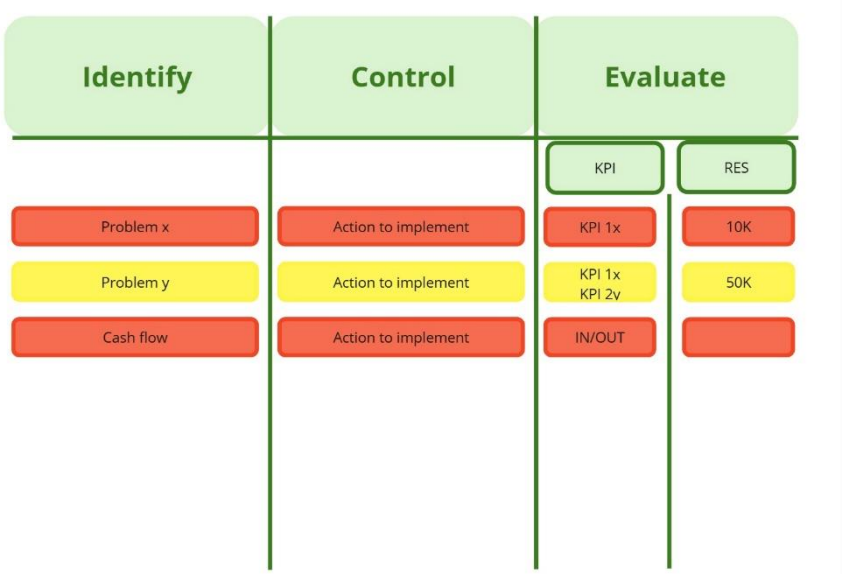

Figure 12 - Executive ICE-Diagram [Self-work]

The **Solution Canvas** is the transposition of the BMC from the initial steps to their direct consequences. As stated in the GUEST manual, *"If the BMC is the company 'as is', the SC is the company 'to be'"* (Perboli, 2017). These tools allow the customer to choose which solutions to focus on and provide guidelines for their monitoring throughout their implementation.

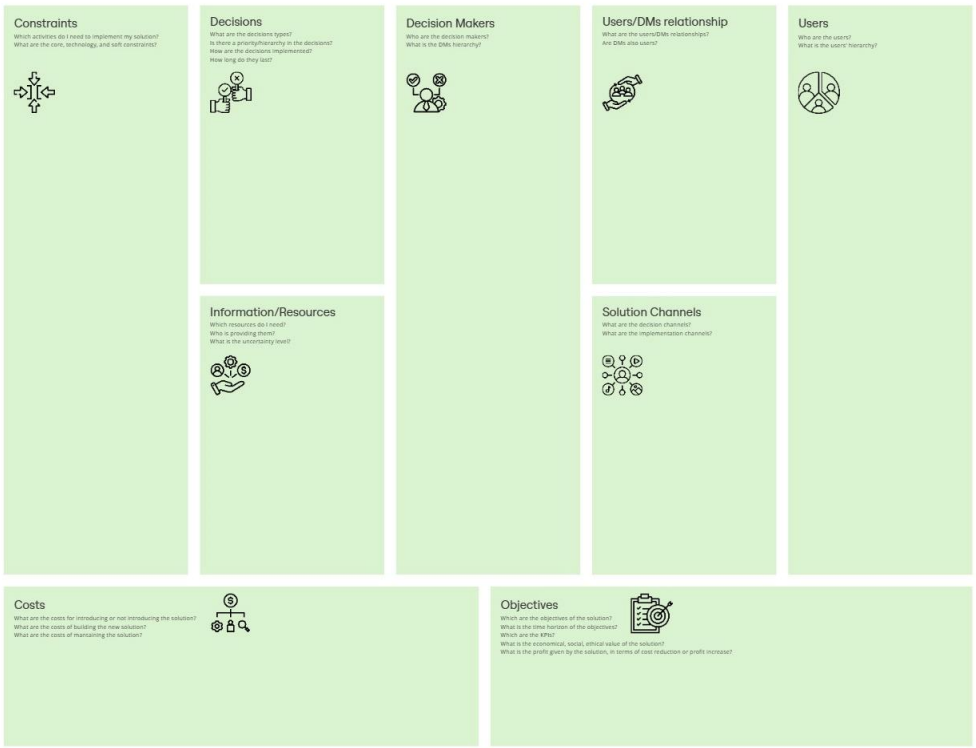

Figure 13 - Solution Canvas [Self-work]

1.3.5 Test phase

During this phase, the effects of the previously proposed solutions are analysed, placing a strong focus on the unforeseen critical issues in the medium and long term and on the interferences on other activities. These effects are studied through three different perspectives: "Operative, Customer Satisfaction and Administrative" (Perboli & Gentile, 2015).

After presenting the solutions and analysing the implementation, the GUEST Methodology strongly exhorts the reiteration of the previous phases to foster continuous improvement, adopting the Test phase as the first of a new cycle of GUEST.

1.4 Innovation, Social innovation projects, and design

Now that the GUEST methodology has been described, it can be denoted how several of the chosen tools are apt to a business context, including customers, an economic value creation objective, a cash flow to be monitored. What would be required to use this method in a different context, in which the purpose is not economical, but aimed at meeting social needs?

According to Hernandez and Cormican (2016), "Social innovation projects have unique characteristics and are inherently different to typical industrial-oriented projects which must be considered by project managers.". Thus, the same GUEST methodology cannot be adopted for this context without an adaptation. This part of the chapter will introduce readers to the concept of innovation, in particular social innovation, and will then move to the tools that are commonly adopted to foster innovation.

1.4.1 Definition of Social Innovation

To set proper boundaries to the scope of this thesis, it is now necessary to define what is considered social innovation. But to find a definite and clear definition which properly encapsulates the totality of what the field of social innovation represents today may be a challenge which cannot be solved.

Social innovation, by the words of Ezio Manzini in "Making Things Happen: Social Innovation and Design" (2014), "has always been and will continue to be a normal component of every possible society […] thus has always existed" but has been in the focus of intensive new studies and financing in the years after 2009. In that year, in fact, the Bureau of European Policy Advisers (BEPA) performed a workshop with European stakeholders to define this growing and important field, considering innovative experiments, and debating possible financing of projects in this context. But how has the definition of social innovation been faced, and how has it evolved since then?

In the document *Empowering people, driving change – Social Innovation in the European Union* (European Union, 2010), which is brought as a support document to the webpage relative to social innovation in the European Commission's website, a clear definition seems to rise. After introducing the literature available in 2009 about social innovation and affirming that "A review of the recent literature points to a highly diversified set of disciplines, drawn from economics […], business studies, technology and innovation, social

anthropology, sociology and politics […]" the document specifies more in detail the definitions studied, judging that: "the suggestion made in the study commissioned for this report is short and universal: Social innovations are innovations that are social in both their ends and their means. It is complemented by the following: Specifically, we define social innovations as new ideas (products, services, and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations. In other words, they are innovations that are not only good for society but also enhance society's capacity to act."

This study focuses as well on characteristics of this new concept, assessing that not only the results are to be sought, but that the process itself holds a strong importance as social innovation is "the process of social interactions between individuals to reach certain outcomes", and additionally, it is specified that the results to be sought for are not only services or solutions, but also "new forms of organization and interactions to tackle social issues". When dealing with a categorization of social innovations, the document provides three approaches which can be considered and are not mutually exclusive: the first focused on social demands which involve vulnerable categories and which are not addressed by the market or existing institutions; the second which benefits society as a whole blending the social and economic value creation; and the third which aims at reforming society so that well-being results in learning and empowerment.

The second supporting document *This is European Social Innovation* (European Union, 2010) displays ten projects judged as the most innovative in different fields and countries in Europe which have been selected among over a hundred projects from twenty-three countries, thus showing the greatly increasing interest in social innovation projects. But even this document does not indicate a clear definition, assessing that "around the world many organisations offer different definitions of what it is, who does it, and how they do it. Within Europe, the lack of clarity of the concept impacts different regions and different industries in different ways".

In the third supporting document *Social Innovation – A Decade of Changes* (European Union, 2014), the challenges of finding a clear definition are clarified, and a set of necessary characteristics is identified: "it was finally agreed that rather than reduce a still-developing idea to an overly narrow definition, social entrepreneurship should be defined on the basis of three main characteristics: the social objective was the reason for developing innovative activities; profits were mainly invested in achieving this social objective; and the organisation and ownership used participatory principles aiming at social justice."

Progressing in the evolution of social innovation, we will consider the creation of Ezio Manzini "Making Things Happen: Social Innovation and Design" (2014), in which the author shares that "Social innovation is a process of change emerging from the creative re-combination of existing assets […], the aim of which is to achieve socially recognized goals in a new way". Manzini affirms that this definition is necessarily broad, as with the evolving of society, the concept of social innovation changes as well, the challenges to face are different, and the definition cannot be anything else than broad. He offers two categorizations of social innovations, which are divided into incremental versus radical, and top-down versus bottom-up. The first distinction considers innovations that lie "within the

range of existing ways of thinking and doing" or outside of it, while the second refers to the drivers of change, being people and communities or policy makers and experts.

Two years later, in their research, Hernandez and Cormican (2016) condense several definitions of "Innovation", quoting examples from Mehmood and Parra (2013), Young (2011), Moulaert et al. (2013). While attempting to look for a unified definition of social innovation, Hernandez and Cormican find that "the extant academic literature provides a diverse and fragmented array of definitions", thus requiring them to not focus on a single result, but rather grouping social innovation typologies in four macro-categories. The identified approaches are problem-solving, service-oriented, evolving, and process, with the difference laying in the focus of the definition.

Problem-solving definitions tend to describe social innovation as the answer to underlying problems in civil society, unsustainable practices, or unrealized business potentials of social change. The Service-oriented approach includes definitions which are focused mainly on meeting social needs through the offer of innovative services and new ideas. The Evolving definitions see innovation as changes in society, evolution coming from the revisitation of ethical norms, normative and regulative structures of the society. In this view, social innovation increases the economic and social performance of society. Lastly, the Process approach emphasizes social innovation as a complete change of "basic routines, resource and authority flows or beliefs of any social system" (Hernandez & Cormican, 2016).

As can be denoted by the literature, the concept of social innovation can be characterized through multiple definitions, approaches, by assessing what is not part of this field, or trying to categorize social innovation projects, but the authors along the years seem to agree on one consideration: to encapsulate the evolving concept of social innovation in a clear and concise definition is a challenge which may be even counterproductive to face, as the multifaceted reality of this concept has to be considered in its totality. It is necessary to "Capitalize on the diversity" (European Union, 2010).

1.4.2 Design for Social Innovation

The implicit complexity of the field of social innovation could be seen as a risk or a key challenge, and it is indeed described as such in the study of Hernandez and Cormican (2016) where the authors quote that: "Social innovation projects are not framed or delimited yet". This key challenge is one of six identified which may hinder proper management these projects, and several differences between the typical industrial-oriented and the social field were identified. The motivations for the second kind of projects tend to be more intrinsic, the key agents being coalitions and networks, but the most important difference and key challenge comes when dealing with metrics and tools: "There is an absence of an integrative framework for social innovation approaches […] the very measures of success may be contested, as well as the tools for achieving results […] measurement is more qualitative".

In such a complex field, it is needed to find tools that could then be adopted, that are versatile enough to accommodate the fast evolution of innovation, being available to anyone with different backgrounds and without a professional education for this specific field.

A viable idea could be found in the article for Harvard Business Review "Design Thinking", in which the author (Tim Brown, 2008) describes the idea of design thinking as "a methodology that imbues the full spectrum of innovation activities with a human-centered

design Ethos". Instead of facing the challenge of managing innovation starting by the tools, creating the process around those, and then finding the correct professional figure to adopt it, Brown starts his argumentation from the personality profile of a Design Thinker, describing the key characteristics: empathy, integrative thinking, optimism, experimentalism, collaboration. The process of innovation described by the author is everything but linear, and although it is characterized by three main phases (Inspiration, Ideation, Implementation), these are broken down into multiple intertwined steps which also encourage to consider different perspectives from the start, including engineering, marketing, and such.

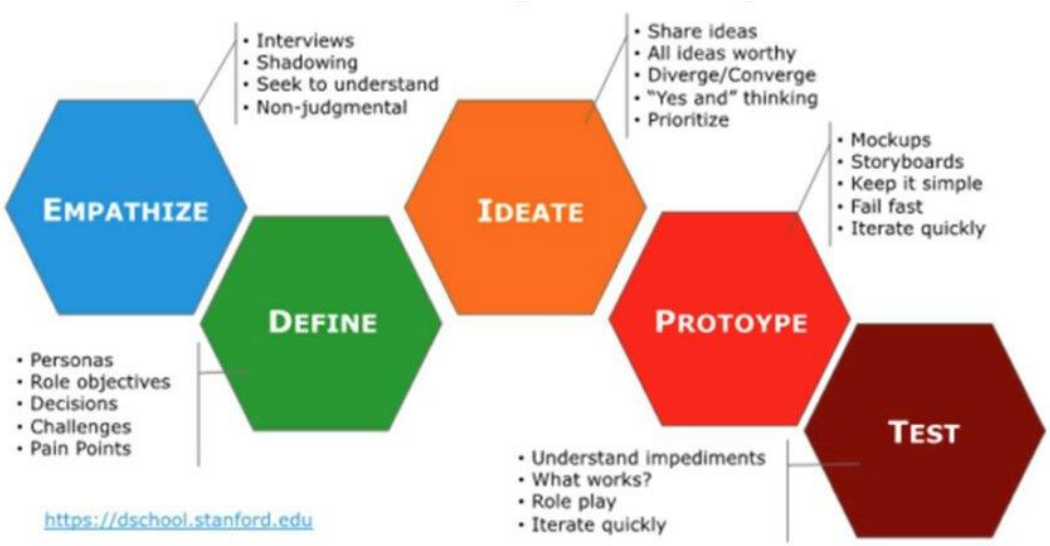

Figure 14 - D.School's Design Thinking Process (https://dschool.stanford.edu)

The method has then been reworked and developed by multiple sources, but we want to focus in particular on the process described in *An Introduction to Design Thinking: Process Guide* (d.school, 2010), which is composed by five steps: Empathize, Define, Ideate, Prototype, Test; reiteration of this process is strongly encouraged. The resemblance between these phases and the steps described by the GUEST methodology suggests that, from a process perspective, the two methods could be compared and interchangeable, even if the specific tools may differ greatly. Several similarities in the basic values can be identified as well: the purpose of easing collaboration and cooperation in a multi-actor system towards an objective, the willingness to provide a framework available to anyone without a professional background, the focus on identifying multiple solutions and start a dialogue with the client, and several others.

	GUEST	DESIGN THINKING PROCESS	
GO	Go on site, get a first qualitative evaluation of the entity by the client. Initiate collecting information, get a first impression of the customers' profile	Observe, engage, watch and listen, to understand the way they do things and why, their physical and emotional needs, how they think about the world, and what is meaningful to them.	EMPATHIZE
UNIFORM	Standardize and uniform the gathered data to allow for comparison with other processes/projects.	Understand your user, synthetize a list of needs, work to express insights. Craft a problem statement, Define is sensemaking.	DEFINE
EVALUATE	Assess the current situation, the ideal to be reached, and identify a list of opportunities or problems to be exploited or solved, as well as KPIs to measure.	Concentrate on idea generation by combining rational thoughts with imagination.	IDEATE
SOLVE	Suggest to the client different strategies to implement the identified solutions.	Iteratively build artifacts/prototypes to get closer to the solution.	PROTOTYPE
TEST	Follow up on actions, implementation and evaluation, final dissemination of results.	Solicit feedback by users about multiple prototypes, possibly testing them in situ (ex. giving physical prototypes to users to bring with them)	TEST
ITERATION	Iterate the whole process by using the Test phase as the start of the new cycle.	Iterate both the entire cycle or inside phases if needed. Every iteration will narrow the scope from broader concept to details.	ITERATION

Figure 15 - GUEST and design thinking process comparison [Self-work]

Indeed, an attempt to concretize the Design Thinking process through the rules of method engineering has been performed in “Understanding Design Thinking: A process model based on method engineering” (Thoring&Muller, 2011), in which the steps taken from a similar framework (HPI D-School, 2009) have been analysed and rendered through a process model. Although this graphical representation may be useful to adapt the design thinking process to innovation in R&D departments of companies, it may be an additional attempt to “overly-simplify” and “over-structure” a process that is implicitly changing and flexible. According to d.school (2010), “For simplicity, the process is articulated here as a linear progression, but design challenges can be taken on by using the design modes in various orders”. This allows for potentially infinite different frameworks, which cannot be accurately represented through a single process model, which may in this case narrow excessively the potential of this method and process.

Moreover, the same document affirms that: “ultimately you will make the process your own and adapt it to your style and your work. Hone your own process that works for you. Most importantly, as you continue to practice innovation you take on a designerly mindset that permeates the way you work, regardless of what process you use.”. With this in mind, the next chapter will explore the existing adaptation of the GUEST methodology to a social innovation context, and how the chosen tools and process can be considered apt to the context in which it is applied.

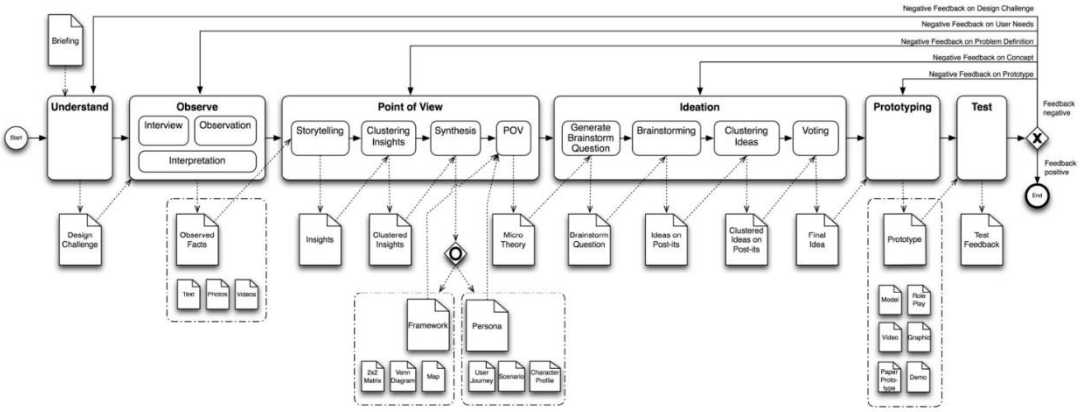

Figure 16 - Suggested process model of design thinking process (Thoring&Muller, 2011)

2. SINFONICA: A case study

With the theoretical background our thesis is based on being clarified in the first chapter, this second part will analyse the case-study for the application of the GUEST methodology to a context of social innovation: the SINFONICA project will be presented, then the tailored GUEST-SI will be reported and discussed, drawing connections with the previous chapter.

2.1 Project SINFONICA

Following the growing attention to social innovation in the European Union sparking from the BEPA workshop in 2009, other actions were accomplished with the Innovation Union Initiative in 2010, and the Social Investment Package in 2013. The Commission has been supporting innovation through easing networking, organizing competitions, improving the ecosystem, incubating, exploring, disseminating results and impact, but most importantly through funding opportunities. Horizon Europe is the research and innovation funding programme that the European Commission has launched, with a budget of over 90 billion euros covering the years between 2021 and 2027: through calls, projects that are considered meritorious, innovative, and with a scale-up potential, are funded. Among those that have been funded and are now in progress, our case study will be the project SINFONICA.

Born in the cradle of Cooperative Intelligent Transport Systems (C-ITS), SINFONICA is a social innovation project which aims at easing the acceptance of inclusive Cooperative, Connected and Automated Mobility (CCAM) deployments by future users. This objective is to be achieved through a bottom-up approach in which four Groups of Interest in four countries will gather users' data, which will then be analysed with the support of Social Sciences and Humanities (SSH), and finally organized in knowledge maps. These, with the support of innovative tools developed for this specific purpose, will be made available to stakeholders and decision makers.

The following sub-chapters will go in detail in the project's structure, the context of CCAM, its innovative and social aspects, and its categorisation through the previously mentioned definitions of social innovation.

2.1.1 The Project's Structure

The project started in September 2022 and is expected to end in August 2025, has received a funding of more than three million euros from Horizon Europe, and includes "14 partners from Industry, Operator, Research, Academia, Consultancy and Governance sectors […] with partners in Belgium, France, Germany, Greece, Italy, The Netherlands and the United Kingdom" (UNIMORE, 2022). The process will include users, especially included in a list of vulnerable categories which may involve mobility issues, and stakeholders, spacing from service providers to government bodies, to industry, NGOs and representative bodies and universities and knowledge institutions. The number of actors, connections, and their implicit complexity and responsiveness fully encloses this environment in the definition of MACS.

The project has four main strategic objectives: creating a knowledge base about users' needs, openness, and expectations about CCAM solutions, with a special focus on people with

mobility challenges; enabling socially inclusive decisions on future CCAM solutions by stakeholders; allow citizens and stakeholders to co-create and co-design future inclusive CCAM solutions; and provide guidelines for long-term upscaling of the developed solutions. These objectives are to be reached through the creation of four Living Labs in Greece, Netherlands, Germany, and United Kingdom, where data will be gathered from users and stakeholders through a co-creation methodology. These four contexts are called throughout the process "Groups of Interest", abbreviated in GOI. In the sixth and last phase of the project, the stakeholders will instead constitute the Groups of Followers.

2.1.2 CCAM and Elements of social innovation

The first elements of innovation of the project can be denoted in the context in which it was born and funded: SINFONICA is a Horizon Europe funded project, which settles it in the field of research and innovation. Especially, the project is aimed at researching, assessing, and easing the acceptance of future users of CCAM solutions, context which we will now explain briefly.

The Cooperative, Connected, and Automated Mobility (CCAM) field was born in 2016, when the European Union released the "COM (2016) 766 final" communication, which introduced the vision of deploying Cooperative Intelligent Transport Systems (C-ITS) integrated with CCAM and Mobility as a Service across Europe. This interest led, in 2020, to the creation of the CCAM Partnership, which is coordinating private and public efforts in the field in the Horizon Europe projects. As for other aforementioned concepts, a unified definition of CCAM was not developed by Europe, thus not narrowing the concept and allowing for its complete development. A practical, empirical definition could be given by affirming that CCAM is based on the exploitation of connectivity between vehicles, mobile phones, and infrastructure to increase safety, inclusiveness, and automation of mobility. Solution such as on-demand automated shuttling would for example increase circularity and sustainability of the automotive industry, allowing for reduction of use and sharing of resources, removing the need of ownership of vehicles by the users.

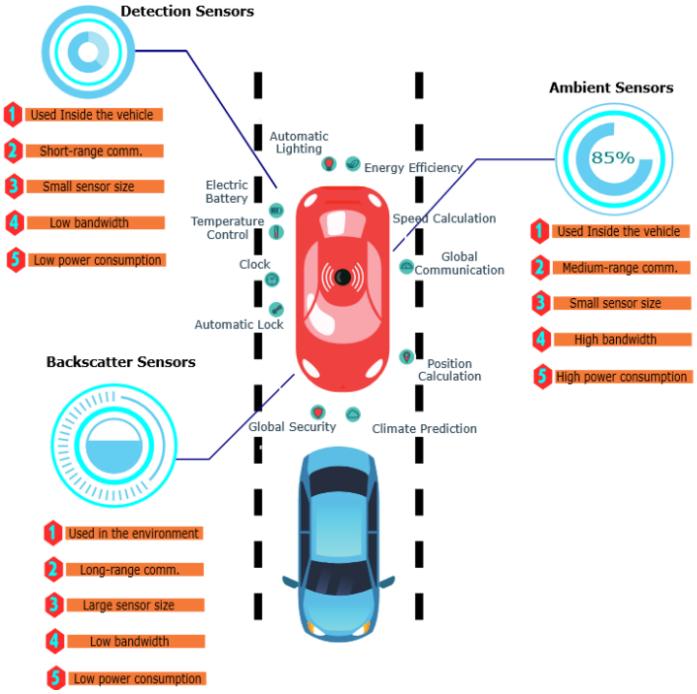

Figure 17 - Sensors and their characteristics relatively to CCAM (Jameel et al., 2019)

The innovative field in which the project operates and its particular focus on meeting needs through the offer of new ideas and products, keeping in high regard people with mobility challenges, is well-described by this excerpt of *MS3 Creation and Organization of Group of Interest* (SINFONICA, 30/06/2023): "within the SINFONICA framework, the gaps and unmet needs around CCAM and C-ITS will be identified, and there will be proposed a wide range of innovative and transferable solutions, including ICT-enabled elements, ensuring accessible, inclusive, and equitable conditions for all and especially people with mobility challenges".

In addition to its core objectives, its methodology can be considered highly typical of social innovation: SINFONICA adopts a bottom-up human-centred co-creation method. It can be considered bottom-up as "The core of the SINFONICA framework […] are the mobility needs of European citizens" (SINFONICA, 23/02/2023), the inputs from users and the public are the leading data during the project's process; for the same reason, the process is labelled as human-centred: intensive efforts are put towards the review of literature on the psychological needs and human-centred enablers related to the project, as can be denoted by *Deliverable 1.1 Mobility Needs of European Citizens* (SINFONICA, 28/02/2023) and *Deliverable 1.3 Understanding the Gap of CCAM Solutions deployment* (SINFONICA, 02/05/2023).

Regarding the co-creation, also reported in *D1.2 CCAM vocabulary and stakeholders needs- and requirements for CCAM solutions* (SINFONICA, 15/03/2023) as a synonym of "Participation process", is described as "the involvement of interested or affected citizens in (technical) developments and decision-making. Common approaches include public meetings, publishing websites, focus groups, surveys, or the formation of advisory

committees “. Particular attention is given to the co-creation framework adopted in SINFONICA, and even the intended audience of *MS3 – Creation and Organization of group of interest* (SINFONICA, 22/06/2023) is indicated as including “all those who are interested in studying and reproducing the co-creation framework adopted in SINFONICA and who intend to take inspiration for the categorization and segmentation of people with mobility challenges, citizens and stakeholders”. The co-creation, co-design, or co-definition process has its roots in North America, in the early 1970s, and has been adapted to numerous frameworks and definitions, but a particular fit can be found between the ideals of social innovation and the participatory design typical of Scandinavia, of which the main characteristics are described as “deep commitments to democracy and democratisation; discussions of values in design and imagined futures; and how conflict and contradictions are regarded as resources in design” (Gregory J., 2003). In this context, the differences and possible conflicts between the different actors of MACS are regarded as added value: different points of views lead to a wider perspective on the complex challenge to be faced.

2.1.3 In the definition of social innovation

This sub-chapter will briefly check the coherence of the SINFONICA project with the definitions of social innovation that were presented and quoted during the first chapter, to then proceed with the second part of this chapter, analysing the GUEST-SI tailored for it.

The first definition proposed by the European Union quoted, in synthesis: “We define social innovations as new ideas (products, services and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations”. Analysing SINFONICA under these criteria, it can be easily noticed that: the project is promoting new ideas, which are the CCAM solutions, the databases of users’ needs, and the Knowledge Map Explorer; these ideas are meant to meet the social needs of users with mobility challenges, which have been analysed from past literature and verified through the groups of interest; the solutions to be developed are meant to be more effective than the previous, as the study of needs explicitly focuses on the gaps in the previous literature and products; lastly, the project creates four points of contact between the users, the industry, the government, and other stakeholders, thus forming new collaborations and social relationships. Of the three approaches presented in the document, although SINFONICA presents its objectives as mainly concerning unmet social needs (thus hinting at the first approach), the availability of the gathered knowledge to decision makers in the industry will also allow value creation in the industry in the field, thus also including the second approach.

Following with the third document proposed during the first chapter, the definition that can be found affirms that “social entrepreneurship should be defined on the basis of three main characteristics: the social objective was the reason for developing innovative activities; profits were mainly invested in achieving this social objective; and the organisation and ownership used participatory principles aiming at social justice”. Assessing SINFONICA for these three requirements, it is clear that the majority of profits were invested in the gathering, analysis and presentation of knowledge and thus was aimed at the social objective, and that participatory principles were adopted during the different phases, sparking a continuous dialogue between users and stakeholders through the Groups of Interest and the Groups of Followers. Differently, it would be complex and impractical to verify if “the social

objective was the reason for developing innovative activities". The scope of the project is definitely aimed at providing decision makers with new knowledge for the deployment of sustainable new CCAM solutions easing the mobility challenges of users, but the "reason" may be too subjective and difficult to assess: if the project in the long run will also result in profits for the companies which collaborated with SINFONICA, could that lead to doubts about the "reason" for the project? It may be more practical and direct to assess the definition of social innovation by verifying if the "purpose/scope" of the project is the reason to develop innovative activities, thus making the "reason" irrelevant as long as the results lead to innovative and sustainable solutions.

Our third definition, coming from Manzini, is: "Social innovation is a process of change emerging from the creative re-combination of existing assets […], the aim of which is to achieve socially recognized goals in a new way". SINFONICA and in general CCAM re-combinates connectivity, infrastructure, and automotive characteristics in a new network, aiming at solving socially recognized mobility issues with never previously proposed solutions. Regarding the categorization proposed by the author, the project can be considered incremental, as it is building over the existing frameworks and knowledge, and top-down, as even if the information flow starts from users to then lead to changes in the future of CCAM, the spark to start the project came from the consortium which applied to the call from Horizon Europe, led by UNIMORE.

Lastly, by the report of Hernandez and Cormican, SINFONICA can be considered part of the increasing wave of problem-solving projects, aiming at "how individuals, groups and communities take action in response to the problems of unsustainable practices and unsatisfied social needs while focusing on the challenges of environmental degradation and climate change" (Hernandez & Cormican, 2016).

2.2. Tailored GUEST-SI

In such an innovation-intensive project, in which the true core objective is to ease the introduction of innovative policies, it is needed to have a solid, reliable, and effective governance of innovation management. For this purpose, the Polytechnic of Turin participated in the project through one of the creators of the GUEST methodology and his collaborators: Perboli Guido, Musso Stefano and Merlo Francesca, supervisor of this thesis. The team cooperated with the consortium in the development of ad adaptation of the method apt to the particular environment of SINFONICA, which has been called GUEST-SI. Its development and structure are described in D7.3 – Innovation Management (Perboli et al., 17/11/2022). This sub-chapter will briefly synthetise the choices made for the adaptation, the identified tools, and finally comments and possible improvements.

2.2.1 The tailored methodology

In the context of SINFONICA, the MACS that GUEST is going to operate on has to be identified: we previously described the steps and tools of the methodology referring to a company or organization considered as the "client", and then proceeded to study their customers, value proposition, environment (and market), assess their current position and their ideal based on their value proposition and endogenous and exogenous factors, and finally present solutions. In this new and different field, which is social innovation, what

should be regarded as the client? For the application of GUEST in this project, the object of study to be considered is the consortium and the project as a whole, but although in the original explanation of the project the five steps are adopted to assess the current situation of the client, its environment and possible solutions to exploit opportunities and solve problems, this is not what the methodology is used for in this context. GUEST is adopted not to find opportunities for the consortium, but the client appears to be "shifting" along the phases.

The GO phase has, in the original methodology, the objective of having a first contact with the client to qualitatively assess the current situation through a questionnaire that is filled out by both the client and the researcher. In the context of SINFONICA, the client to be considered in this step are the users and the stakeholders. The gathering of this information is managed by work package one, that works for the "identification of the needs and requirements of potential stakeholders and final users, as well as the definition of the gaps that CCAM-based products and services are asked to fill" (Gentile et al., 2022). This data, together with the responses of the Groups of Interests gathered by work package three, are concretized in the Actor ID Card. This tool, which substitutes the Value Proposition Canvas, can better represent the different segments of the market, their pains and gains, and respects the core concept that the methodology has to respect: the complementarity. By adapting GUEST to the context of SINFONICA and not repeating analysis that are already performed by other work packages, resources are not wasted, and the chosen tools integrate the information included in the deliverables disseminated by the project, thus optimizing the results of this cooperation.

Actor	Contact channels
Market segment or specific partner, client or customer, user, stakeholder)	How I am in contact with the actor
Actor type (User/Stakeholder)	
Actor Description	
Social-economic stratification with quantification	
Gender	
Age	
Geolocalization	
Salary	
Actor situation (Our assessment of the problems and current situation of our actor)	
Jobs (What is our actor trying to achieve and what actions do they take to do that)	
Pains (current downsides to their jobs)	Gains (current benefits of their jobs)

Figure 18 - Actor ID Card [Self-work]

The UNIFORM phase has the purpose "To deepen and consolidate the information about the company collected during the Go phase" (Perboli, 2017) through the versatile tool of the Business Model Canvas. In SINFONICA, if the client to be considered was the same as

the first step, the completion of a Business Model Canvas for all the involved stakeholders and users would be impractical. Instead, the focus shifts from the stakeholders to the possible innovation solutions for the future of CCAM during this step. In fact, part of the EVALUATE phase is anticipated as GUEST-SI requires to create the Social Business Network and adopts the new tool of the Value Ring, which represents each stakeholders' importance and influence along the time, to represent the actors and their interactions for each of the proposed new CCAM innovative solutions. After this, a business model canvas is created for the different users' groups.

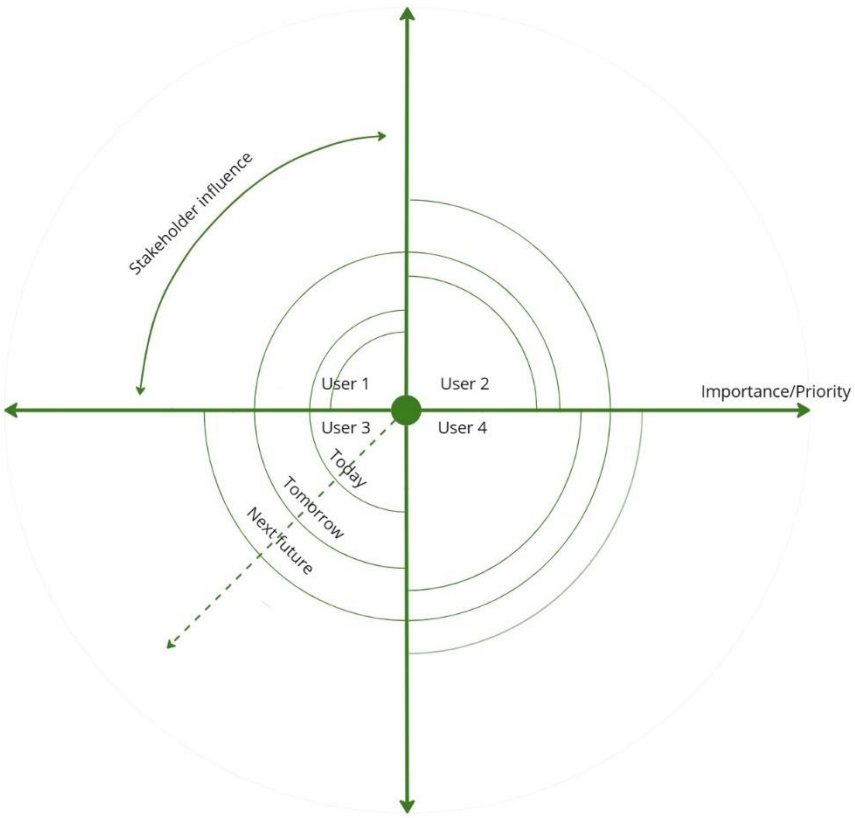

Figure 19 - Value Ring template [Self-work]

In a business context, the EVALUATE phase would be used to describe the ideal situation of the company through the transcription of data gathered in the previous steps inside the Balanced Scorecard and ICE-diagram, describing the current situation as well through the SWOT Analysis and the Social Business Network. In SINFONICA, as previously mentioned, part of this phase is anticipated to the UNIFORM step. The remaining purposes are not described through the adoption of a tool, but it is indicated that it "has the aim to define the innovation strategic path, intended as the actions to implement to actually develop the solutions, as well as a timeline for the development and a set of KPIs to monitor the implementation" (Perboli et al., 2022), which implies a structure similar to the ICE-diagram, where the identified opportunities are the innovative CCAM solutions, the control provides

the actions to be implemented to perform the deployment of the solutions, and the evaluate part describes the timeline, cost and KPIs for the realization.

The SOLVE phase is originally meant to show the client the developed solutions in synthesis to allow for informed future decision-making, through the use of the Executive ICE-diagram and the Solution Canvas. This concept is well-preserved in this social innovation project, as GUEST-SI in this phase plans to reach the actual implementation of the Knowledge Map Explorer, which is meant to be an innovative tool with the specific purpose of allowing decision-makers to access the gathered information in a structured, simple and interactive way.

The TEST phase is the core of the iteration principle of GUEST, and in SINFONICA this idea is explored through a follow-up testing of the innovative CCAM solutions with ten stakeholders in different countries and with different expertise. This will also allow to keep the dialogue between stakeholders going, increasing the sustainability of SINFONICA's results.

2.2.2. Comments, possible improvements

As described by the previous section, the tools identified by the original GUEST methodology have been greatly changed in the GUEST-SI, while the structure has been kept similar. It could be argued that the shift of part of the EVALUATION phase could be avoided, as the phase to which activities are attributed to seems to be arbitrary. It must be considered, though, that partners that are part of the consortium have access to more information than what is available from the public deliverables, and the aforementioned choices could be due to time constraints, to similarities in the resources or work packages, or other connections available to internal contributors.

The shift of the perspective regarding the "client" from the stakeholders to the innovative solutions to the CCAM environment, allows for the customization of the methodology to a variety of different contexts and has to be considered as a strength for the future adaptability of GUEST. The lack of specific tools identified for the last two phases could be argued against, but it allows for informed choices taken by the people in charge later during the project, suiting every possible implementation of the Knowledge Map Explorer and of the testing of the solutions. Regarding the monitoring tools, a simple Gantt chart was adopted, whereas in the original GUEST the Kanban method is highly suggested. In the consideration of the choices taken for this adaptation, the economical availability linked to the European Horizon projects has to be considered.

Considering how the GUEST methodology has been modified to adapt to this project, the next chapter will consider the feasibility of an adaptation of the methodology to a wider scope, which is to the whole field of social innovation, which is to be considered the core research question of this thesis.

3. Generalization Feasibility study

The aim with which this thesis was started was to adapt the existing GUEST methodology not to a specific project, as has been done with GUEST-SI and SINFONICA, but to a general context of social innovation, thus creating a versatile and socially focused version of the methodology. This objective was to be reached through the choice of tools and best practices from the existing project management knowledge. Before proceeding with this step, though, it is needed to address the feasibility of such a generalization, considering the definitions and the case study included in the previous sections.

This chapter will describe the ideal adaptation of the GUEST methodology, then it will build up on considerations from the social innovation definitions and characteristics of the SINFONICA project, as well as pre-existing literature from design and management practices, to describe how it would be impractical, inefficient and suboptimal to select a short list of tools and practices to cover the whole social innovation context. This obstacle will not be left without a solution, though, and a proposal for a new GUEST methodology will be brought to the readers in the fourth chapter.

3.1 The ideal adaptation of GUEST

To accurately assess the feasibility of a generalization which covers the whole field of social innovation, it is necessary to first describe an ideal methodology's characteristics and potential and comparing this method with the current reality to identify possible constraints and challenges to the achievement of the ideal solution. The basic reasoning of this section will be that the ideal situation would be to have a single model of methodology which can be applied to any project with the least number of changes, respecting timely and economic constraints, without requiring professional knowledge by the client, and without oversight by a professional team.

Regarding the structure of this ideal GUEST, which we will refer to as I-GUEST during this chapter, the five steps should mirror as much as possible the phases of the project to be considered, either by correspondence with work packages, or with time periods, or with steps of the process. It would be optimal to maintain the number and subject of phases as close as possible to the original GUEST, for continuity and ease of application of both.

The tools to be adopted should be few in number, adaptable to any size of the consortium, to any category of social innovation, to any information technology level, and available for any background. The object of study should not change along the project or should change the least possible. The best practices should apply regardless of the field of application of the project, the nature of the results to be developed (product, service, idea, knowledge). The proposed parts of the methodology should be easily adaptable to the concept of complementarity by means of reducing the number of tools or by applying minor changes to the scope, but without requiring a complete redesign of the methodology.

The Test phase should be able to quantitatively or at least qualitatively assess the effective results of the project on innovation of established processes, methods, and products, keeping a continuous dialogue with the stakeholders and allowing the creation of sustainable new relations.

This I-GUEST could be considered as a universal method for any project in the context of social innovation, but this chapter will now progress explaining why such a solution is unreachable.

3.2 The far from ideal reality

A first hint of the challenge of creating a universal methodology can be noted by the multiple attempts at defining social innovation which have been listed in the first chapter of this thesis. In particular, when describing the complexities of the social innovation world and the key challenges in managing projects in the field, Hernandez and Cormican report that: "As we can see, social innovation projects are complex, lengthy, and difficult to measure due to their intangible nature. Social innovation projects are also unique in their outcomes and relationships and they are also very dynamic […] Social innovation projects are not framed or delimited yet; there still exist unclear boundaries about what they are and where it takes place, and there is no defined model or a grounded structure gaining general acceptance" (Hernandez & Cormican, 2016) not without later recognizing the importance of project management practices in facing these challenges.

The results of attempting to simplify methods that are volatile in nature to develop possible universal methods or IT-based solutions can be observed by the *Process model based on method engineering* developed by Thoring and Muller in 2011, which stripped the design thinking process of its flexibility, the possibility of modifying the order of the phases and iterate when necessary, to develop a linear model, going against the suggestions of the d.school reported in *An Introduction to Design Thinking Process Guide* (2010).

Reflecting on our case study in SINFONICA, parts of the process of building the Groups of Interest can denote how a unified model, even in a common project, can necessitate adaptation based on the country and users in which it is utilized. In fact, in the description of the focus groups creation found in the deliverables from the project, several customizations for the countries can be found: "The research site partner Trikala used additional face-to-face interviews to consider older people", for example, as such a solution was not planned for other groups but was necessary for the particular GoI; five groups of people with mobility challenges were defined, but each GoI included particular additions, spacing from people living in rural areas, low-income people, migrants, single parents' families, and university students/young people; even the specific definition of "rural areas" changes between Trikala and Noord Brabant.

Analysing GUEST-SI, it can also be argued that minor changes to the project structure would require significant changes to the model: to bring some examples, if the GUEST methodology was to be used internally in the consortium to monitor the cooperation between the partners, it could not have been supported by the focus groups planned for the users; if the Solve phase was not performed by the consortium through the development of the Knowledge Map Explorer, the methodology should have included tools to cover the phase; if the social innovation project did not include the research of future solutions, the object of study of the Evaluate and Solve phases should be adapted. This could be summarized through the words of Hernandez and Cormican, affirming that a social innovation project "Brings about social change that cannot be built up on the basis of established practices"

(Hernandez & Cormican, 2016) and is dynamic in nature, thus “There is a departure from standard procedures” (Hernandez & Cormican, 2016).

Previously, we defined the I-GUEST affirming that it “should be easily adaptable to the concept of complementarity by means of reducing the number of tools or by applying minor changes to the scope”. Ideally, this would mean we could get to a draft of the methodology by adding tools to the GUEST-SI were needed, but the number of tools that would be needed to cover the whole spectrum of activities that could be found in the social innovation context would surely not be low, creating a long list to be simplified project-by-project, and additions would be needed in case new innovations in the field expand the horizon of activities by breaking the actual standards.

3.3 Uncertainty as a resource and Pluriversality

Uncertainty has been, until this sub-chapter, described as a challenge to the development of a unified model; but in design, it is not considered as such, but as a resource: “This term has always been considered (by Western science and philosophy) as something to overcome, the authors however see in uncertainty a power to incorporate in the design process” (Zullo, 2024). Uncertainty is described as both structural, as in embedded in reality (thus making it difficult to enclose reality in a uniformed model), and generative, meaning that it encourages to go beyond structures and intentions.

We have examples of structural uncertainty and complexity in the literature we examined to look for the definition of social innovation: Manzini describes the phenomenon by affirming that “quel mondo che appariva solido, semplice e illimitato non esiste più. La solidità delle cose si è sciolta nella fluidità delle informazioni” (Manzini, 2006); he identifies the reason for this new kind of world in globalization, the breaking of physical and information borders. For him, the once *solid*, operative, simple, foreseeable world has now evolved in a *fluid*, projectual, complex one. During this thesis, generative uncertainty is being considered as both a diverse kind of uncertainty, and a perspective in which structural uncertainty can be considered: where a universal, operative solution is not a proper answer to the problems that we are facing, we can consider this as an encouragement to pursue more powerful and versatile solutions, which face uncertainty by allowing for fast changes, adaptability, responsiveness, customization. In a more general sense, such a change of pace can also be observed in the context of project management, with the increasing use of an agile method over the waterfall process: “Rapidly changing market conditions, new technologies, short time-to-market cycles and many other factors of the social and business world influence how projects are managed” (Thesing et Al., 2021). In the same paper, the authors develop a useful model to identify which framework to adopt based on the characteristics of the project, and a useful hint of which approach should be preferred in an innovation context is provided: the waterfall approach is suggested when “Novelty level/level of innovation is low. The project does not require very creative work” (Thesing et Al., 2021).

Based on the perspective of uncertainty as a resource, this thesis does not consider it as a challenge to the development of a unified model of GUEST for social innovation, but rather as an indication that the current structure of the methodology has to be adapted to the rapidly changing, vast, and undefinable field of social innovation by modifying how it is developed and presented. “We need to move away from the universalizing ‘grand narratives’ of

knowledge production and focus on contextualizing diverse and situated experiences, epistemologies and narratives" (Smith et al., 08/05/2021), instead of looking for a universal GUEST, we should allow the model to be highly adaptable, versatile, customizable to the specific context, preserving the original ideal that the methodology has to be available to anyone with different backgrounds.

This ideal of not ignoring the differences between contexts in the attempt of creating a universal model is known in design as *Pluriverse*, or "the world in which many worlds fit", concept which was introduced with the book *Design for the Pluriverse* (Escobar, 2018). Paola Bertola, in *Design Multiverso* (Bertola et al., 2004) talked about design affirming that:

"Essa è infatti intrinsecamente attività sistemica, non tende alla riduzione delle variabili in gioco, ma piuttosto alla modellizzazione e riconfigurazione delle variabili in funzione della prefigurazione di possibili soluzioni. Assume la complessità come dimensione operativa senza ricercare un "invisibile semplice" dietro un "visibile complesso". È in grado di contrastare l'incertezza, non attraverso metodi di previsione matematica, ma attraverso la capacità del progetto di costruire e rendere visibili modelli possibili di realtà (mondi possibili), capaci di orientare le decisioni e le scelte strategiche di un'organizzazione" (Bertola et al., 2004)

In synthesis, this thesis aims at acknowledging the wide spectrum of social innovation projects which are possible, by not simply selecting tools and best practices, but by giving a new structure to the methodology to allow it to be adaptable, customizable, and changing in time. The complexity of the field will be regarded as generative uncertainty, leading away from the original idea of trying to define the perfect tools and then narrow each project to adopt only those: instead, the methodology will see a "separation of roles" in the context of pluriversality, where the GUEST team will act as an overseer and manage the overall guidelines offered, while more responsibility and freedom of action will be left to the single project managers and consortiums.

4. Pluriversal Modular Innovative GUEST

During the first chapter of this thesis, we described the GUEST methodology in its structure and tools, and then outlined the existing literature on social innovation and the multiple, diverse definitions which try to encapsulate this complex and changing field. In the second, we presented our case study SINFONICA and the adaptation tailored for it, the GUEST-SI, noting the necessary edits and the differences among countries. In the third, we analysed the feasibility of creating a universal model of GUEST, adaptable to any project in the context of social innovation, ultimately showing how it would be impracticable to, and encouraging to a radical innovation in its structure to adapt the methodology to the field it wants to be applied to.

The following chapter will delineate the identified solution by presenting its desired characteristics, then presenting a prototype of the solution and examples, and finally discussing its potential.

4.1. Desired characteristics of the new methodology

In section 3.1, we identified the ideal solution as "to have a single model of methodology which can be applied to any project with the least number of changes, respecting timely and economic constraints, without requiring professional knowledge by the client, and without oversight by a professional team", adding that the structure should mirror as possible the existing GUEST, that tools should not be added during the tailoring but only removed if necessary, and that the Test phase should properly measure results and impact of the project. Later in the chapter, we proposed to respect the pluriversality of the social innovation world and to develop a highly adaptable, versatile, and changing methodology.

The solution this thesis wants to propose completely embraces the idea of generative uncertainty, by not proposing a *solid* methodology with fixed tools and practices, but a *fluid* model in which the choice of tools and practices is tailored project by project, keeping only some characteristics fixed. These come from considerations about the definitions of social innovation and the comparison between GUEST and GUEST-SI. In particular, a common ground can be found in the necessity of tools to ease the creation of new relationships and collaborations, the social interactions between individuals, the cooperation between individuals and entities. This implies that tools coming from the field of communication and soft skills, such as conflict resolution, active listening, and non-violent cooperation, could ease processes even in a business or social innovation context. Regarding the structure of the methodologies, the design thinking process, and even the conflict resolution methodology which will be presented later, a linear process is presented while also encouraging for iteration, customization, reorganization of the phases if needed. For this reason, the solution that the next section is going to be present will keep the five steps of GUEST without imposing a linear application, even if encouraging it, and will be modularly built.

4.2 Proposed new structure and solution

Keeping in mind the identified characteristics, the new structure proposed for GUEST will not be a five-steps manual of tools, but instead the number of tools will not be limited and imposed. The five-steps structure, common to GUEST and the design process, will be preserved and blended between the two categories. Then, for each phase the client will be presented with a set of choices which are based on the characteristics of the project (and of the consortium), which they will be able to choose from to properly customise the process based on their knowledge and empathy with the local resources, needs and challenges, which are tacit knowledge which may be extremely challenging to communicate to an external researcher attempting to tailor GUEST to the specific social innovation context.

The first step to define the customized methodology will be a short set of questions about the environment in which the methodology will be applied, which will be updated based on new categories that may evolve in time: dimension of the consortium, national/international setting, business/social innovation, for internal use in the consortium/for use towards the users, short time constraints/long term, economic availability, and more. The answers could possibly be given on a 1 to 5 scale for higher sensibility, while the database of tools will be categorised as "preferably higher/lower" or "any", to indicate for example that the tool works best with small numbers of actors (e.g. Personal Interviews) or higher (e.g. Social Business Network). The questions will also have a generative purpose, attempting to spark in the client further questions about the structure of their environment which may not be considered in the database, which will support the further steps and may be added to the overall categorisation of tools in the future.

Evaluate the context of application of your PMI-GUEST

Is your project working in a business or social innovation context?				
Only business ○	Mainly business ○	Intersection ○	Mainly social ○	Only social ○
How large is the number of involved entities?				
1-2 ○	2-8 ○	9-20 ○	21-99 ○	100+ ○
What is the geographical scope of this project?				
Small town ○	Province/Region ○	Country ○	Neighbouring countries ○	International ○
Wil the methodology be applied in the consortium or externally?				
Only internally ○	Mainly internally ○	Both ○	Mainly externally ○	Only externally ○
What is the time constraint for the application?				
Days/weeks ○	<6 Months ○	6-12 months ○	1+ years ○	No constraints ○
What is the economic availability for the application?				
No availability ○	Low availability ○	Average availability ○	High availability ○	No constraints ○
...?				
... ○	... ○	... ○	... ○	... ○

Figure 20 - Example of questionnaire [Self-work]

During the second step, a database of reviewed and categorized tools will be filtered and presented to the client, or researcher customizing the methodology, with the best fit for their answers and other possible solutions which are second-best fits. Synergies will be identified when possible, for example when the development of a tool will easily lead to the creation of an additional one (e.g. Business Model Canvas – Solution Canvas). The client will then select the preferred tools based also on their own tacit knowledge, which may come from empathy towards the project, the users involved, or the specific knowledge available in the consortium. This step will also allow for complementarity, as tools which may intersect with other actions already included in the consortium will not be considered by the customizer, leading to a reduction in the number of tools needed without the need to research for new, not included ones.

Tool	Potential synergies	Phase					Preferrable values						
		Go	Evaluate	Uniform	Solve	Test	Business / Social	Number entities	Geographical scope	Internal/ External	Time constraint	Economic availability	...
Value proposition canvas	/	☑	☐	☐	☐	☐	Business	High	Any	External	Any	Any	
Actor ID card	/	☑	☑	☐	☐	☐	Business	Any	Any	Any	Any	Any	
Value ring	/	☐	☑	☐	☐	☐	Any	Any	Any	Any	Any	Any	
Social Business Network	/	☐	☑	☑	☐	☐	Any	High	Any	External	Any	Any	
Business Model Canvas	/	☐	☑	☑	☐	☐	Any	High	Any	External	Any	Any	
SWOT Analysis	/	☐	☑	☑	☐	☐	Any	Any	Low	Any	Any	Any	
Balanced scorecard	/	☐	☑	☑	☐	☐	Any	High	Any	Any	Any	Any	
Artifact Analysis	/	☐	☑	☐	☐	☐	Social	Low	Low	Any	Any	Any	
Kano Analysis	Focus Groups	☑	☑	☐	☐	☑	Social	Any	Any	External	Any	Any	
Focus Groups	Kano Analysis	☑	☐	☐	☐	☑	Any	Low	Any	Any	Long	Any	
Interviews	/	☑	☑	☑	☑	☐	Social	Low	Low	Any	Long	Any	
...		☐	☐	☐	☐	☐	...	...	...	...	...	...	
...		☐	☐	☐	☐	☐	...	...	...	...	...	...	

Figure 21 - Example of database [Self-work]

The database will be overviewed by the GUEST team, constantly updated, reviewed, and reconsidered for new categories. It will include both tools and best practices, for example suggestions about the testing phase and how to encourage sustainability after the end of the project. Tools would be categorized by the categories asked during the questionnaire, and potential synergies would be indicated, as well as short descriptions and available online materials for them. By allowing this level of customization, limited inputs from the original GUEST team would be needed, and the methodology could technically be self-tailored by the project managers.

This solution would allow for a decentralization of the power and control over the process, with the GUEST team offering guidelines, review and guidance online, while the customization would be performed by people who are as close as possible to the project and the users, allowing also small consortiums to adopt the methodology without being able to afford direct hiring of expert professionals. The proximity of the customizers to the consortium and context would also support a stronger empathy, base for the first phase of both design thinking and GUEST.

Although direct interaction with the original team that created GUEST or with other professionals who might lead the methodology's application would be the best option, it may be useful to develop a solution that is also available for small consortia, for projects which do not have the budget, location or context necessary to get in touch with them. This solution

may be proposed as a web or mobile application, presenting the questions for the first step of the newly developed methodology, and then proposing the tools for each phase.

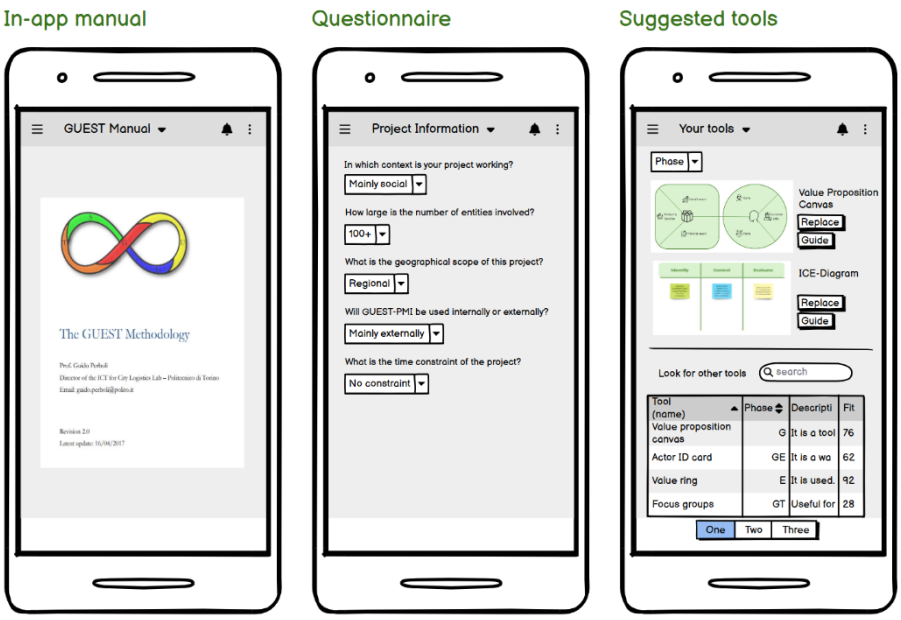

Figure 22 - Example of mobile application [Self-work]

Linking the methodology to an online database of tools and practices with a changing categorization would allow it to change with times, with the creation of new tools, to be innovative as the field it is trying to support. Additionally, an online database may be considered as a co-creation approach, allowing professionals in other fields such as design and communication to advocate for the insertion of new and revised tools, and allowing cooperation between different fields towards a common evolution. Similar categorisations of tools already exist, for example in *Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions* (Hanington, B. & Martin, B., 2012) in which the authors provided a description of a hundred design tools indicating the phase of the design thinking process in which it should be adopted, and classifying them through five categories: Behavioural or attitudinal; Qualitative or quantitative; Innovative, adapted or Traditional; Exploratory, generative or Evaluative; Participatory, Observational, Self-Reporting, Expert Review or Design process. The categorisation has been transferred to the table that can be seen in the Annex of this thesis for accessibility and possible future use in the implementation of this methodology.

The new structure for the GUEST methodology so developed would consider the pluriverse of projects in social innovation, allow for customization, would be modular, and foster innovation. For these reasons, the proposed name will be Pluriversal, Modular, Innovative GUEST, or briefly called PMI-GUEST.

4.3 Soft skills in GUEST

As previously mentioned, having met multiple definitions of the importance of collaboration, communication, and social relations in the studied field, this thesis believes that communication tools would be beneficial to the overall effectiveness of the methodology. In the first chapter, we read how Tim Brown described Design thinking by starting from the personality of a design thinker; in the same way, Balaram Bora described soft skills as “"non-technical, intangible, personality specific skills" which determine an individual's strength as "a leader, listener and negotiator, or as a conflict mediator" (Balaram, 2015). In this article, called *The essence of soft skills,* the author focuses on the importance of a variety of soft skills to lead successful careers, but this thesis considers them as core skills also for leading projects and, especially, social innovation. For at least one person in the management of the GUEST process, such skills are considered essential by this thesis, especially an empathetic approach during the Go/Empathize phase.

The GUEST methodology, the design thinking process, and participatory design all rely on a strong cooperation, collaboration, and communication among the interested entities. Because of this, for the further development of PMI-GUEST and all approaches to blend project management and design, this thesis strongly suggests a stronger collaboration between professionals in both fields: during the research process, while it was common to find articles in one of management or design, it was uncommon to find resources blending both. In most cases, they were composed of first attempts or bringing tools from one to the other completely changing and narrowing them. To foster growth in both fields and in the effective management of innovation, professionals will need to communicate, discuss, compare, and blend their knowledges and tools.

Conclusion

This thesis started with the promise of searching for a solution to the research question, "how to adapt GUEST to be applicable for the field of social innovation", while preserving the fundamental ideals with which it started. The original methodology's purpose was to "provides a conceptual and practical tool to the various stakeholders, enabling them to communicate their vision, difficulties and opportunities within the same structure" (Perboli, 2015): the newly developed PMI-GUEST wants to increase the scope, by offering a wide selection of tools and guidance in their selection, while also empowering the researcher or client in the process. The added value of the client's tacit knowledge will support the process and the impact of innovation.

At the same time, the original methodology "grants the standardization of documents and tools" (Perboli, 2015): the proposed new structure partially loses the ability to standardize this part of the process, while it allows the team managing the database to control the categorization and use of the tools, and opens new chances to research how the different consortia choose the tools for their own version of the PMI-GUEST. Gathering data regarding useful monitoring tools chosen for different social innovation projects, and possibly feedback, would support in the long term a better understanding of the field.

Another characteristic that was to be preserved was the availability of the methodology to every user, its ease of use, multi-channel system, and adaptability for different levels of information technology. The newly proposed solution would ease the creation of a tailored process for users, offering descriptions of tools, and possibly pictures or guides, videos, support by the GUEST team. Regarding the multi-channel system, although PMI-GUEST is meant to be an online support tool at the moment, a non-digital version would be extremely viable and even interactive for users to do: tools could be printed as a set of cards with different colours for each phase, short descriptions, and "points" for each category. The main downside of such a solution, apart for the cost of printing such a customized product, would be the inability to easily update information printed on the cards.

Lastly, GUEST was meant to be available for "multi-disciplinary groups and for people without a specific background in Business Strategy and Business Development" (Perboli, 2015): by blending tools from project management, design, communication, and other fields, and then providing short explanations and supporting graphic visualizations, this new methodology aims at making process monitoring available to anyone.

Regarding the design thinking process, the PMI-GUEST respects the iterative and customizable approaches: no order for the application of tools is imposed, thus making the client responsible for identifying the most apt order and number of iterations for the specific project.

As final part of this discussion, it is to be considered that this thesis was created following the same phases which compose the GUEST methodology: firstly, a Go/Empathize phase in which the researcher has made a first approach towards the GUEST methodology, the social innovation context, design best practices, and communication soft skills. Then, a Uniform/Define phase in which resources were found, "bringing clarity and focus to the design space" (d.school, 2010). The Evaluate/Ideate phase has been the core of the search

for a viable solution to the complexity of social innovation and the research question, assessing the current situation to identify opportunities and possibilities. Lastly, a Solve/Prototype phase led the researcher to propose a framework for PMI-GUEST. The last phase, Test, is out of the scope of this thesis, but will be the natural progression of the research process, hopefully leading to the full development of the new methodology and its application in real social innovation projects, allowing to receive feedback and further improve it, ideally sparking collaboration will between the different encountered fields.

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Appendix

Tool	Content type	Content form	Origins	Primary purpose	Roles
A/B Testing	Behavioural	Quantitative	Adapted	Evaluative	Design Process
AEIOU	Behavioural	Qualitative	Innovative	Exploratory	Observational
Affinity Diagramming	Behavioural,Attitudinal	Qualitative	Adapted	Generative	Design Process
Artifact Analysis	Behavioural,Attitudinal	Qualitative	Adapted	Exploratory	Observational
Automated Remote Research	Behavioural	Quantitative,Qualitative	Innovative	Exploratory,Evaluative	Design Process
Behavioral Mapping	Behavioural	Qualitative	Traditional	Exploratory	Observational
Bodystorming	Behavioural	Qualitative	Innovative	Generative	Design Process
Brainstorm Graphic Organizers	Behavioural,Attitudinal	Qualitative	Adapted	Generative	Design Process
Business Origami	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory,Generative	Participatory
Card Sorting	Attitudinal	Quantitative,Qualitative	Adapted	Exploratory,Generative	Observational,Self Reporting
Case Studies	Behavioural,Attitudinal	Qualitative	Traditional	Exploratory	Design Process
Cognitive Mapping	Attitudinal	Qualitative	Traditional	Exploratory	Self Reporting
Cognitive Walkthrough	Behavioural	Qualitative	Traditional	Evaluative	Expert Review
Collage	Attitudinal	Qualitative	Innovative	Generative	Participatory
Competitive Testing	Behavioural	Qualitative	Adapted	Evaluative	Observational,Self Reporting
Concept Mapping	Behavioural,Attitudinal	Qualitative	Traditional	Generative	Design Process
Content Analysis	Behavioural,Attitudinal	Qualitative	Traditional	Exploratory,Generative,Evaluative	Design Process
Content Inventory & Audit	Behavioural,Attitudinal	Quantitative,Qualitative	Traditional	Evaluative	Design Process
Contextual Design	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory,Generative,Evaluative	Design Process
Contextual Inquiry	Behavioural	Qualitative	Innovative	Exploratory	Observational,Self Reporting
Creative Toolkits	Behavioural,Attitudinal	Qualitative	Innovative	Generative	Participatory
Critical Incident Technique	Behavioural,Attitudinal	Quantitative,Qualitative	Traditional	Exploratory	Self Reporting,Design Process
Crowdsourcing	Behavioural,Attitudinal	Quantitative,Qualitative	Innovative	Exploratory,Evaluative	Design Process
Cultural Probes	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory	Self Reporting
Customer Experience Audit	Behavioural,Attitudinal	Qualitative	Adapted	Evaluative	Design Process
Design Charette	Attitudinal	Qualitative	Adapted	Generative	Participatory
Design Ethnography	Behavioural,Attitudinal	Qualitative	Adapted	Exploratory	Observational
Design Workshops	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory,Generative,Evaluative	Participatory
Desirability Testing	Attitudinal	Qualitative	Innovative	Evaluative	Self Reporting
Diary Studies	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory	Self Reporting
Directed Storytelling	Behavioural,Attitudinal	Qualitative	Adapted	Exploratory	Self Reporting
Elito Method	Behavioural,Attitudinal	Qualitative	Innovative	Generative	Design Process
Ergonomic Analysis	Behavioural	Quantitative	Traditional	Evaluative	Expert Review
Evaluative Research	Behavioural,Attitudinal	Quantitative	Traditional	Evaluative	Design Process
Evidence-based Design	Behavioural,Attitudinal	Quantitative	Adapted	Exploratory,Generative,Evaluative	Design Process
Experience Prototyping	Behavioural	Qualitative	Innovative	Generative	Design Process
Experience Sampling Method	Behavioural	Qualitative	Adapted	Exploratory	Self Reporting
Experiments	Behavioural,Attitudinal	Quantitative	Traditional	Evaluative	Design Process
Exploratory Research	Behavioural,Attitudinal	Qualitative	Innovative,Adapted,Traditional	Exploratory	Design Process
Eyetracking	Behavioural	Quantitative	Adapted	Evaluative	Observational
Flexible Modeling	Behavioural	Qualitative	Innovative	Generative	Participatory
Fly-on-the-Wall Observation	Behavioural	Qualitative	Traditional	Exploratory	Observational
Focus Groups	Attitudinal	Qualitative	Traditional	Exploratory	Self Reporting
Generative Research	Behavioural,Attitudinal	Qualitative	Innovative	Generative	Design Process
Graffiti Walls	Attitudinal	Qualitative	Innovative	Exploratory	Self Reporting
Heuristic Evaluation	Behavioural,Attitudinal	Quantitative,Qualitative	Adapted,Traditional	Evaluative	Expert Review
Image Boards	Attitudinal	Qualitative	Adapted	Exploratory	Design Process
Interviews	Attitudinal	Qualitative	Traditional	Exploratory,Generative,Evaluative	Self Reporting
KJ Technique	Attitudinal	Qualitative	Traditional	Generative	Design Process
Kano Analysis	Attitudinal	Qualitative	Traditional	Exploratory,Evaluative	Self Reporting
Key Performance Indicators	Behavioural	Quantitative	Traditional	Evaluative	Design Process
Laddering	Attitudinal	Qualitative	Adapted	Exploratory	Self Reporting
Literature Reviews	Behavioural,Attitudinal	Qualitative	Traditional	Exploratory	Design Process
The Love Letter & the Breakup Lett	Attitudinal	Qualitative	Innovative	Exploratory	Self Reporting
Mental Model Diagrams	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory,Generative	Self Reporting,Design Process
Mind Mapping	Attitudinal	Qualitative	Innovative	Exploratory	Self Reporting
Observation	Behavioural	Qualitative	Traditional	Exploratory	Observational
Parallel Prototyping	Attitudinal	Qualitative	Innovative	Generative,Evaluative	Design Process
Participant Observation	Behavioural	Qualitative	Adapted	Exploratory	Observational
Participatory Action Research (PA	Behavioural,Attitudinal	Qualitative	Adapted	Exploratory,Generative,Evaluative	Participatory
Participatory Design	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory,Generative,Evaluative	Participatory
Personal Inventories	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory	Observational,Self Reporting
Personas	Behavioural,Attitudinal	Qualitative	Innovative	Generative	Design Process
Photo Studies	Behavioural	Qualitative	Innovative	Exploratory	Self Reporting
Picture Cards	Behavioural	Qualitative	Innovative	Exploratory	Self Reporting
Prototyping	Behavioural,Attitudinal	Qualitative	Traditional	Generative,Evaluative	Design Process
Questionnaires	Behavioural,Attitudinal	Quantitative,Qualitative	Traditional	Exploratory,Evaluative	Self Reporting
Rapid Iterative Testing & Evaluatio	Behavioural	Qualitative	Adapted	Generative,Evaluative	Observational,Self Reporting,Design Process
Remote Moderated Research	Behavioural	Qualitative	Adapted	Evaluative	Observational,Self Reporting
Research Through Design	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory,Generative,Evaluative	Design Process
Role-playing	Behavioural,Attitudinal	Qualitative	Adapted	Exploratory,Generative	Design Process
Scenario Description Swimlanes	Behavioural,Attitudinal	Qualitative	Innovative,Adapted	Generative	Design Process
Scenarios	Behavioural,Attitudinal	Qualitative	Adapted	Generative	Design Process
Secondary Research	Behavioural,Attitudinal	Quantitative,Qualitative	Traditional	Exploratory	Design Process
Semantic Differential	Attitudinal	Quantitative	Adapted	Exploratory	Self Reporting
Shadowing	Behavioural	Qualitative	Adapted	Exploratory	Observational
Simulation Exercises	Behavioural	Qualitative	Innovative	Generative	Design Process
Site Search Analytics	Behavioural	Quantitative,Qualitative	Adapted	Exploratory,Evaluative	Design Process
Speed Dating	Behavioural,Attitudinal	Qualitative	Innovative	Exploratory,Generative	Observational,Self Reporting,Design Process
Stakeholder Maps	Behavioural,Attitudinal	Qualitative	Adapted	Exploratory	Design Process
Stakeholder Walkthrough	Behavioural	Qualitative	Adapted	Evaluative	Participatory
Storyboards	Behavioural,Attitudinal	Qualitative	Adapted	Generative	Design Process
Surveys	Behavioural,Attitudinal	Quantitative,Qualitative	Traditional	Exploratory	Self Reporting
Task Analysis	Behavioural	Quantitative	Traditional	Exploratory	Observational
Territory Maps	Behavioural	Qualitative	Adapted	Exploratory	Design Process
Thematic Networks	Attitudinal	Qualitative	Adapted	Exploratory	Design Process
Think-aloud Protocol	Behavioural	Quantitative,Qualitative	Traditional	Evaluative	Observational,Self Reporting
Time-aware Research	Behavioural	Qualitative	Innovative	Evaluative	Observational,Self Reporting
Touchstone Tours	Behavioural	Qualitative	Innovative	Exploratory	Observational,Self Reporting
Triading	Attitudinal	Qualitative	Traditional	Exploratory	Self Reporting
Triangulation	Behavioural,Attitudinal	Quantitative,Qualitative	Innovative,Adapted,Traditional	Exploratory,Generative,Evaluative	Participatory,Observational,Self Reporting,Expert Review,Design Process
Unobtrusive Measures	Behavioural	Qualitative	Adapted	Exploratory	Observational
Usability Report	Behavioural	Quantitative,Qualitative	Adapted	Evaluative	Design Process
Usability Testing	Behavioural	Quantitative,Qualitative	Traditional	Evaluative	Observational,Self Reporting
User Journey Maps	Behavioural,Attitudinal	Qualitative	Innovative	Evaluative	Design Process
Value Opportunity Analysis	Attitudinal	Qualitative	Innovative	Evaluative	Design Process
Web Analytics	Behavioural	Quantitative	Traditional	Evaluative	Design Process
Weighted Matrix	Behavioural,Attitudinal	Quantitative,Qualitative	Innovative	Evaluative	Design Process
Wizard of Oz	Behavioural,Attitudinal	Quantitative,Qualitative	Traditional	Generative,Evaluative	Observational,Self Reporting
Word Clouds	Attitudinal	Qualitative	Innovative,Adapted	Exploratory	Self Reporting

Figure 23 - 100 design tools categorised [Self-work]