SI drive

SI-DRIVE
Social Innovation: Driving Force of Social Change

METHODOLOGY REVIEW:
Research Propositions, Data Collection and Analysis Framework

D2.1

Status: December 2014
(to be confirmed and updated)

Project acronym	SI-DRIVE
Project title	Social Innovation: Driving Force of Social Change
Grand Agreement number	612870
Coordinator	TUDO – Technische Universität Dortmund
Funding Scheme	Collaborative project; Large scale integration project
Due date of deliverable	12/2014
Actual submission date	12/2014
Start date of the project	January 1st 2014
Project duration	48 months
Work package	2 (Methodology)
Lead beneficiary for this deliverable	UBRUN
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Dissemination level	Confidential

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PART A: RESEARCH FRAMEWORK

Introduction

This document summarises the first methodological review of SI-DRIVE, being updated after each of the two empirical phases (global mapping and in-depth case studies). Consisting of three parts, the document depicts the framework for research propositions and the intended social innovation typology (part A), the review of the main methodologies and methods as a basis for data collection and analysis (part B), and the tools and guidelines for the first empirical research phase (part C).

Part A (General Research Framework) describes the general framework and scheme of this research. It outlines the research propositions, the background and the theoretical and methodological models and concepts of SI-DRIVE as well as the main theoretical outcomes of the critical literature review, relevant for the first empirical phase (global mapping): working definition of Social Innovation, key dimensions, research foci. Preliminary propositions for the second empirical phase (in-depth case studies) are made as well but will be iterative developed on the background of the results of the global mapping phase.

Part B (Data Collection and Analysis) reviews the state-of-the art of the main relevant methodologies (quantitative and qualitative research, case study methods, mapping techniques, innovation methods, and data analysis) on the background of social sciences, innovation and foresight studies, and the methodology already conducted in social innovation projects of the European 7th Framework Programme. On this background the selected SI-DRIVE methodology, instruments, and tools for mapping 1 (global mapping) and mapping 2 (case studies and inherent techniques) are justified. Mainly focusing on the first empirical phase (global mapping) the case study concept will only be described at a more general level, due to the iterative approach. This means that the results of mapping 1 and the following upgrade of the theoretical framework will inform a new background for the conception of the in-depth case studies (mapping 2) and its methodology and methods, instruments, tools.

Part C (SI-DRIVE templates and annex) lists the recent relevant data collection template and its integrated guidelines for mapping 1 (global mapping) as well as the structure and guidelines for the policy field and regional reports.

Background / Executive Summary

The theoretical perspective of SI-DRIVE aims to advance existing research and explicitly combines and connects important discourses in social sciences and beyond (because of its interdisciplinary approach), especially integrating management and innovation studies. These will facilitate the elaboration of particular features of the concept towards the development of a sound theory, giving the ground for establishing coherent methodologies to identify and promote social innovations. The first *theoretical analysis* of SI-DRIVE (see deliverable D1.1) focused on social change (social theory, development theory), social innovation studies (social innovation process and social entrepreneurship, social innovation and the social economy and civil society, design thinking) and innovation and management studies. This critical literature review provides a general depiction of how social innovation resonates within the wider frameworks of existing innovation theory and research, the concepts and perceptions of social change, and societal and policy development. The developed and improved *five key dimensions* of social innovation will be essential in assessing the relationships identified. Subsequently, empirical research will be applied to classify what can be observed in social reality into a typology of social innovation. SI-DRIVE will analyse the differences and commonalities between social innovations in these areas and *seven policy fields* to understand how social innovations develop and scale under different conditions and in relation to *cross cutting themes*.

On the basis of a first *working definition* of social innovation within SI-DRIVE two *major mapping exercises* performed at the European and global levels will bring new intelligence to the fore on social innovation approaches adopted by practitioners, researchers, and policy makers, worldwide. Comparative SI-DRIVE research will determine a hitherto inexistent comprehension of roles and impact of social innovations across cultures, including social consequences and ambivalence. *Foresight methodology* will be applied to arrive at well-grounded *policy recommendations* based on attentive analysis of existing innovations. Recommendations will need to be suitable across diverse cultural contexts, regions, and policy areas, as well as the concerning future challenges. Decentralised foresight building blocks will be developed and integrated through dedicated tasks in the policy recommendations work package.

SI-DRIVE is innovative in its research procedures because it will take a *cyclical approach* in the form of iteration loops between the theoretical and empirical stages. Accordingly, significant parts of establishing an integrated theory of social innovation will be delivered through *inductive* appraisal and re-structuring of empirically obtained data. This procedure is crucial for developing a framework against which it will be possible to formulate applicable policy recommendations. Furthermore, on the one hand it clearly distinguishes SI-DRIVE from scientific mainstream procedures, where usually empirical research and practice is informed by existing theories in a top-down manner – and on the other hand it differs as well from more practice related developments, lacking of a sound theoretical based concept and framework.

In its iterative construction the SI-DRIVE methodology will be *deductive* in the sense that a sound theoretical framework is building the ground and structure for the empirical research (mapping phases) but as well *inductive* by improving the existing theoretical framework through empirical evidence (see figure 1).
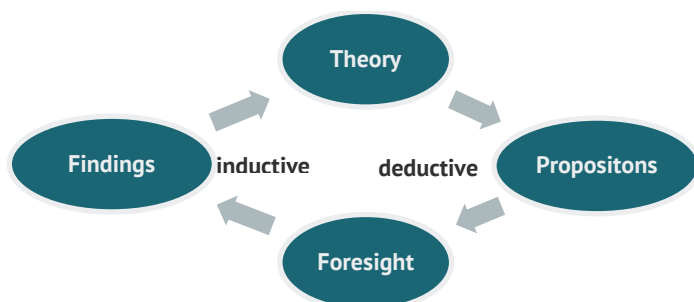
Figure 1: Deductive-Inductive Approach

PART A: GENERAL RESEARCH FRAMEWORK

Part A illustrates the research interest and proposition of SI-DRIVE, as well as the overall research and methodological approach. The first critical literature review on relevant theories for developing a sound social innovation concept (deliverable D1.1) allows the project partners to define the framework for:

1. conceptualising innovation within the scope of SI-DRIVE and its policy domains

2. mapping first initiatives in Europe and the rest of the world through desk research

3. defining research propositions and typology for SI based on literature review and state of the art analysis

4. formulating a first knowledge base on social innovation within SI-DRIVE and its policy fields.

This offers guidelines and templates for the recent global mapping, further theory and methodology development, and upcoming foresight activities.

To begin with, the research concept and objectives of SI-DRIVE are described to set the scene for the theory review and its main elements for empirical research (definition of Social Innovation, key dimensions and research foci) (section 1). Next, the overall methodological approach is outlined (section 2), describing objectives, principles, new evidence and policy relevance. The research framework is summarised by the description of the main methodological framework of SI-DRIVE: iterative and cyclic up-scaling of the research approach and results (section 3).

1   RESEARCH PROPOSITION

SI-DRIVE started its research activities on the basis of an initial concept and general research objectives, a specific SI-DRIVE approach and preliminary methodology considerations, including a working definition and key research dimensions. These initial considerations were improved by a first critical literature review on theory (see deliverable D1.1) and a methodological state of the art assessment summarised in this document. On this basis the methodology, guidelines and survey template for the first empirical phase (global mapping of 1.000+ cases) were developed.

This chapter summarises the research approach of SI-DRIVE as well as the methodology for developing the related research propositions. Both are giving the ground for the empirical research design, embedded in an iterative way (cyclic iteration of theory, methodology and foresight). Because foresight activities are starting after the first mapping phase they will be described here only in general, also due to fact that the methodological foresight and policy approach is illustrated in detail in deliverable D11.1 "Working paper policy framework for social innovation".

1.1   CONCEPT AND OBJECTIVES

The concept of social innovation is becoming increasingly evident in policy, scientific and public debates. There is a growing consensus among practitioners, policy makers, the research community, and others that widespread social innovation is required to cope with the significant challenges that societies are facing now and into the future. The momentum for this revival is being driven by new projects, initiatives, methods, and efforts to establish innovation. The field is practice led, and as Mulgan (2012) outlines, despite the many theoretical foundations attempting to conceptualise the field, the theory of social innovation lacks an established theoretical framework. The SI-DRIVE project pulls the dynamics of diverging theory and praxis together by combining a European and global mapping of social innovation practices with the development of a set of empirically tested foundations of social innovation. The mapping is based on a coherent methodology while the foundations are conceptualised to address social and environmental challenges and influence on-going societal changes towards 'smart, sustainable and inclusive growth' (Europe 2020), as well as the UN objectives such as the Millennium Development Goals.

In light of the increasing importance of social innovation, this project looks at the theoretical concepts, areas of empirical research and observable trends in the field of social innovation on both European and global scales. It refers to socio-scientific innovation research and its contribution to the development and spread of an advanced and more comprehensive notion of innovation. Objectives define the scope for scientific work (development and testing of theories on the basis of sound empirical and trans-disciplinary research); resulting in outcomes reaching beyond the generation of new scientific knowledge, the latter being considered a key matter. In a nutshell, scientific research, interactive communication with relevant networks of stakeholders and communities, the analysis of pertinent policy areas and concluding recommendations for policies and practice, are guided by the following *four objectives and expected outcomes*:

1. To determine the *nature, characteristics and impacts of social innovation* as key elements of a *new paradigm of innovation* (strengthen the theoretical and empirical base of social innovation as part of a wider concept of innovation that thoroughly integrates social dimensions).

2. To *map and analyse social innovations in Europe and world regions* to better understand and enable social innovations and their capacity for changing societies.

3. To *identify and assess SI success factors in seven policy areas across various countries and social groups*, working towards Europe 2020 targets and sustainable development (e.g. Millennium Development Goals).

4. To undertake future-oriented policy-driven research, analyse barriers and drivers to social innovation; develop tools and instruments for policy interventions (SI experimentation, incubation, SI manual).

Generally, the concept of social innovation needs a stronger theoretical grounding from a practical as well as a scientific perspective. The theoretical assertions and improvements are applied, tested and continually developed by means of sound empirical data and case studies in seven major policy areas: (1) education, (2) employment, (3) environment and climate change, (4) energy supply, (5) transport and mobility, (6) health and social care (7) poverty reduction and sustainable development.

Research in these policy areas is carried out for all EU Member states, supplemented by regional trend studies including eight additional major world regions: (1) Russia, (2) North America, (3) South America, (4) Australia/New Zealand, (5) South-Eastern Asia (China, India), (6) Western Asia (Middle, Near East), (7) North Africa (Mediterranean Area), and (8) South Africa.

Cross-cutting themes (related to the Europe 2020 Strategy and Flagship Initiatives) are addressed in each policy area and region: financial resources, ICT and social media, social entrepreneurship and the social economy, gender, equality and diversity, governance (including regional development and Open Method of Coordination), innovation networks, demographic change and migration. The core of empirical research consists of comparisons between social innovations in different world regions and countries, taking into account their respective cultural, religious, and historical contexts. Comparing successful and less successful examples of social innovation allows recommendations to be made for strengthening factors that are crucial for SI to have a sustainable social impact. Theory development and empirical research is built on existing innovation research, explicitly including studies on technological and business innovation[1]. This is particularly important because often in the social innovation discourse, the emphasis is more on exploring new concepts and less on exploiting proven ones. To reach social innovation's full potential the possibilities and *success factors for replication* will be studied as well. In addition, there is the challenge of *scaling-up*, which refers to "moving an innovation into a broader system and creating transformation through the linking of opportunities and resources across scales. Quite often, to effect transformative change in a broader system, the innovation will be reconfigured into an entirely new form to suit that context" (Moore and Westley, 2011).

Social innovation also requires appropriate *social innovation policies*, and traditional framework for public administration regulation of new ideas and methods. Many potential social innovations (ideas) are hindered by traditional approaches in public policies. If Europe wants to tackle the challenges, as documented, through its Strategy for Smart, Inclusive and Sustainable Growth as well as its specific Flagship Initiatives, policy makers need to understand how to involve and make use of the participation of citizens to serve the public good (Bourgon, 2011). SI-DRIVE will offer seven *policy platforms* for strategic dialogue with policy makers. The project is explicitly linked with existing EU projects, dissemination platforms, and networks. E.g., SI-DRIVE with its global perspective will complement TEPSIE, which focuses mainly on Europe. SI-DRIVE will use European and global networks of the Social Innovation Europe (SIE) platform and the SIE Research Hub. Like the other dissemination platforms and networks (such as the global SIX Social Innovation Exchange), SI-DRIVE will build on the existing networks. The consortium has already established relations to most of the main extant social innovation initiatives, either through incorporating organisations and individuals involved in SI-DRIVE, or through good and ongoing working relations established by SI-DRIVE and its partner organisations.

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[1] Concerning theory for example Freeman 1995; Lundvall 1995; Nelson and Winter 1984), concerning empirical research e.g. IUS (Innovation Union Scoreboard) data, related studies in Europe and similar ones from the U.S., Russia, South-East Asia and elsewhere, and OECD reports such as OECD 2008 and 2010, or Rosted et al. 2009.

1.2 THEORETICAL FRAMEWORK

Literature relevant to the development of a theoretical framework for social innovation was examined within a critical literature review (deliverable D1.1) focusing on relevant theories, theoretical and conceptual approaches of social innovation and social change and their relationship. The review lays the foundation for a first theoretically sound and comprehensive concept – relevant for the chosen methodology and the contents of the first mapping phase. Connecting this research work with experience in existing studies, explicitly including studies on technical and business innovations, will help find significant results on the most appropriate conditions for introducing, implementing, diffusing and establishing social innovations. Here, the theory team exhaustively reviewed relevant theory approaches, reports and scientific literature from both European and international sources.

As a first step, the relation of social innovation and social change was approached by three building blocks under which diverse theoretical and conceptual approaches can be subsumed. These building blocks are:

1. Social theory approaches focusing on practice and development theories.

2. Theoretical approaches in the different fields of social innovation research (Social Entrepreneurship, Social Economy, Local and Regional Development, Design Thinking);

3. Innovations Studies including Science and Technology Studies (STS), management and business innovations.
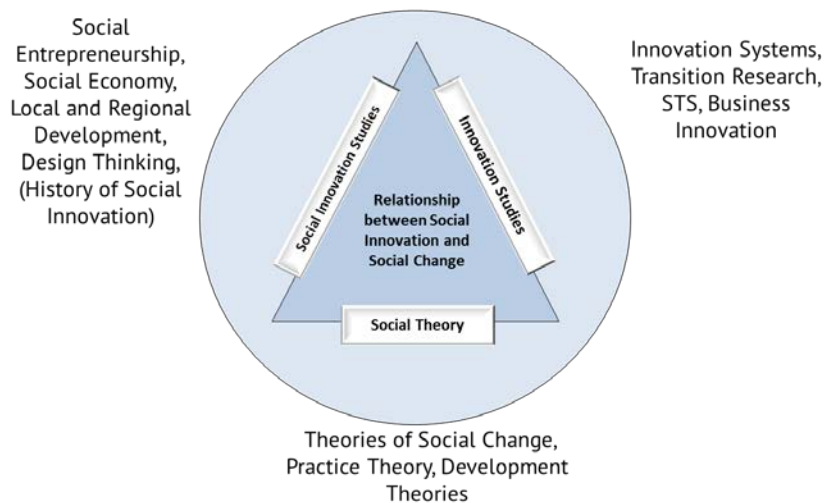
Figure 2: Theoretical Building Blocks of the Literature Review

The literature review and therein developed research guiding questions and topics (including the relationship to transformative social change) scaled up the research propositions and updated the basis for the empirical work to be undertaken. Mainly important for the first empirical phase of global mapping are the improved working definition, the five key dimensions and eight research foci.

1.2.1 A Comprehensive Working Definition

Social innovation has many different (and sometimes conflicting) meanings in a variety of areas such as innovation within the management and organisational research, the field of workplace innovation and quality of working life, as part of social economy, in sustainable development, or as an aspect of territorial development (Moulaert et al. 2005; Howaldt and Schwarz 2010; Rüede and Lurtz 2012; Franz et al. 2012). European Commission's BEPA (Bureau of European Policy Advisers) provides a guiding heuristic: "*Social innovations are innovations that are social in both their ends and their means*" (BEPA 2011, 9). This differs from traditionally conceived models applied in innovation research, noticeably not only pertaining to the focus on social instead of economic relevance, but also concerning the criterion of what makes a new product, process, marketing or organisational measure an innovation. Such novelties are, according to OECD (2005), perceived as innovation only when implemented and successfully diffused in markets. Without uptake in markets and commercial success, even a technologically superior new device is not considered an innovation; it remains a new idea or concept with perhaps high but unused potential. Regarding social innovations, the focus should be on social value creation, yet a *deciding criterion* (which in this case cannot be success in markets) to distinguish a social *innovation* from a social idea or proposed social change is missing.

What is required is acceptance and utilisation of new social ideas, applied as superior social practices in relevant social environments, as expressed in another working definition: "Social innovations are *new practices for resolving societal challenges, which are utilised by individuals, social groups and organisations concerned.*" (ZSI 2012, 2)

In case of social innovation, social groups and actors inherit a role that the market plays for technological innovations. The 'social acceptance' of an innovation leads to its spread, institutionalisation and ultimately to the loss of its character of being something new. The diffusion, acceptance and adaptation of social innovations by definition always occur in socially formed environments or figurations[2] (Hochgerner 2009a). Based on this guiding heuristic, the SI-DRIVE approach defines *social innovation as a new combination*[3] *or configuration of practices* in areas of social action, prompted by certain actors or constellations of actors, with the goal of better coping with needs and problems than is possible by use of existing practices. An innovation is therefore social to the extent that it varies social action, and is socially accepted and diffused in society (be it throughout society, larger parts, or only in certain societal sub-areas affected). Depending on circumstances of social change, interests, policies, power, and successfully implemented social innovation may be transformed and ultimately institutionalised as regular social practices or made routine. Following the end of such a life cycle, when the innovation becomes standard, new demands for change may occur and possibly call for further social innovations.

In this vein, social innovation can be "interpreted as a process of collective creation in which the members of a certain collective unit learn, invent and lay out new rules for the social game of collaboration and of conflict or, in a word, a new social practice, and in this process they acquire the necessary cognitive, rational and organizational skills" (Crozier and Friedberg 1993, 19). Social innovations encompass new practices – concepts, policy instruments, new forms of cooperation and organisation that are developed and/or adopted by citizens, customers, politicians etc. in order to meet social demands and to resolve societal challenges in a better way than existing practices.

Based on these outlines and the results of the critical literature review of SI-DRIVE a **comprehensive working definition** is the basis for the first empirical phase:

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[2] According to Elias (1956, 234) the task of social science "is to explore, and to make men understand, the patterns they form together, the nature and the changing configurations of all that binds them to each other."

[3] The term relates to the Schumpeterian terminology, defining innovations as 'new combinations of production factors' (cf. Howaldt and Schwarz 2010; Hochgerner 2012).

Social innovation is seen as

  - a new combination or figuration of practices in areas of social action;
  - prompted by certain actors or constellations of actors;
  - with the goal of better coping with needs and problems than is possible by use of existing practices.

An innovation is therefore social to the extent that it varies social action, and is socially accepted and diffused in society.

Depending on circumstances of social change, interests, policies and power, social ideas as well as successfully implemented SI may be transformed and ultimately institutionalised as regular social practice or made routine.

1.2.2   Key Dimensions of Social Innovation

SI-DRIVE provides an overview of the current state of international research on SI and its contribution to the expansion of innovative capabilities for resolving key challenges facing the society. The development of a sound theory of SI is a precondition for the development of an integrated theory of socio-technological innovation in which social innovation is more than a mere requirement, side effect, or result of innovations in business and technology. Accurately defining and analysing the unique properties and specifics of social innovation will reveal the *systemic connection and interrelation between social and other forms of innovation*, all to be understood and ultimately integrated in a coherent and comprehensive new paradigm of innovation.

Analysing the literature on social innovation (e.g. BEPA 2010; Murray et al. 2010; Vienna Declaration 2011; Franz et al. 2012; the work of TEPSIE, LIPSE and other research projects) and reviewing theories being relevant for a sustained and systematic analysis of social innovation and its relationship to transformative social change (see the critical literature review D1.1), we elaborated *five key dimensions of social innovation* that fundamentally affect the potential of social innovations, their scope, and their impact as outlined in figure 3:

1. Concepts and understanding of social innovation including the relationship to technology and business innovation

2. Addressed societal needs and challenges, systemic changes

3. Resources, capabilities and constraints (including the role of social entrepreneurship, networks, user involvement, finance regulations, and empowerment)

4. Governance, networks and actors (prompts, prototypes, sustaining, scaling up, systemic change)

5. Process dynamics and mechanisms of diffusion (imitation, social learning), relation to social change.

Figure 3: Key Dimensions of Social Innovation

Theoretical and empirical research for SI-DRIVE started with this frame of five key dimensions, connected to already mentioned relevant cross-cutting issues: (1) Information and communication technologies (ICT) and social media; (2) social entrepreneurship and social economy, social enterprises; (3) gender, equality and diversity; (4) demographic change; (5) migration; (6) empowerment; (7) human resources, knowledge; (8) governance. These themes do have a close relationship to the five key dimensions (see table 1).

Key Dimensions	Cross-cutting Themes
Concepts and understanding of social innovation	Including the relationship to transformative social change and technology; ICT (online networks, social media)
Objectives and social demands, societal challenges and desired systemic change addressed	Related to policy fields, including general objectives regarding gender, equality, diversity (re. EU2020 targets)
Process dynamics, mechanism of diffusion: imitation, social learning, relationship to social change	Roles of innovation networks and stakeholders / drivers at each stage of the social innovation process, cultures of innovation
Actors, networks and governance of social change and development	Social entrepreneurship, networks, user involvement, demographic change, human resources, policy instruments
Resources, capabilities and constraints including finance and finance industries	Human resources, knowledge, scientific research, financial resources, legal conditions, empowerment

Table 1: Key Dimensions and Cross-cutting Themes

1.2.3   Research Foci[4]

The critical literature review opened the view on a theoretically sound concept of social innovation grounded in theories of social change, innovation studies and social innovation research. Based on the results of the critical literature review eight first research propositions were elaborated and became the basis for the empirical work of the global mapping.

Research Focus 1: Concepts and Understanding

Social innovations in the perspective of SI-DRIVE encompass new practices – concepts, policy instruments, new forms of cooperation and organisation – methods, processes and regulations that are developed and/or adopted by citizens, customers, politicians etc. in order to meet social demands and to resolve societal challenges in a better way than existing practices. The emergence of such new social practices, including patterns of imitation and adaptation, will be subject to research concentrating in the first empirical phase. In this perspective, research will be focused on analysing the process of invention, implementation (introduction to a context of use), diffusion and institutionalisation of new social practices in different areas of social action. A great deal of attention should be devoted to better understanding the relationship to technological innovation as well as innovation oriented at creation of economic rather than social value.

Research Focus 2: Ambivalence

Referring to both the normative and analytical concepts of social innovation highlights the importance of identifying to whom a social innovation is ‚desirable' – whose objectives and whose demands are being met and whose objectives and demands are being overlooked?

This difficulty is reflected in heterogeneous and conflicting interests in different societal sectors, e.g. in civil society (Scoppetta, Butzin, & Rehfeld). We also have to consider *"unforeseeable social side effects"* (Howaldt & Schwarz) of social innovations. Their impact may differ according to different actors or groups of actors and there may be winners and losers of social innovation, e.g. according to *"different perspectives of development"* (e.g. Western against native). Establishing a new social practice can mean – using a Schumpeterian term – 'creative destruction' of another previously dominating social practice. In this regard the empirical research will put more emphasis on analysing the ambivalence of the outcomes of social innovation (i.e. social side effects, unforeseeable consequences, different perspectives), also in relation to actors' intentions.

Research Focus 3: Process Dynamics

Considering the experiences in the field of technological innovation a pending task would be thinking towards a concept of Social Innovation Assessment, as one aspect of policy recommendations to be developed.

The successful implementation and/or active dissemination of a new social fact *usually* follows targeted intervention but can occur also through unplanned diffusion (Greenhalgh et al., 2004) – how much this is the case will be subject to research.

From this perspective one of the main objectives of the empirical work of the SI-DRIVE project should be analysing the process dynamics of social innovation (idea –implementation (introduction to a context of use) – social practice – institutionalisation) with a focus on invention, implementation, diffusion and reinvention.

Research Focus 4: Relation to Social Change

While social and economic problems identified in public discourse are increasingly prompting a call for extensive social innovation, the relationship between social innovation and social change remains a largely under-explored area in the social sciences as well as government innovation policies. To better understand the relationship between social innovation and social change we have to analyse the mechanisms of social innovation processes (e.g. imitation and social learning).

Special attention will be devoted to social innovation as a mechanism of change residing at the micro and meso level. The reasons for this are (1) the shortcomings of older models of social change and of an economically and technologically focused innovation model and (2) the potential of new forms of governance, participation and self-help as new social practices becoming apparent.

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[4] The listed research foci are extracted from the summary of the SI-DRIVE deliverable 2.1 "Critical Literature Review".

In the context of the broad debate surrounding sustainable development and necessary social transformation processes (Geels & Schot, 2007) the question of the relationship between social innovations and social change arises again. To better understand this relationship we have to analyse the social embeddedness of any innovation in a dense network of innovation streams.

Taking into account the micro-foundation of social change we have to analyse how processes of social change can be initiated which go beyond the illusion of centralist management concepts to link social innovations from the mainstream of society with the intended social transformation processes.

Research Focus 5: Governance

To understand the modes of governance of social innovation, one focus should be on networks, including social networks, and their actor constellations, modes of cooperation and communication channels.

The literature review has provided starting points of how diverse modes of governance might be according to the mode of innovating. For example, governance structures might differ according to the intention or purpose of actors (i.e. the formation of a strategic alliance to communicate interests, to have access to various resources in the process of innovating/ community of practice, etc.). As with innovation management within firms, the role of employees and the governance of employee involvement in innovation processes at the work place is a central question. Concepts such as frugal and reverse innovation originating from the global south describe alternative innovation logics (downscaling and innovations diffusing from the global south to the global north) with supposedly different governance structures that need to be understood to grasp the variety of types of social innovation and vice versa.

As a conclusion relating to the diverse forms of governance we suggest studying the specific governance in different types of social innovation processes and assess the particularities as compared to other innovation processes.

To develop an integrated understanding of the role of various actors in social innovation, a broader concept is needed that appreciates social entrepreneurship but also takes account of other actor types.

Research Focus 6: Actors

The different roles and functions of actors will be studied by SI-DRIVE. Especially in comparison to social entrepreneurs, there is an under-representation of the various other actor types and their specific impulses and impacts as generators of social innovation. As a conclusion, different types of actors and their roles in the generation and spread of social innovations will be discussed.

Furthermore, a research focus on diverse actor types relates – again – to the issue of adequateness and transferability of existing concepts. While actor constellations in innovative environments have been conceptualised by triple and quadruple helix models, there should also be openness towards the potential of developing new conceptual models describing actors' relations and functions in social innovation.

Research focus 7: Drivers and Barriers

In order to establish a systemic view upon social innovation, it is suggested to put an additional research focus on the drivers and barriers of social innovation - including the influence of power, the role of conflict, and the relation to inequality.

Various concepts reflected in this report have been helpful to understand drivers, barriers and governance of innovations and because of their pertinent clarity they are also widely diffused in political programs and strategies to support innovation.

There is a lot to learn from these concepts for scholars of social innovation and it should be thoroughly tested, in how far concepts of innovation studies are applicable to study the systemic dimension of social innovation and thus are of relevance for better understanding of particular drivers, barriers and governance.

Research Focus 8: Civil Society and Citizen Empowerment

We have to put a strong focus on the role of civil society (citizens, NGOs, social movements, communities) in the innovation process. In particular, we should analyse how the social innovation cases in SI-DRIVE have diffused and whether this facilitated the empowerment of citizens.

However, given the fact that SI-DRIVE is a research project of global reach, the conception of what is

considered as civil society might need adjustment to the specific contexts of the diverse world regions. Alongside civil society, the social economy is environment equally often mentioned as an important source of social innovation[5]. It is thus suggested to pay particular attention to the environments of civil society and the social economy in order to understand their particular distinctions. Studying these distinctions is of special relevance for public decision makers, as it provides the relevant background against which supporting infrastructures can be developed. So the research focus will be to understand the particular distinctions of these areas/fields, especially related to the set-up of supporting infrastructures for social innovation.

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[5] Civil society and social economy are often mentioned in relation to social innovation. However, social entrepreneurship is still dominant and much better understood.

2 METHODOLOGY FOR INVESTIGATING RESEARCH PROPOSITIONS

This section will review the main objectives and research principles, mapping, policy and foresight approaches of SI-DRIVE so far, being the background for the continuously being updated research (iterative and cyclic approach, see chapter 3) as well as for the methodology literature review and the improved methodology, methods and tools for SI-DRIVE (Part B).

2.1 OBJECTIVES FOR METHODOLOGY AND EMPIRICAL RESEARCH

The methodology of SI-DRIVE elaborates the framework and protocols that will be used in the project to ensure that its components conceptually and methodologically work together to maximise expected impacts. The objectives of the SI-DRIVE methodology include defining the framework for:

- Researching the state of the art of socially innovative initiatives, services and projects in the areas of education, employment, environment and climate change, energy supply, transport and mobility, health and social care, poverty reduction and sustainable development (policy fields of SI-DRIVE).

- Conducting mixed-method empirical research for investigating social innovation.

- Analysing the data collected in the project through conceptual and empirical methods to delineate research conclusions and policy recommendations.

The goals of empirical work include:

- Mapping the landscape of social innovation and delivering a typology methodology for social innovation.

- Looking at existing projects and cases of social innovation.

- Exploring and utilising potential social innovation projects and cases in different contexts

- Focusing on the management of change, e.g. roles, relations, values, frames of reference.

- Cyclical improvement of the theoretical framework.

- Exploring a future perspective (foresight perspective) of social innovation.

To facilitate the above, necessary methodological guidelines and protocols were and will be further developed so that the different work package leaders have a common robust framework to carry out their work. The methodological framework is formulated on well-established and tested scholarly work of experts in the field of empirical research. This ensures that the conceptual and empirical work carried out in SI-DRIVE will be consistent and rigorous. The mixed-method research strategy proposed for the project guarantees both wide and in-depth coverage of social innovation across the European and global perspectives; it also safeguards that the research propositions and policy recommendations proposed in the project are well founded.

2.2 RESEARCH PRINCIPLES

Since SI-DRIVE is working within the framework of a new theory, we posit that there is no consistent empirical base or established tradition to build upon. This makes a pure quantitative approach in which we can prove our theory less probable. Our empirical research will, therefore, focus on a classificatory and investigative approach. We will thus use a qualitative approach to improve theoretical concepts, namely the qualitative comparative analysis (QCA; Ragin 2000; Rihoux & Ragin 2009). We will also use a cyclical development approach between theory, empirical results, and political recommendations (see chapter 3): connecting theory, empirical results, and recommendations on a European level in global comparison in several steps during the project.

A final, yet important, dimension of our empirical approach is to link SI-DRIVE with different communities (social innovation practitioners, global scientific social innovation community, and policy makers). Connecting theory and praxis requires the use of a variety of appropriate methodologies (e.g. to apply participatory design in measures to collect data, or to disseminate findings). To succeed in the delivery of tangible outcomes, an ambitious research project with the scope and scale of SI-DRIVE necessitates a clear understanding and application of the principles of 'Science Mode-2' (cf. Gibbons et al. 1994; Nowotny et al. 2001). SI-DRIVE will engage existing collaborative networks of social innovation practitioners, researchers and policy makers, and create new ones.

Thus, gathering information and dissemination of results must not be considered one-way communications. Research in 'Science Mode 2' reveals key features of trans-disciplinarity, meaning that scientists are not the only ones in control of generation and utilization of the knowledge, facts and figures produced. SI-DRIVE will use social networks, open access platforms of many kinds for research and mutual communication. SI-DRIVE will be engaged in crowd-sourced or networked science, also known as 'Citizen Science' (cf. Hand 2010). Citizen Science is a suitable approach for SI-DRIVE because of the world-wide collaboration within the project consortium and further expansion of collaboration. When teams of scientists cooperate across continents, the power of the internet and other media (from broadcasting to social networks) is of decisive relevance. At the same time the same tools can be used to involve stakeholders and practitioners in research processes.[6]

Anyway, the overall research approach adopted for SI-DRIVE can be summarised through *six research principles*:

1. Understanding through comparison: Empirical research by comparing social innovation in different continents, countries and cultural backgrounds including the global perspective, utilising a network of excellent scholars and practitioners in the field of social innovation, and also involving experts in the process of knowledge production.

2. Relating practice to policies and social change: Analysing the policy environment, answering questions such as how are innovation policies barriers to innovations? What and who drives SI? And which stakeholders are doing what?

3. Multidisciplinary approach: Existing concepts from different disciplines will be applied, including social sciences, social economics, political science etc., and connecting multiple levels (micro, meso, and macro) of societal development.

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[6] Many initiatives exist, focusing on a wide variety of issues, so that connections can be made according to SI-DRIVE policy fields. E.g., the Louisiana Bucket Brigade (http://www.labucketbrigade.org/) deals with health and environment, two of our policy areas. On a more general level, the Citizen Science Alliance addresses the capacity of Citizen Science for science as such: "The CSA is a collaboration of scientists, software developers and educators, who collectively develop, manage and utilize internet-based citizen science projects in order to further science itself, and the public understanding of both science and of the scientific process. These projects use the time, abilities and energies of a distributed community of citizen scientists who are our collaborators." (http://www.citizensciencealliance.org/)

4. Strengthening the analytical dimension to clarify which social innovation types, if and how, drive social change.

5. Cyclical iteration between theories, methodologies, policy implications, empirical research, practice, and foresight.

6. Advancing theory and practice of social innovation with a focus on policy strategies that promote and foster social innovations for driving social change.

Each of these principles has been used in previous work. However, the novel part is the integration of all the six into one consistent approach. The six principles will guide our work in relation to the new conceptual frameworks of social innovation. An integrative empirical study will be developed that covers each of the key dimensions of the SI-DRIVE concept and its related cross-cutting themes in relation to the seven policy areas proposed.

2.3   NEW EVIDENCE THROUGH A MAPPING APPROACH

The novel empirical research comprises of two elements: a global survey of social innovations; and a set of in depth case studies that will allow mapping of the 'World of Social Innovation', combining the regional perspective with the selected policy areas. The guiding principle for designing fieldwork will be the theory and three thematic strands: looking at the improved key dimensions of social innovation and social change and its related cross-cutting themes; the seven policy fields; and the different contextual facets of cultural backgrounds, religious and ethical aspects.

Empirical analysis will be characterised by a coherent set of *qualitative methodologies and methods* (e.g. structured and semi-structured interviews, participant observation, qualitative comparison analysis QCA) *and quantification* of social innovation cases all over the world (see sub-section 'a' below). With this combined approach, we will answer our main research questions, be able to quantify certain trends (what kind of social innovations could be found in which policy or global area, identify gaps between the societal challenges and the potentials of social innovation, etc.), and establish a database for the selection of relevant cases, as well as gain in-depth knowledge of relevant existing social innovations. Starting with a first methodology round-up against the background of the theoretical framework for the first empirical phase (state of the art review, collecting cases), two phases of empirical research are planned: *a) Mapping 1* as a first global synopsis of the state of the art social innovations, and after a new theoretical and methodological up-scaling *b) mapping 2* as an in-depth analysis of selected cases to discover prototypes or a typology of social innovations.

a) Mapping 1 - baseline mapping of social innovation

The first step in mapping will be a general scan of social innovations in the involved regions and policy areas (at national, European and global levels). This identification, screening and assembling of social innovations all over the world, but more in-depth across the European member states, will lead to three results: (a) state of the art reports in the policy fields, (b) a report of regional strategies of social innovation in European and global regions, and (c) a database, allowing analysis of what kind of social innovations are to be found in the regional areas and the selected policy fields.

This collection will be done on a first template developed in the theory based methodology of SI-DRIVE. The database will allow a (quantitative) benchmark, and identify prototypical cases in the respective policy fields and world regions, even for a selection of representative cases for mapping 2. This first mapping will help to elaborate the primarily developed theoretical and methodological framework (second version). Based on this, a first pre-selection of theory led representative social innovations (about 20- 30 in each region) will take place,

so that we would have a total of approximately 300 further informed social innovation cases all over the world. The overall approach for this mapping is illustrated in the following figure.
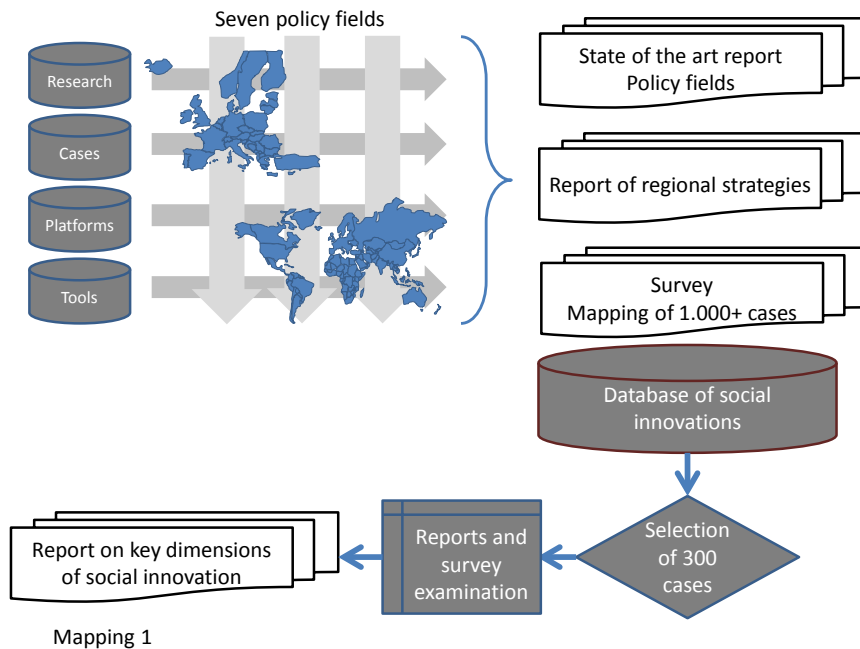

Figure 4: Mapping 1: Baseline mapping of social innovation research

b) Mapping 2 – in-depth case studies

Theory based in-depth case studies of mapping 2 are the nucleus for typology and policy recommendations for social innovations advancement. Based on mapping 1 and its findings, in-depth case studies will also contribute to the further (third and final) development of the social innovation theory and methodology. In order to make comparisons possible, a considerable number of case studies will be conducted. Taking into account the seven thematic fields (policy areas), and twelve global regions (four in Europe and eight other world regions), about 70 SI case studies will be selected from the global database for in-depth analysis. The case studies will be guided by common research questions from theoretical development and results of mapping 1, including tentative features of a typology. In-depth research will be conducted at different levels:

- Detailed research on the local/regional level: selection of representative areas based on preceding case studies, interviewing all key innovation stakeholders.

- Extensive status check in specific countries (also differentiated according to different conditions of innovation): interviews in central intermediary institutions, funding organisations, government departments, industry, social partner organisations, non-governmental organisations, etc.

- Surveys, including already existing European networks and incubators for social innovation.
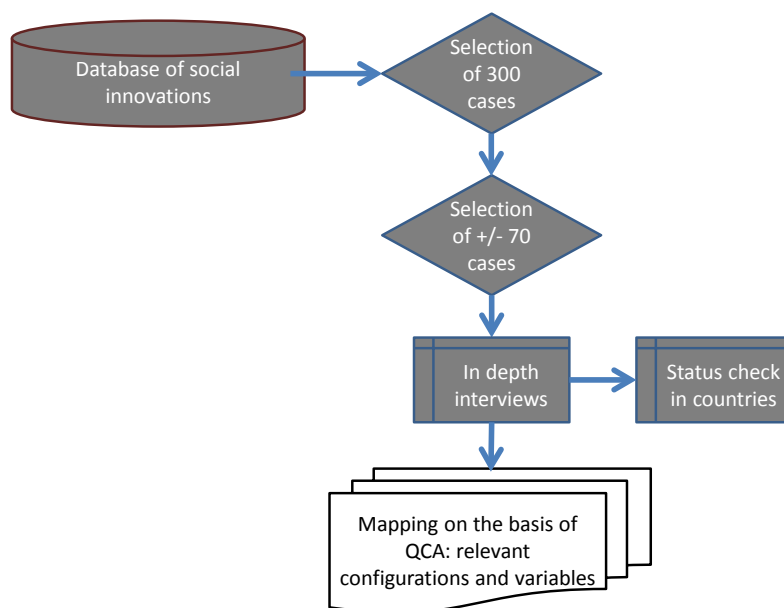
Figure 5: Mapping 2 – Typology of Social Innovation

2.4   POLICY RELEVANCE AND FORESIGHT

Both mapping exercises will lead to two activities: *integration of foresight aspects* from preceding work packages on policy, and specification of *implications for social innovation policies.* As a part of mapping 1 and 2, the recent status of policy implications will be scaled-up not only by a retrospective analysis of recent and present patterns, but also by exploring future perspectives of social innovations. This will be done by bringing together forward looking insights and exploring future perspectives within and across the different policy fields and to facilitate a future transition towards an "Innovation Union" through common institutional and policy levers that fully exploit the potential of social innovation.

Implications for social innovation policies will be cyclically drawn as a kind of summary at the end of each mapping, and they will be based on combination of retrospective analytical results (i.e. state of the art reports, regional reports, report on key dimensions of social innovation, case-study reports) and future-oriented exploratory findings from the mappings. In practice, this will be achieved by establishing seven policy field platforms comprising – besides virtual internet based forums - *two rounds of policy field forums (PF):* one after each mapping in each policy field. In this way, seven policy field forums will be held after analysing the results from mapping 1 and 2 of policy fields, which will be summarised, further analysed and completed as part of work package 11 (policy recommendations). The role of foresight within the overall project methodological approach is illustrated in the figure below.
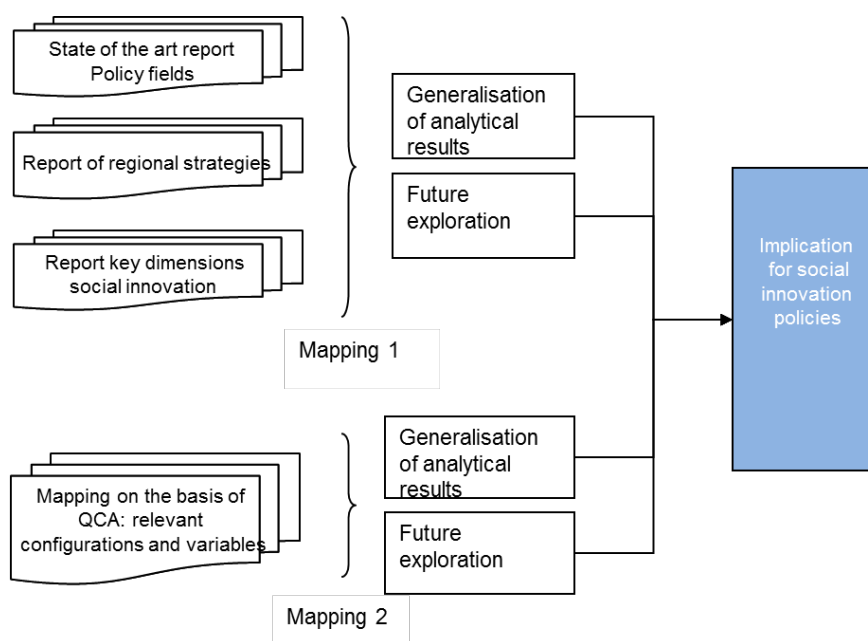
Figure 6: Policy relevance and foresight

a) Round tables and policy platforms

Different platforms, internet based and real networks and collaborative links between organisations and stakeholders will be established, which could help to formulate the policy recommendations, and also play a central role in the dissemination efforts:

- *Seven policy platforms (policy round tables):* For each of the policy fields, we will create separate platforms securing international policy field expertise for each of the areas. We mean to do that by inviting area specialists and public policy representatives (dealing with the policy field; national, European). As a guiding principle, our policy field and network specialists will suggest persons to contact for the platforms. We will also try to connect the work of these policy platforms to different social innovation platforms already active in different countries.

- *A multi-level policy platform (policy round tables):* It is important for us to have the different policy levels within one platform: most discussions on policy impact are clearly about the cooperation between the different policy levels. Within this policy platform, we will seek the participation of ministries and policymakers (EU-level, national level, regional), EU-level social partner organisations, stakeholder groups (including social innovation intermediaries and NGOs), and institutions for which the project is of relevance, and EU-Member States that are not part of the study, and the representatives (authorities, partners) of those non-EU-States participating in the project.

Within the policy platforms renowned experts and leading practitioners from different parts of the world will come together in a "safe space" of *round tables* that will foster free exchange and co-creation. Their central task will be to explore, debate, and validate the main results, themes, propositions, and ideas on the objectives we put forward. In doing so, they are expected to draw on their own expertise and experiences, and on the research findings and case studies that have been developed in the SI-DRIVE-project. Ultimately, the goal is for roundtable participants to give substantive, practical shape to an up-to-date frame of reference for up-scaling social innovations through public policy.

b) Foresight

The project has a second goal with the policy platforms. It addresses more than learning from the past about better ways for policy makers (and other stakeholders) to respond to social innovation. It is also an opportunity to give these policy makers (and other stakeholders) new insights into emerging developments and instruments to deal with future challenges associated with social innovation. In this sense, we have the potential to work on the resilience of solutions. Future trends in social innovation will be identified in the policy fields on the basis of methodological guidance provided by this task. They will be integrated in a cross-cutting manner, and used in devising policy recommendations concerning the diffusion of knowledge and aiming at empowerment of relevant communities (civil servants, recipients of public services, social innovators and incubators and the broader public).

These forward-looking elements will identify emerging patterns of social innovation, potential drivers of, and barriers to, the widening of their role in society, and policy issues resulting from this exploratory analysis. The foresight research of SI-DRIVE extends the state-of-the-art in two ways. First, it addresses the lack of research on medium to long term anticipated trends and emerging new models of social innovation. Existing forward-looking research on innovation tends to emphasise the short term implications of current changes (e.g. as in conventional market research) rather than looking into long-term perspectives.[7] Second, SI-DRIVE extends the state-of-the-art with regard to thematic content by focusing on the future of social innovation in seven key policy fields of major relevance to the EU policy agendas. SI-DRIVE thus enters new territory, where forward looking methods have rarely been applied. This requires bringing together new actors who hitherto have not participated in structured foresight activities. In practice, SI-DRIVE integrates foresight elements as a cross-cutting issue into the work packages dealing with the different policy fields, and brings their findings together in a series of policy-oriented Round Tables. These roundtables also represent an important element of dissemination and stakeholder interaction strategy of the project as illustrated in the following figure.
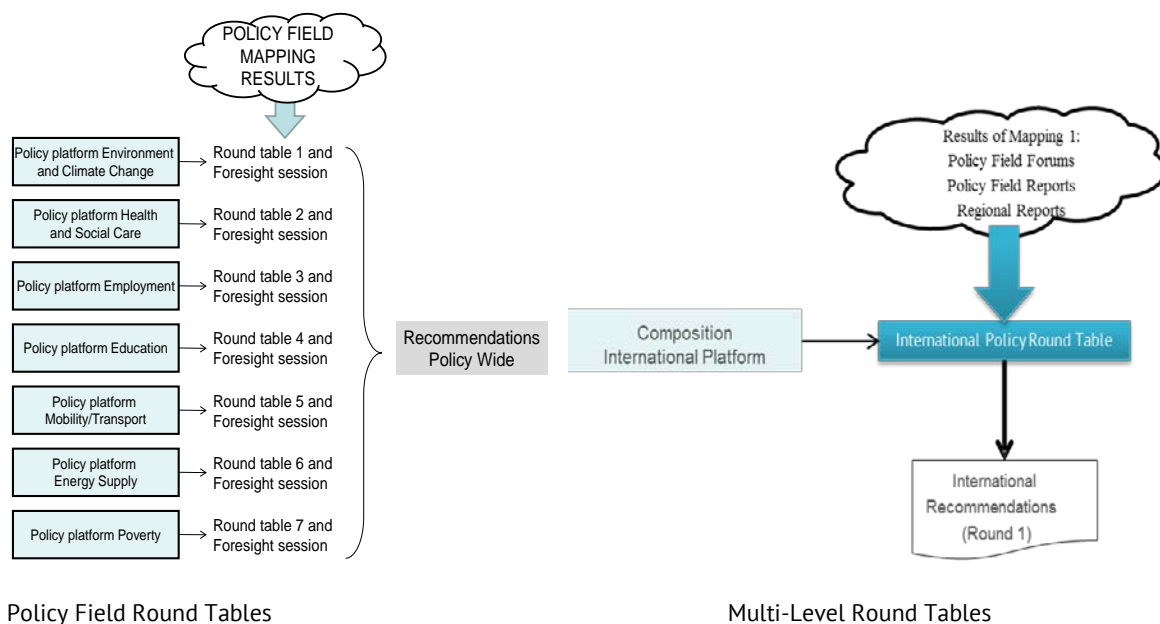

Policy Field Round Tables   Multi-Level Round Tables

Figure 7: Policy tables/forums and foresight round tables

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[7] The recently finished FP7-project INFU (Innovation Futures), coordinated by AIT, is one of the few exceptions from this rule (see www.innovation-futures.org)

On this background, two types of policy advice will be provided by SI-DRIVE:

1. Generalised insights on the emerging patterns and determinants of social innovation to inform policies that seek to enable and facilitate social innovation. This corresponds to the traditional mode of operation of scientific advice.

2. Forward-looking policy advice to inform a strategic approach to government policy. This form of policy–making has gained prominence in recent years in response to a faster changing world where the ability to react to and prepare for rapid changes has become key to positioning national economies successfully in international competition. It requires anticipating change and stimulating new developments, while preventing others that are likely to have a negative impact. Anticipating and assessing potential impacts of changes and policy action in a scenario framework is a key factor to this approach.[8]

A detailed description of the policy and foresight approach and its first operationalization could be found in deliverable D11.1 (Working Paper Policy Framework for Social Innovation).

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[8] On this approach of robust and adaptive policy portfolio developments see Eriksson and Weber 2008.

3 CONTINUOUSLY UPDATED RESEARCH (CYCLICAL ITERATION)

A continuously updated research approach is the key element to support the development of research propositions in the project. As such, the qualitative and quantitative approaches to the theoretical and methodological state of the art development and the foresight studies will be conducted continuously in iterations throughout the duration of the project.
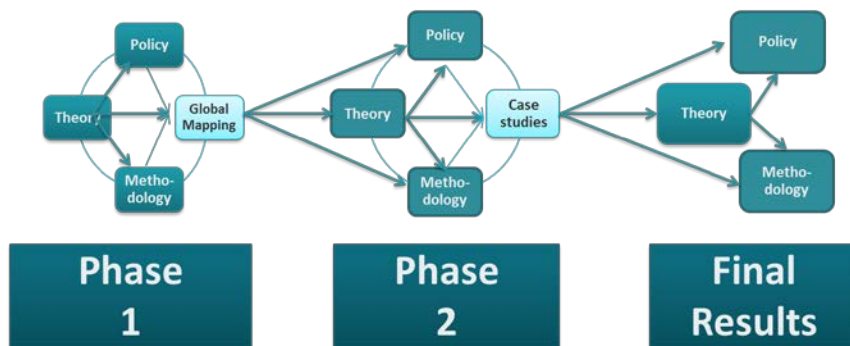

Figure 8: Continuously Updated Research Cycle

This will allow the research team to inject new empirical, theoretical and methodological knowledge into the project and conduct future research into social innovation as new innovations evolving within the individual policy domains. Furthermore, scanning the state of the art environment over time allows for foresight and strategic decision-making where standards for social innovations can be established and compared enabling the refinement and further development of research propositions and typologies. The following figure reflects the continuous research process that will be adopted for the project to develop and refine the research propositions and typologies for social innovation.

Figure 9: Iterative Research Approach

As reflected in figure 1 this research will combine both deductive and inductive research to enable cross-validation and refinement of the research propositions proposed in the project. In the first methodology phase, the requirements for the research, the type of cases, the platforms to be consulted and the type of tools to be used will be defined, mainly in the template for mapping 1, the policy field and regional reports. Also, a first framework for case studies (mapping 2) will be developed, which will then be modified, drawing on the results from mapping 1. The European and global mapping of social innovations (mapping 1) includes collecting basic cases and building a database as well as state of the art reviews on social innovation within the policy fields and regional social innovation strategies. The European and global mapping will therefore provide a connection amongst the results of seven policy fields and the strands of work on theory, methodology, and policy recommendations. This will lead to regional/cultural state-of the art reports. The policy field state of the art reports will also be summarised within this overall mapping.

The first empirical phase will be a collection of social innovation practices and initiatives/projects to show the state-of-the art spread (what kind of social innovation is done where). The cultural background and the policy focus have to be interlaced in a matrix for the selection of cases for the second empirical phase. About 300 cases for further analysis will be examined for a first pre-selection, referring to the collection of main social innovations in the countries/areas and policy fields. In the end, 70 cases will be drawn from them for in-depth case studies (10 in each policy field). The empirical information from mapping 1 (within a matrix of regions and policy areas) will be analysed from three perspectives (policy fields, key dimensions and cross-cutting themes) that will provide feedback for further theoretical and methodological developments (framework for the case studies) and first policy recommendations.

Reiterating, seven policy field forums will be conducted prior the first intermediate international conference, post mapping 1, and each will be summarised, analysed, and completed by policy recommendations, post mapping 2. The second empirical phase (mapping 2: problem or social change challenges oriented in-depth research) will start the same way as the first, but with more emphasis on in-depth case studies in policy fields related to European societal change challenges: on the basis of an elaborated theoretical framework, the methodological template and method for the qualitative analysis will be modified according to the results of global mapping as an input for the empirical work across the seven policy fields.

Empirical results from mapping 2 will be analysed and utilised as new input, feeding into the final theory development and policy recommendations. Within European and global mapping, the regional comparative research will be done, while within the policy fields, the main European societal challenges (in comparison and with inputs from the global regions) represent the core focus of this research. Foresight has to be undertaken as a cross-cutting task at the end of empirical work for mapping 1 and 2 within the policy fields, and then as summarizing and general development for social innovation driving social change within the policy recommendations. Dissemination runs in parallel to research – communicating results, supporting dialogue, citizen science facets of research, and assisting the research in its efforts to impact changing societies and empowerment of citizens. Theory, methodology, and policy recommendations will be cyclically updated to give a cyclic input. Not only theory, but also the methodology to detect, describe, and classify social innovations will be a continuously developed area and will be the product at the end of this project.

PART B: DATA COLLECTION AND ANALYSIS

Part B is reflecting the methodological state-of-the art, relevant for the SI-DRIVE concept described in part A. This review will be used to proof, adjust, complement and justify the selection of methodology, instruments and tools for mapping 1 (global mapping) and mapping 2 (case studies and inherent techniques), mainly focusing on case study methodologies and mapping techniques. The objective of this part is to justify and ground the empirical framework and methodological approach as well as to look for additional ideas and hints for the development of the templates for empirical data collection and analysis. As already mentioned in part A we are looking for a multi-method mix, including quantitative and qualitative methods.

Quantitative methods:

- Designing a template for survey mapping of social innovation cases (1000+).

Qualitative methods:

- Identifying criteria for selecting exemplary cases of SI for case studies across countries / regions.

- Developing the approach and template for conducting participant observation and interviews.

- Formulating the protocol for conducting case studies of 70+ exemplary SI cases using in-depth semi-structured interviews and observations.

In the end, we will have a common mixed (quantitative and qualitative) methodology with collective instruments (unified data collection protocols, guidelines and templates for the surveys and cases).

This first methodology report is focussing on a more general view on the state of the art of research methodologies and mapping, mainly with relevance for the first empirical phase of SI-DRIVE which is global mapping of SI cases all over the world. Because of the iterative approach the selection criteria for the 300 pre-selected cases and the 70 in-depth cases deriving from them, the concrete case study approach and methodology will be further and finally developed on the background of the empirical results and the methodology implications of the global mapping phase.

This first critical methodology review (to be updated iteratively) will be the background for data collection and analysis framework, ultimately delivering unified data collection protocols, guidelines and templates for the survey, case study and observations; and protocols and guidelines for data analysis in general, and case studies, in particular.

Therefore the following areas will be reviewed:

- State of the art empirical methods: focusing on quantitative and qualitative research and its combination, including case study research in social sciences, semi-structured interviews, participatory observation methods, focus groups, and data analysis methods concerned (focusing on QCA)

- State of the art methodologies used in SI projects: analysis of EU Research Framework projects (mainly focusing on mapping and case studies)

- State of the art methods used in innovation studies, mainly in relevance to case studies and foresight foreseen in SI-DRIVE

- State of the art mapping of foresight methodology (expert panels, scenario method, Delphi techniques and others)

- Other relevant methodologies: innovation biographies.

Against this background, implications for the improvement of the SI-DRIVE methodology, empirical work and tools will be drawn up-scaling the existing methodology, methods, techniques and tools. Also, the protocol and template for data collection using both the qualitative and quantitative methods and associated techniques and tools will be described:

- for data collection: mapping 1 and 2 (mainly focusing on mapping 1 – while mapping 2 will be in focus and therefore concretised after the first empirical phase and the related second theory and methodology improvement)

- for data analysis: global mapping cases and case studies

- for validating empirical results (triangulation approach based on mixed and combined qualitative and quantitative methods).

4 LITERATURE REVIEW METHODOLOGY: STATE OF THE ART

4.1 STATE OF THE ART: RELEVANT EMPIRICAL METHODS

The selection of an appropriate research approach to study a related phenomenon is not an easy task (Galliers, 1994). Various disciplines, including social innovation, are not related to a single theoretical perspective (Orlikowski and Baroudi, 1991); researchers thus have the choice of using a suitable method from the many available research approaches and strategies. Researchers suggest three categories based on the fundamental research epistemology, which are, the positivist, the interpretive, and the critical approaches (Orlikowski and Baroudi, 1991; Irani et al., 1999 and Straub et al., 2005). Within any disciplinary area, an understanding of the philosophies underlying research is essential as it helps determine the constitution of 'valid' research, and also identifies the most appropriate research methods (Creswell, 2009). Guba and Lincoln (1994) describe research philosophy as a set of beliefs including the nature of reality (ontology), beliefs about how knowledge is acquired (epistemology), and the nature of how methods are used (methodology).

Positivist studies generally attempt to test theory, in an attempt to increase the predictive understanding of the phenomena. Several researchers classified research as positivist if there was evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from the sample for a stated population (Orlikowski and Baroudi, 1991; Straub et al., 2004; 2005). Interpretive studies generally attempt to understand phenomena through the meanings that people assign to them. Interpretive methods of research are aimed at producing an understanding of the context of systems, and the process whereby the system influences, and is influenced, by the context (Walsham, 1995). A critical research philosophy differs from the positivist and interpretive research philosophies, both of which "are content to predict or explain the status quo" (Orlikowski and Baroudi 1991, p. 19). According to Mayers (1997), "critical researchers assume that social reality is historically constituted and that it is produced and reproduced by people. Although people can consciously act to change their social and economic circumstances, critical researchers recognize that their ability to do so is constrained by various forms of social, cultural, and political domination". Moreover, Orlikowski and Baroudi (1991) classify a research as critical, where a critical stance is taken towards taken-for-granted assumptions about organizations and systems, and where the aim is to critique the status quo.

The research of SI-DRIVE in this sense will positivistic, interpretive *and* critical, due to its iterative and cyclical research approach – being deductive and inductive, relevant for the research community, practice and policy as well as for foresight. Therefore a mix of qualitative and quantitative research methods might be suitable, completing and overcoming the hindrances of each other.

4.1.1 Qualitative Research versus Quantitative Research

The debate among scholars since the last few years about whether to employ a quantitative or qualitative methodology has gained considerable momentum. While the exact constitution of both methodologies varies between researchers, there is an agreement about their fundamental meanings and practical implications. The quantitative method is suitable when the research seeks to assign figures to observation, or reach a universal statement (Brynard and Hanekom, 1997). In contrast, according to Myers (1997), the qualitative approach is more effective as it uses qualitative data from interviews, documents, and observations to understand and explain social phenomena. Denzin and Lincoln (2003: 549) recommend qualitative research as the researcher must "study things in their natural setting, attempting to make sense of, or interpret, phenomena in terms of the meaning people bring to them".

According to Galliers and Land (1987), a number of different research taxonomies have been proposed as a result of the number of different research approaches that are adopted from other studies, such as business, sociology, and the natural sciences. Fidel (2008: 265) suggests that scholars often agreed that multi-method projects include both quantitative and qualitative components, but they "disagreed on how these components should relate to one another, and what level of integration was required". Also, Tashakkori and Creswell (2007) specify that multi-method research integrates findings, and draws inferences using both quantitative and qualitative methods in a single study. Researchers have been employing more than two methods, such as surveys, observations, and interviews in multi-method researches (Fidel, 2008); for instance, Bernardi et al. (2007) employed three instruments in their study that included a semi-structured interview in the qualitative approach, a socio-demographic questionnaire that was analysed quantitatively, and a network chart and network grid providing data for both qualitative and quantitative analyses.

While deciding the approach for collecting and analysing the ensuing data, researchers may find it useful to employ both qualitative and quantitative methods at different stages of the study (multi-method/mixed research). Guba and Lincoln (1988), Creswell (1994), and Neuman (2000) draw up a comparative list for quantitative and qualitative research methods. They concur that:

1. Formal language is used in quantitative research in contrast to qualitative research where the language is informal.

2. Researchers are independent from what is being researched in quantitative research, but in qualitative research, researchers interact with what is being studied or researched.

3. Generalising in quantitative research leads to prediction, explanation, and thus understanding. On the other hand, in qualitative research, patterns and theories are developed from an understanding.

4. In quantitative research, analysis comes usually in the form of statistics, tables, charts, and discussions on their relation to the given hypothesis; qualitative analysis is used to extract generalisations from what is found and organising them to present a consistent picture.

5. In quantitative research, data are in the form of numbers. As for qualitative research, the data are in the form of words from observations and documents.

Godfrey and Callaghan (2003) compared quantitative and qualitative methodologies, as presented in table 2:

Quantitative research features	Qualitative research features
Data are expressed in numbers.	Information is expressed in words and/or images (semiotics) that relate to feelings, processes, actions and meanings.
Concepts need to be defined in terms that are measurable.	Focus is on how people understand and interpret their social worlds.
Data are collected in a way that can be generalised to a wider population.	Data collection process is a social interaction involving the researcher and the participants.
Data must be valid and reliable and independent of the research setting and process.	Researcher's interpersonal skills are crucial to the understanding of the information.

Table 2: Comparison of Quantitative and Qualitative Methodologies (Source: Godfrey and Callaghan, 2003)

Bernard (2000) outlined the strengths and weaknesses of quantitative and qualitative methods, as presented in table 3:

Method	Strengths	Weaknesses
QUALITATIVE METHOD	• allows complete, rich, and detailed description • can be faster than quantitative methods • does not reduce complex human experiences to numerical form, and allows a good insight into a person's experiences and behaviour • can be cheaper than quantitative research • recognizes ambiguities inherent in human language	• difficult to analyse; needs high level interpretative skills • good chance of bias • hard to draw brief conclusions • makes comparison difficult • low statistical accuracy
QUANTITATIVE METHOD	• allows classifying the features, counting them, and constructing more complex statistical models in an attempt to explain what is observed • findings can be generalised to a larger population • allows easy analysis as the data is available in numerical form • provides high level of accuracy • compares measures of dispersion • analysis can be presented graphically	• picture of the data emerging from quantitative analysis lacks richness of detail in comparison to qualitative analysis reduced to numerical form • implementation is complex, slow and time consuming in comparison to qualitative research • can be expensive • low response rates • often requires computer analysis

Table 3: Strengths and Weaknesses of Quantitative and Qualitative Methodologies (Source: Bernard, 2000)

This comparison of strengths and weaknesses of quantitative and qualitative methodologies is justifying even from a methodological perspective the chosen multi-method mix research of SI-DRIVE, combining for instance in the first empirical phase of global mapping the quantitative results of a large number of SI cases all over the world with the context related reports on policy fields and world regions.

SI-DRIVE Mixed Research: Combining Quantitative and Qualitative Research

Selecting an appropriate research approach is a key task of the research design process. The researcher must decide whether to use a deductive or inductive approach. According to Saunders et al., (2003) the inductive approach is used to collect data and develop a theory as a result of the data analysis. Deductive approach is used to develop a theory, and then design a research strategy for testing that theory. Myers (1997) and Mingers (2001) argue that although most researchers conduct either qualitative or quantitative research, some researchers recommend combining them in one study. According to Johnson et al., (2007), this mixed research is a synthesis that includes ideas from both qualitative and quantitative research. Furthermore, Stake (1995) notes that qualitative researchers look for understanding the interrelation of the phenomenon, whereas, quantitative researchers are keen on finding the explanation for and controlling the phenomenon. Das (1983 cited in Amaratunga et al., 2001:23) argues that "qualitative and quantitative methodologies are not antithetic or divergent; rather they focus on the different dimensions of the same phenomenon".

Sometimes, these dimensions may appear to be confluent: but even in these instances, where they apparently diverge, the underlying unity may become visible on deeper presentation. The situational contingencies and objectives of the researcher would seem to play a decisive role in the design and execution of the study. According to Rossman and Wilson (1985: cited in Johnson et al., 2007), there are three reasons for combining quantitative and qualitative research:

1. Combinations are used to enable confirmation of each other as in triangulation.

2. Combinations are used to enable or to develop analysis that results in richer data.

3. Combinations are used to explore new ways of thinking by mixing two data sources.

Scholars have identified different names for the combined qualitative and quantitative research method, such as, multi-strategy (Bryman, 2004), multi-methods (Brannen, 1992), mixed methodology (Tashakkori and Teddlie, 2008), or mixed methods (Creswell, 2008; Tashakkori & Teddlie, 2008). Given this context, the definition considered most suitable for the purpose of this research is multi-methods. Creswell (2008), Johnson et al., (2007), Creswell and Clark, (2006), and Tashakkori and Teddlie, (2008) note that a multi-method research approach has its own emerging world view, vocabulary, and techniques. Tashakkori and Creswell (2007) propose a broad definition for multi-method research stating, "research in which the investigator collects and analyses data, integrates the findings, and draws influences using both qualitative and quantitative approaches or methods in a single study or program of inquiry" (Tashakkori and Creswell, 2007:4). This leads to the development of triangulation in research. Collins et al., (2006) identified four rationales to conduct multi-method research: participant enrichment, instrument fidelity, treatment integrity, and significance enhancement.

The triangulation and combination of quantitative and qualitative methods has also a sequential aspect: While the quantitative approach is more appropriate for the analysis of 1.000+ social innovation cases (mapping 1), the qualitative methodology is more relevant for the in-depth case studies (based on the quantitative and qualitative analysis of mapping 1).

4.1.2   Quantitative Approach (Mapping of 1.000+ Cases within SI-DRIVE)
Quantitative methods are mainly used when a theory or a set of hypotheses are to be tested for either acceptance or rejection (Newman and Benz, 1998). As Silverman (1998) explains, the quantitative approaches are objective by nature, in that, they allow for the data to be accumulated in a controlled environment which is restricted in a way that prevents any other attributes to be considered, other than those being studied to help establish a basis of behavior towards the issues being addressed in a study. Apart from being reliable and objective, quantitative research can be carried out on a large scale, facilitating the collection of the desired data from a bigger population (Balnaves and Caputi, 2001). Quantitative data is sourced from surveys, laboratory experiments, formal and numerical methods (Kapoor, 2014; Myers, 1997).

Jayasingh and Eze (2009) regard quantitative-positivist research as one of the most time honored ways of studying human behavior and technology use. It is rich with knowledge capable of explaining these socio-technical phenomena for research and business practices across different industrial settings. Bhattacherjee (2012) suggests laboratory experiments, field experiments and surveys, secondary data analysis and case researches as some of the popular examples of positivist designs. Straub et al (2004) identify a rather extensive list of quantitative positivist research methods with - field, lab, adaptive experiments, experimental simulation, field study, opinion and archival researches (Kapoor, 2014).

The experimental studies intend to test the cause-effect relationships in a tightly controlled environment by detaching cause and effect to administer the cause on one set of subjects, say the treatment group, but not to the other group of subjects, say the control group, and then record the variance in mean effects between the

subjects from these two groups (Bhattacherjee, 2012). Boudreau et al (2001) describe *field experiments* as the experimental manipulation of variable(s) in a naturally occurring system, followed by measuring the impact of the induced manipulation on the dependent variable(s). *Laboratory experiments* on the other hand are experiments carried out in controlled environment, specially designed to allow researchers to exercise control over the variables and participants involved (Fine and Elsbach, 2000). Jenkins (1985) explained that in an *adaptive experiment*, data is collected prior to the introduction of the independent variables, but the final form is not arrived at until after the introduction of independent variables and the collection of the after data (Kapoor, 2014).

Shifting focus to the archival and opinion types of researches, Jenkins (1985) explains that whilst the *archival research* deals with examination of historical documents and recorded data, *opinions research*, as the name suggests, is inclined towards gathering information on people's attitudes, opinions, notions and beliefs, which is pursued by asking them via questionnaires and interviews to test a priori hypotheses, offering an iterative approach to the hypotheses generation. Lastly, Boudreau et al (2001) explain the concept of *field studies* as them being the non-experimental inquiries existing in natural systems that do not allow any manipulation of the independent variables, or any control over the confounding variables. Such non experimental designs help capture snapshots of the extant practices, ideas and situations from random respondent samples that are aimed at measuring the variables being studied, for their effects, using the various statistical techniques (Kapoor, 2014; Bhattacherjee, 2012).

The initial analysis of data collected from the SI-DRIVE survey (1000+ cases) is planned to be carried out using the structural equation modelling (SEM) technique. Structural equation modelling is typically applied with reflective measures (Straub et al., 2004). These SEM techniques are the second generation data analysis techniques that enable the researchers to address interrelated questions in a single methodical complete analysis by allowing simultaneous modelling of the extant relationships between the independent and dependent constructs (Kapoor, 2014; Gefen et al., 2000). This quantitative approach will be combined with content analysis to theme the qualitative and descriptive content of the survey.

4.1.3   Qualitative Approach (In-depth Case Studies of SI-DRIVE)

Miles and Huberman (1994) describe qualitative research as the research type based on words rather than numbers. Marshall and Rossman (1999) summarise some research types for which qualitative research would be appropriate; these include – research on phenomenon that are not known or little known, research that examines complexities in depth, research that cannot be done experimentally, and research for which relevant variables have to be identified. Case study is one constituent of the other accepted research methods for conducting research in the social sciences. Like case study, action research, ethnography, and grounded theory approaches are seen as parts of qualitative research. Yin (2003; 2009) claims that when 'how' and 'why' questions are frequently posed, case studies are the preferred strategy.

According to Yin (2009:18), "case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and the context are not evident". Irani et al., (1999) claim that case studies can be used to describe phenomena, build theory, and test theoretical concepts and relationships. A question that arises when selecting the case study method is 'whether to conduct a single case study or multiple case studies'. Some researchers prefer multiple cases, but single cases are useful in specific instances. Yin (2003; 2009) and Irani et al., (1999) suggest that single case studies are more relevant if: it is a revelatory case, if it represents a critical case for testing a formulated theory, or if it is a unique case.

Yin (2003; 2009) specified that single case design enables rich analysis of phenomena. In contrast, conducting multiple case designs is preferred when the intent of the research is descriptive, theory testing, or theory building. Benbasat et al., (1987) specify that multiple cases yield more general research results. According to Irani et al., (2008: 157), "generally, it is considered that there is no ideal number of cases that should be

undertaken when using this research approach". Furthermore, Romano (1989; cited in Irani et al., 2008) suggests that the number of cases to be used should be decided by the individual researcher.

A case study offers insights and learnings on complex issues based on comprehensive understandings of those issues, which are attained via extensive description and analysis of the targeted issues taken as a whole, and in their contexts (Morra and Friedlander, 1999). Case Study Methodology has been popular in the social sciences, and has maintained a long history across various disciplines (Creswell, 2007). Mostly grouped under qualitative research, case studies employ both qualitative and quantitative research methods that offer in-depth revelations on the targeted cases (Bryar, 1999). Case study methodology mostly revolves around a constructivist paradigm, where the interpretations are assumed to be subjective, given one's personal experiences, which are also influenced by communications with others and extant cultural norms; (Creswell, 2009; Stake, 1995; Yin, 2009). Case studies are specific to participant perspectives, and are carried out to include the participant views for the case being studied (Tellis, 1997). While case studies are often critically identified for the lack of systematic procedures and accused of generating biased results, they are appreciated for its incorporation of multiple data sources and data collection methods that strengthen the validity of the results (Ridenour and Newman, 2008; Yin, 2009).

Case studies have been defined differently by various sources, creating discrepancy within the literature; this issue is coupled with inconsistent labelling of some research as case study research when the case may not exactly be so (Zucker, 2001). This differentiated understanding of a case study methodology has led to some researchers purely considering it as a methodology, whilst others take it to be a choice of what could be studied (Stake, 2000). According to Yin (2014), the more the research questions seek answers to the *why* and *how* of a social phenomenon, in this case, a social innovation, the more the case study research becomes relevant for the research. These cases allow the study of individuals, groups, and organizations, and also facilitate the investigation of varied political and social experiences of a particular sect, region, or country (Yin, 2009). It is further explained that case studies enable researchers to focus on the targeted case whilst maintaining a holistic and real world perspective in analysing individual life cycles, accumulative group behaviour, organizational and managerial processes, social changes in the neighbourhood, international relations, industry related issues, public policies, public relations, and so on (Yin, 2014).

Case studies can be illustrative, exploratory, cumulative, or even based on a critical instance. Illustrative case studies are mostly descriptive, relying on one or a couple of instances illustrating the entire situation. These generally are used to make the unknown known and offer common terminologies to address the case under investigation.

Exploratory case studies are compact by nature, and are undertaken prior to a large implementation. These help recognize the questions and identify the measurement types before beginning the intended implementation. Cumulative case studies, also sometimes referred to as the combined methodology of case study, tend to aggregate knowledge from available sources from different times to gather inputs for generalizations without added resources to undertake new, probably repetitive studies, on the case of interest. The critical instance case studies examine multiple sources for examining a particular case with no intentions of generalizability, or for challenging a widely generalized assertion. Often the illustrative, exploratory and critical instance approaches are grouped to be called the descriptive type of case studies (Morra and Friedlander, 1999). Another broader classification is of an explanatory case study that is focussed on explaining the different relationships amongst the implementation of a case, and the effects that it has on field. SI-Drive will be typically following a cumulative approach to gather the required information from available sources to fuel the investigation, which will gather inputs in conjunction from a variety of other sources (semi-structured interviews, participant observations, and focus groups) as the research progresses.

While case study in itself implies the study of one case, researchers note that this might not always be the case. The size of the case study can be fairly large, to even represent a country. This entirely depends upon the

instance that the researcher wants to consider as a whole; it could be an entire project, a site, a country, a policy, a department, or even multiple departments within an organization (Morra and Friedlander, 1999). Case studies are often closely associated with in-depth interviews, and the number of cases is mostly chosen on the basis of convenience, probability, and purpose. In selecting the participants for the case study, it is important that the researchers choose a small group of participants, preferably representative of the society in which the case is based. It will be critical to organize the case study analysis in a way that allows comparison of data from varied sources. Researchers warn that case study analysis can become complex in practice with excess comparisons being introduced amongst different participants for a single case, amongst different cases, and amongst different participant groups across different cases (Ritchie et al., 2013). Data gathered during case studies can come from a wide range of sources, such as, documents, archival records, direct and participant observations, interviews, and artefacts. Data can be attained through either, a combination, or from all of the above mentioned sources (Ritchie et al., 2013).

With case studies, like in any qualitative research, when researchers begin investigation with one or more questions aimed at extracting information on the key factors that they are interested in, new key factors may emerge during the data collection process. These could be unexpected data patterns, or even some linguistic features which come to the surface only during the data gathering process.

Not finding basis on the guiding research questions, these newly emerging factors can potentially form the basis for newly sought questions that could be explored as a part of the research being undertaken to widen understandings on the case, or could simply be identified as a possibility of future research.

4.1.4   Main methods for the SI-DRIVE Case Studies

Within the SI-DRIVE in-depth case study methodology some elements are pointed out as important methods for:

- data collection: semi-structured interviews, participant observations, and focus group discussions

- data analysis: Qualitative Comparison Analysis (QCA).

Qualitative data analysis requires some originality in placing new data within logical and meaningful categories for facilitating their valid examination, and finding a way of communicating this interpretation to others (Hoepfl, 1997). Bogdan and Biklen (1998) define qualitative data analysis as "working with data, organising it, breaking it into manageable units, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others." The process of qualitative data analysis takes many forms, and is non-mathematical in nature. A common complaint about qualitative data analysis is that it is often unclear, and not well-formulated (Miles and Huberman, 1994). Therefore in SI-DRIVE the Qualitative Comparison Analysis will be used within the SI-DRIVE analysis concept, which is described in detail in chapter 5.6. Nevertheless, the most relevant methods for data collection will be reviewed in the following.

As a kind of overview Yin (2009) specifies six major sources of evidence in data collection. These sources include documentation, interviews, direct observation, participant observation, archival records, and physical artefacts. Some examples of the use of these sources are given in table 4. According to Yin (2009), qualitative interviews can be structured, semi-structured, or unstructured. Structured interviews involve the use of a predetermined questionnaire with similar structured questions for all respondents (Britten, 1995).

Sources	Strengths	Weaknesses	Sources
Documentation	stable; can be reviewed repeatedly unobtrusive and not created as a result of case study exact; contains exact names, references, and details of events broad coverage; long span of time, multiple events and settings	irretrievability can be low can be biased selectively if data collection is incomplete reporting bias reflects (unknowingly) on author bias access may be intentionally blocked	reports from organisations under study white papers reference material downloaded from internet newspaper articles brochures
Archival Record	[**Same as Documentation**] precise and quantitative	[**Same as Documentation**] accessibility due to privacy reasons	organisational records; e.g. charts, layouts, service records
Interview	targeted; focuses directly on case study insightful; provides and perceives causal interfaces and explanation	bias due to poorly constructed questions response bias inaccuracies due to poor recall reflexivity; what the interviewer wants to hear	semi-structured interviews close-ended questions
Direct Observation	reality; covers events in real time contextual; covers context of event	time-consuming selectivity unless broad coverage reflexivity; event may proceed differently because it is observed cost hours needed by human observers	
Participant Observation	[**Same as Direct Observation**] insight into interpersonal behaviours and motives	[**Same as Direct Observation**] bias due to investigators manipulation of events	
Physical Artefacts	insight into cultural features insight into technical operations	selectivity availability	

Table 4: Data Collection Methods (Source: Yin, 2009:102)

4.1.4.1 Semi-structured Interviews

Interviews are used with an objective of developing a substantial in-depth argument on the focal areas for which a study is being constructed (Baroudi and Orlikowski 1991). In using these, the most critical task is to understand and correctly interpret the meaning of what the interviewees have to say. There is no general practice or procedure existing for research interviews (Kvale, 1996). These are characterized by synchronous communication in time and place. According to Opdenakker (2006), they have an advantage of social cues, such

as the interviewee's voice, tone and body language, which provide the interviewer with added information that compounds the vocal answer of the interviewee for a question.

This also leads to the interviewee being more spontaneous, but at the same time, the synchronous character calls for the interviewer to pay closer attention to the questions being asked, and simultaneously to the answers being given (Opdenakker, 2006). These interviews, upon permission, can also be tape or video recorded for better interpretation post the interview process. Interview is a managed verbal exchange (Ritchie and Lewis, 2003), and its effectiveness is heavily reliant on the interviewer's communication abilities (Clough and Nutbrown, 2007). These include the ability to structure questions clearly (Cohen et al., 2007), attentive listening (Clough and Nutbrown, 2007), know when to pause, probe, or prompt appropriately (Ritchie and Lewis, 2003), and the ability to encourage the interviewees to respond freely (Clough and Nutbrown, 2007). Interpersonal skills also play a significant role here (Opie, 2004); ability to establish a rapport, possibly with humor and humility builds up to the relational aspect and trust which is required between the interviewee and the interviewer.

Semi-structured interview is a common method of research used in the social sciences. It has an open format, and allows new ideas to be brought up during the interview based on what the interviewee says. These are best suited when the information needed can be best extracted in an open environment, where the interviewer has the flexibility of posing open ended questions. Semi-structured interviewing is a very flexible technique for small-scale research. It is not suitable for studies involving many people, but is most helpful for mini-studies and case-studies.

According to Wengraf (2001:5) "semi-structured interviews are designed to have a number of interviewer questions prepared in advance, but such prepared questions are designed to be sufficiently open that the subsequent questions of the interviewer can't be planned in advance but must be improvised in a careful and theorized way". Unstructured interviews are much more casual and unrehearsed, mostly dependent on free flowing conversations.

To successfully accumulate the required information on the targeted social innovation cases for this research, it will be important to interact with the people directly involved in the implementation and regulation of these cases. For the given situation, encouraging discussions in an *information sharing* kind of environment will attain credible results.

Face-to-face interviews will be best suited here, and thus, this research will be employing a semi-structured approach in interviewing its participants. A fully structured interview goes by prearranged questions, and a fully unstructured interview runs the risk of not eliciting the main topic or theme of the undertaken research. A semi-structured interview, however, takes care of both with not all questions being prearranged and considerable room being left for open ended discussions (Rabionet, 2011). For interviews related to this research, the interviewer will have to set up a general structure by deciding in advance the grounds to be covered, and the main questions to be asked during the interview; these should be broad guiding questions. These will essentially serve as an interview guide that is critical for gathering data specific to the research objectives (Baumbusch, 2010). Not all questions are required to be designed and phrased ahead of time. Majority of questions will be framed during the interview, allowing both the interviewer and the interviewee the flexibility to probe into details, or discuss associated issues.

With such questions, interviewees will be free to answer in their own words, and these answers will tend to be more multifarious than a simple yes or no reply. In its initial stage, as proposed by Bryman and Bell (2011), the interviewers can focus on introducing themselves, familiarizing interviewees with the purpose of the interview, and obtaining their inputs on the relevance of the interview topic. Next, the focus should be on emphasizing the legitimacy of the research by drawing links between the involved institutions, and confirming if the interviewee understands and trusts that all their responses will be confidential. At this stage, it is important to present the research as simple and unthreatening (Bryman and Bell, 2011). It is important to bear in mind that

interviews take the form of social interaction, and thus the interviewer must be capable of fostering an environment that will solicit active participation (Baumbusch, 2010). Having established the necessary associations, the interview can progress with a detailed introduction to topic, which should be consequently followed by questions to the interviewee.

This will make the interview more impulsive in nature and allow an easy communication flow between the researcher and interviewee. The termination is far easier with these interviews in comparison to other forms. Several clues indicate closure, such as ending recording, putting papers together, asking for closing remarks, thanking the interviewee for their time and inputs, and so on (Wengraf , 2001). Interviewers may consider undergoing practice interviews (prior to the actual interview) with peers to confirm familiarity with the interview questions, and receive feedback on their two-way communication skills, for efficient utilization of the interview time, and to also make most of the interview by extracting maximum relevant information from the interviewee.

Semi-structured interviews feel less intrusive from the interviewee perspective as they encourage two-way communication. The interviewee could also ask questions from the interviewer. Here the interviewee will be confirming what is already known whilst also providing an opportunity for the interviewer to learn more on the topic. Often the information obtained from semi-structured interviews will provide not just answers, but also the reasons and content for those answers. Semi-structured interviews also allow the interviewees to discuss sensitive issues easily. It will be important that the interviewer take notes during the interview, but these should be brief so as to prevent retarding the pace of the interview and making the interviewer feel stalled. These notes will have to be immediately elaborated after the interview (Rabionet, 2011). The interview information will have to be preferably analysed at the end of interview day, either individually or together with the other involved peers. The results of such an analysis will have to be discussed with other involved members, so they can challenge the perceptions of the interviewer and identify any potential error in interpretations of the interviewee responses.

However, during such semi structured interviews, the interviewer will have to exercise caution as there is a considerable possibility of extra information surfacing. It is highly recommended that the interview responses be discussed with interviewer's team members/peers so as to identify any repetition/duplication in the responses. The interviewer should be careful in identifying the balance between open-ended and focused questions. The most common problem with interviewers include, but are not limited to, failure to listen closely, repeating questions that have already been asked, failure to probe when necessary, failure to interpret the answers correctly, and asking vague or insensitive questions.

The interviews will establish minimum entry and exit criteria. The entry criteria will focus on clearly identifying the relevant stakeholders who will be able to provide the required information for the 70 shortlisted social innovation cases of SI-DRIVE. A minimum of three stakeholders with different backgrounds/perspectives will be needed to offer in-depth information on the cases; collecting data from multiple sources will help minimize interviewee bias and increase the depth and quality of information being gathered (Collins et al., 2005). The exit criteria, on the other hand, will be the identification of the point when it is confirmed that sufficient information concerning the cases has been gathered, and any further search is only yielding repetitive information, and nothing newly revelatory about the cases in question is surfacing, hence seizing the data acquisition process.

4.1.4.2   Participant Observation
SI-DRIVE will also utilise a participant observation protocol to verify and evaluate research propositions as well as to help relevant stakeholders exploit the best practice social innovation models that are identified in the project. The rationale for using a participant observation approach is to help gain an in-depth familiarity of the context in which relevant social innovation models identified in the project can be exploited or implemented. In this respect, the research team will be closely involved with the stakeholders in selected case studies where

exemplary social innovation models identified in SI-DRIVE will be exploited. The role of the research team here is to offer expert guidance to policy makers, citizens and other stakeholders (like social partners, non-profit and private institutions and others, depending on the policy areas) by immersing in their own socio-cultural and political setting over an extended period of time (Glaser et al. 1967). This approach will not only allow the research team to evaluate the impact of the identified exemplary social innovation models across the different policy areas and cross cutting themes in different socio-cultural, national and political settings, but also help to evaluate the relevance of the research propositions offered in the project. Furthermore, participant observation will allow the project team to triangulate the data collected from the different sources (i.e. literature, secondary sources, case study and survey research) (Lincoln & Guba, 1985).

Here the entry criteria will be recognized as the evidence of something happening in field that can be observed, to draw inputs on the cases being covered within this research. The exit criteria will be seizing observation when it is satisfied that the required information has been obtained, and further observation is only recording what has already been observed. Participant observation is both an analytic and a data collection tool, where the researcher has very little control of the research situation. It is defined as a process of systematically describing the events, artefacts, and behaviours surrounding the researcher in a social setting desirable for a specific study (Marshall and Rossman, 1995). The researchers incorporate their unique backgrounds and experiences in reacting and interacting with the events that unfold before them (DeWalt and DeWalt, 2010). This technique puts the researchers in an action packed environment and lets them gather quantitative and qualitative data collection via surveys and interviews (statics, narratives, etc.), as desired (Bernard, 2006). In this strategic method, participants will be expected to blend themselves in a culture, and at the same time, they will be expected to learn to exclude themselves each day, so they can rationalize their visual and auditory experiences into a perspective that can be convincingly documented for research purposes.

It allows researchers to confirm the definitions of terms that people use in interviews, observe issues/events that people may otherwise be unwilling to share because doing may possibly be impolitic, impolite, or insensitive, and observe situations that people have described in the interviews, thereby making them aware of inaccuracies in their descriptions (Marshall and Rossman, 1995). Participant observation facilitates checks for expression of feelings (nonverbal), determine people involved in an interaction, capture the manner in which people communicate with one another, and record the time spent on different activities (Schmuck, 1997).

In using participant observation as a data collection technique (e.g. while participating in events, meetings, steering committee discussions, visiting local activities of the initiatives), the researchers will have to pay close attention to the questions guiding the research, the site under research, observation opportunities available at the site, the representativeness of participant population at that site, and the methods to record and analyse the accumulated data (DeWalt and DeWalt, 2010). To pursue participant observation, the researchers will have to be clear on their research questions, because that will act as the starting point for beginning the observation process. This will help the researchers know where to start looking, however, the more significant focal points of looking and when to end the observation process cannot be predetermined. The researcher will become aware of these details at later stages of their observation process (Merriam, 1998).

Participant observation helps establish a relationship between the researcher and the informants, and exposes the researchers to sensitive activities within the community, of which they would be otherwise deprived because of their 'outsider' status. Observation allows researcher to delve into the cultural parameters and get a close look and feel of cultural members and matters of importance to them, such as leadership, politics, social interaction, and taboos. More importantly, observations form a source of questions that can be addressed in a native language of cultural relevance to the community or group being studied. The researcher being present at the site over a period of time will help minimize informants' reactions in a certain way to the fact that they are being observed (Bernard, 1994; Schensul et al., 1999). Given the nature of this data collection tool, the quality and quantity of data gathered will be entirely reliant on researcher's degree of involvement in the case/culture being studied. With this technique, according to Gold (1958), the researchers will have the choice of assuming either of the four exclusive stances, which are of a total participant (researcher is a member of the

community/group being observed and community members are unaware of observation), participant is the observer (researcher is a member of the community/group being observed and community members are aware of observation), observer is the participant (researcher will participate in the community/group as and when desired and community members are aware of observation), total observer (researcher is not conspicuous and community members are unaware of observation).

With total participant and total observer, community member may develop distrust towards the researcher upon learning his role. When participant is the observer and vice versa, the community members may control and not fully reveal the information of interest, and confidentiality levels may be questioned by these members. All four stances have their share of drawbacks. It is up to the researcher to pick the stance that most suits their case requirement. For this research, the researchers will have to clearly understand their social innovation case, and decide on their level of involvement as a participant and/or observer.

Researchers insist that there is no one way best for pursuing participant observation (Whyte, 1979). One of the important requisites of pursuing this data collection form is to collaborate with the informants by building a strong relationship with them. The researchers will have to conduct the observations ethically, identify their key informants in the group being studied, establish trust with those informants, lay out a process of observation by outlining what will be observed and when, maintain field notes, and document the findings from those notes. Although some cases may demand covert observations, researchers are strongly advised to inform the community that they will be observed. The reasons for observation should also be justified, and anonymity of the observed should be maintained during the final documentation of the observed case to cover the ethical standards for the study being undertaken (DeWalt et al., 1998). After deciding on the observation site of interest, the researcher must attain permission from the community leaders (recommendation letter, affiliation information, funding information) for gaining access to the site. It is always suggested that a site that will allow easy access to the desired data be selected (Bernard, 1994). This must be immediately followed by an intelligent choice of key informants who will act as research collaborators and help the researcher draw in most of the relevant data from the community.

It is very important that the researcher in skillful in establishing a rapport based on trust to share a level of comfort with the community members so they feel safe in sharing even sensitive information because they trust the researcher will utilize and present this information responsibly. To efficiently utilize participant observation as a data collection instrument, the researchers will have to go by unobtrusive actions and dressing; familiarize themselves with the community setting before collecting the data; maintain honesty in explaining the participants' actions on paper; always remember keywords in a conversation to trigger later recollection of events; mentally record the witnessed events; be reciprocal and culturally appropriate; remain tolerant of ambiguity, be flexible and adaptable, stay determined; constantly review what is being observed and confirm its alignment with what needs to be observed (DeWalt and DeWalt, 2010; Taylor and Bogdan, 1984; Wolcott, 2001).

4.1.4.3   Focus Groups

A focus group is a group of experienced individuals chosen and brought together by the researcher for them to discuss the research topic of interest to the researcher (Powell et al., 1996). Data acquired via focus groups is through verbal communications and narratives. It facilitates discussions amongst the group participants where they hear what others have to say, and also have the flexibility of refining their say on the topic (Ritchie et al., 2013). Focus groups tend to be carried out in conjunction with other methods within a single research; for instance, focus groups may be employed preliminarily to initiate exploring the topics of relevance which can be further investigated using the interview approach (Ritchie et al., 2013), or to define survey questions. The entry criteria for focus groups will require a minimum of four stakeholders having some experience with the cases being investigated. The exit criteria will be the confirmation that the needed information has been successfully recorded, and further discussions are only resulting in redundant outputs.

Focus groups are used in cases where interactions between targeted people are expected to be a potential source of data generation. In situations where the researcher is interested in exploring multiple perspectives on a topic in an interactive and emotive manner, focus groups tend to be a quick and cheap method of interviewing people together than individually interviewing them. Focus groups tend to reduce the possibility of recording individual perspective (Ritchie et al., 2013). Focus groups are sometimes preferred over individual interviews, as they are acknowledged for fostering a natural environment where participants present their individual views, and also listen to others involved, which induces a tendency of influencing one another, just as people do in real life (Kreuger and Casey, 2009).

Focus groups are potentially useful for cases where power differences between the participants and decision makers or higher professionals exist; when the researcher is interested in the day-to-day use of language and culture of a particular group; and when the researcher wants to confirm the degree of consensus on the research topic (Morgan and Kreuger, 1993). These help co-construct new knowledge, evaluate services, gauge opinions, generate theories, interpret cultures, and reshape individual views. Participants are allowed to be more spontaneous with focus groups where they bring in their individual frame of reference on the research topic. Particular aspects such as their general understanding, language use, and points of emphasis become more visible to the researcher within focus groups (Ritchie et al., 2013).

Focus groups need not necessarily be run only once, they can be reconvened if certain aspects of the research topic are expected to change over time, or also in cases when the first focus group was more oriented at familiarising the participants with the topic, due to its idiosyncratic nature (Ritchie et al., 2013). Every focus group should have a moderator/facilitator/researcher, and they will be responsible for facilitating discussions within the group. A focus group can comprise of four to 12 participants, plus a moderator, but there have been instances where researchers have run successful focus groups with as less as two, and as many as 16 participants; a focus group size of 8 members is used most often (Bernard, 2012; Gibbs, 2012).

Researchers have to remember that while a small group runs the risk of being dominated by one or two overactive members in the group, a very large group runs the risk of becoming unmanageable (Bernard, 2012). It is ideally recommended that the focus group members should not know each another; heterogeneity (in profession, position, gender, class, etc.) should be kept to a minimum (Morgan, 1988) to ease communication. It is important that the researcher brings in a cohort feeling within the group so that the participants are more comfortable in opening up in front of people who, they think, understand them, especially when the focus group concerns a sensitive topic. It is strongly advised that the moderator should not be known to the participants from an earlier occurrence, and neither should they be employees of the moderator since hierarchy inhibits openness (Bernard, 2012).

Nevertheless, it is important to group the members of a focus group in relation to the research objectives. In some approaches heterogeneity as a part of the construction of the research situation helps to encourage discussions between the participants by pointing at different perspectives and opinions and examine the balance of interests (see e.g. expert panels, chapter 4.4.1).

The outcomes of a focus group are largely dependent on the moderator's interpersonal skills. They should be well versed with handling conflicts, and should also be able to encourage participation, while being non-judgemental and reflective. Focus groups can increasingly drift off topic, the moderator should be skillful enough to identify if the new issues being discussed contain relevant information that can be recorded, and bring back the discussion to the topic of main interest (Gibbs, 2012). At the start of a focus group, the moderator (researcher) will be responsible for introducing the research topic and the participants, laying down the ground rules, and facilitating the discussion. The moderator can take along or appoint an observer who will take notes and manage other recordings, if any. Duration for focus groups varies from 45 minutes to 120 minutes. The moderator will have to ensure that the discussion flows progressively, and interrupt to challenge the members at the right times to tease out the differences in members' perceptions and understandings on the topic being discussed. Moderators should strictly refrain from expressing too much personal approval on a

point being made to avoid being perceived as partial towards specific group members (Kreuger, 1988). At the end of focus group, the moderator can sum up the group discussion and thank the members for their participation.

If willing, the moderator can send out transcripts post the focus group for participants to verify the documented information and also make additional comments, if desired (Gibbs, 2012). One of the problems with focus groups is getting the relevant participants together. Locating and recruiting participants for focus groups can be very time consuming. Researchers will have to exercise patience, and use tactics such as advertising the study, and also incentivizing people with prizes and gift vouchers for their participation. Researchers will not have much control over the entire discussion, as they are obliged to allow participants to interact, question and challenge one another's opinion and clarify their individual doubts.

Since focus groups involve small numbers of participants, they have limited potential in terms of the possibility of generalising findings/outcomes of these discussions to an entire population; focus group participants can thus not be treated as a representative sample. Members of a focus group develop an influential environment which might make it difficult for the researcher to identify individual member views. Given the nature of focus groups, total confidentiality cannot be assured because of the other members involved in the group, this might inhibit some members from divulging sensitive information (Tolich, 2009). Moderators will have to efficiently lead the focus group under all circumstances. They will have to demonstrate amalgamated skills of a researcher, an ethnographer, and even a therapist. The moderators will have to be sharp in identifying the members trying to suppress the other members in the group and controlling their involvement without being harsh. At the same time, they will also have to keep an eye out for shy members in the group and get them to contribute without coming across as intimidating (Bernard, 2012).

4.2 STATE OF THE ART: METHODOLOGIES, CASE STUDIES USED IN SI PROJECTS

4.2.1 First inspection of SI typologies

Social innovation is a relatively nebulous concept. In order to operationalise the concept and to make discussions about social innovation more meaningful, it is important to be more precise in the usage of terms. This will require looking beyond using social innovation generically, or as a unit of analysis. In particular, more clarity on what constitutes social innovation is required. In the words of John Cohen and Norman Uptoff (1980), clarity should be provided through specificity. One way of doing this is to develop a typology of social innovations. The importance of developing a typology for social innovations has already been noted (e.g. Hochgerner, 2011). Below in table 5, one possible typology of social innovations, developed as a part of the TEPSIE project (2014) has been outlined.

Types of social innovation	Examples
New goods and services	new interventions or new programmes to meet social needs
New practices	new services which require new professional roles or relationships
New processes	co-production of new services
New rules and regulations	creation of new laws or new entitlements
New organisational forms	hybrid organisational forms such as social enterprises

Table 5: TEPSIE: One potential typology

However, this typology raises a number of questions. First, what are the other categories that are omitted in this typology? Should a typology be focused on tangible forms of social innovation that can be observed in the actions of individuals, groups and institutions, or should it be extended to include new cognitive frames as a form of social innovation? Another issue is how should the levels of social innovation be conceptualised? In particular, it raises questions about the relationship between innovations at the micro, meso, and macro levels.

Clearly, there will be numerous attempts to classify and categorise social innovations. In order to operationalise the concept effectively, a typology of social innovations needs to be finalised. This will be done by undertaking literature review to identify existing typologies. Academic literature (including online journals such as the Stanford Social Innovation Review and others), and grey literature (from third sector organisations, think tanks, public agencies etc.) will be reviewed which would form a potential basis of proposing a typology for social innovations.

Because the typology development of SI-DRIVE will be done mainly after finalising both empirical phases the inspection of already existing SI typologies will be done before the second empirical phase (in-depth case studies). Within the analysis of the first empirical phase (global mapping) a first typology will be derived from the 1.000+ cases based on the theoretical framework (mainly oriented at the five key dimensions).

4.2.2 Background for the analysis: SI projects

To develop a detailed conceptual and methodological framework of the project, a state of the art review of quantitative and qualitative research methodologies and tools currently used in social innovation research was conducted. The focus was on the social innovation *research* projects of the EU's 5th, 6th and 7th framework programmes for research. These projects cover a wide variety of policy fields across different Member States and have been developed from different theoretical framings. In total, the data collection and analytical methods of 32 research projects were reviewed.

Framework Programme	Social Innovation Projects
FP5 Projects	Conscise – Contribution of social capital in the social economy to local economic development in western Europe PERSE – Socioeconomic performance of social enterprises in the field of work integration Singocom – Social innovation, governance and community building
FP6 Projects	Include-ed - Strategies for inclusion and social cohesion in education for Europe Katarsis – Growing Inequality and social innovation: alternative and practise in overcoming social exclusion in Europe Lifelong Learning 2010 – Towards a lifelong learning society in Europe: The contribution of the education system RECOWOWE – Reconciling work and welfare in Europe
FP7 Projects	Citispyce – Combating inequalities through innovative social practises of, and for, young people in cities across Europe CIVICWEB – Young People, the Internet and Civic Participation CIVISTI – Citizen Visions on Science, Technology and Innovation COCOPS – Coordinating for cohesion in the public sector of the future CRESSI – creating economic space for social innovation CSEYHP – Combating social exclusion among young homeless populations EFESEIIS – enabling the flourishing and evolution of social entrepreneurship for innovative and inclusive societies GUSTO – Meeting the challenges of economic uncertainty and sustainability through employment, industrial relations, social and environmental policies in European countries IMRPOVE – Poverty reduction in Europe: Social Policy and innovation Innoserve – Social Platform for innovative social services ITSSOIN – Social Innovation and civic engagement Lifelong Learning 2020 – Towards a lifelong learning society in Europe: The contribution of the education system LIPSE – Learning from innovation in public sector environments Response – Understanding and Responding to Societal Demands on Corporate Responsibility SEFORIS – Social Enterprise as a force for more inclusive and innovative societies SERVPPIN – The contribution of public and private services to European growth and welfare, and the role of public-private innovation networks SIMPACT – Boosting the impact of social innovation in Europe through economic underpinnings Social Polis – Cities and social cohesion SocIEtY – Social innovation – Empowering the young for the common good SPREAD – Sustainable Lifestyles 2050 TEPSIE – The theoretical, empirical and policy foundations for building social innovation in Europe Third sector impact – The contribution of the third sector to Europe's socio-economic development TRANSIT – Transformative social innovation theory project WILCO – Welfare innovations at the local level in favour of cohesion wwwforeurope – Welfare, Wealth and Work for Europe

Table 6: Social innovation projects included in the state-of-the-art methodological review

Additionally, we reviewed also one project from the Coordinated Support Actions Programme of the 7th Framework Programme because of including mapping of SI cases in the framework of sustainable innovation: Public participation in developing a common framework for assessment and management of sustainable innovation' (**CASI**, http://www.casi2020.eu/).

All the European Research Framework projects were reviewed specifically with reference to the methods which are core to SI Drive: mapping of social innovations; case study research; and analysis of case study data. In particular, we were interested in data collection instruments used and the way in which cases were defined, selected and analysed.

4.2.3   Overview of methodologies used in social innovation research

As suggested by their titles, EU social innovation research projects have addressed a wide range of questions. These include those exploring the theoretical underpinnings of social innovation (e.g. TEPSIE, EFESEIIS) and those focusing on specific policy fields such as welfare and poverty (e.g. RECOWOWE, WILCO, IMRPOVE), social inclusion and cohesion (e.g. Include-ed, ITSSOIN), young people (e.g. Citispyce, Society), the economy and economic underpinning (e.g. GUSTO, SIMPACT). Other areas of focus include sustainable futures, urban spaces and cities, and the role of social innovation in public sector reform.

The diversity of research questions is reflected in the variety of methods deployed to address them. The complexity of social innovation itself (in terms of definition, identification and implementation) also means that different methods, tools and instruments have been used by researchers. *As a result, almost all projects take a mixed-methods approach and draw on a range of theories about how frameworks of social innovation can be built, analysed and understood.*

Predominantly, the baseline studies include a critical literature review, policy analysis through document review, secondary analysis of existing data and theoretical frameworks. According to the objectives of the project, different theoretical emphases are used. The projects frame an integrated, holistic research approach combining quantitative and qualitative methods and tools. All projects formulate research questions or hypothesis as the basis of the research problem. Very few projects conduct original quantitative research in the form of surveys and these are typically with limited target groups, such as third sector organisations. The majority of projects are thus based on combining secondary data with original qualitative research.

Case studies are incorporated into the majority of research projects – in some instances the emphasis is on mapping a relatively large sample of social innovations (e.g. more than 20, like WILCO, SINGOCOM, and especially CASI), whereas other projects have just a few cases (e.g. 4-6 in total). Unsurprisingly, the focus is primarily on European countries and the comparison between them. In complement to the comparative perspective some research projects include an historical dimension to analyse the dynamics and development of social innovation in their specific field.

Example 1: Nomination, review and mapping of more than 400 cases – CASI

Within the CASI project more than 400 sustainable innovation cases were nominated by the project partners, reviewed and selected by a steering group. Focusing on sustainable innovation (climate action, resource efficiency and raw materials) social innovation cases are one of seven innovation types of the mapping and can be made valuable for SI-DRIVE. The cases are coming from all the EU member states and are directly linked to the Horizon 2020 priorities for sustainable innovation.

Frequently, however, case studies are used for in-depth analysis and illustration. Case studies are selected on the basis of the theoretical foundations to explore and test the theory within a real-life context and to gain an in-depth view. The case study approach provides contextual-dependent practical knowledge about social

innovation in the specific research field. A comparison between different cases on national and European level (but also on the international level: e.g. TEPSIE, TRANSIT, LLL 2010) is conducted in most projects.

Case studies are typically built up on the basis of semi-structured or open interviews with stakeholders and experts. Also, many projects implemented focus group discussions in their empirical research phase. Most of the projects combine case studies with some other methods such as action research, lab experiments, future visioning workshops, peer/ participatory research, life stories, observation, and pilots of social innovation implementation and testing of tools.

Finally, research projects typically concluded with a combination of outputs such as policy recommendations, social innovation indicator sets and practical tools, or theoretical diversification or new theoretical approaches. More recent projects are increasingly using video or other creative/ digital media to communicate and disseminate the findings of their research. In the following sections, the case study research and the mapping approach are exemplified in general.

4.2.4 Case study research

Selection of cases

A review of the social innovation projects listed previously clearly showed that a clear description of how cases were selected is missing from most methodological explanations. Where the rationale for selection of cases is set out, it is primarily based upon:

- The theoretical underpinnings of the project dictating a set of criteria which all cases should meet.

- A requirement for diversity such that the overall selection of cases will enable different aspects of the theory, phenomena or issue under investigation to be thoroughly explored and illustrated. Some projects such as Lifelong Learning 2010 place significant emphasis on this "logic of maximum variation" (Miles and Huberman, 1994).

- Ensuring an appropriate geographic spread across Europe / the region under study. That said, it should be noticed that case studies in many projects appear to be selected exclusively or predominantly from the countries (and in some instances cities) where the research partner institutions are located, suggesting a strong element of convenience sampling.

- Pragmatic considerations, such as necessary language skills, existing networks and contacts which facilitate recruitment, etc. which determine the feasibility of the research

Example 2: Case study selection method – CITISPYCE

This project identified three key selection criteria based on the preliminary development and theoretical work of the study. In line with the overall focus of the project the aim was to involve young people of ethnic minorities or with a migration history in deprived urban areas. Areas were selected on the basis of:

a) a socio-economic situation that is less favourable than city-wide average,
b) age structure that ensures that the neighbourhood is inhabited by young people (under 25)
c) a population composition that characterises the area as ethnically diverse.

Within each city, two areas were selected that would show these characteristics of social structure and deprivation, but differ in their social structure and social history as well as in the opportunity structures and social infrastructure that are available for young persons. Area sizes were to be within a range of 5,000 and 50,000 inhabitants.

In addition to the core criteria, pragmatic considerations were allowed wherein each partner was allowed significant discretion in their choice of cases, provided a plausible rationale for selection could be given.

Along with the diversity in research objectives and policy fields, there was also variation in the unit of analysis and what constitutes a "case" in each project. For some it was a city, in others a neighbourhood, and for others, it is specific social innovation projects. Some projects had a wealth of potential cases to choose from, while others were looking deliberately for rarer or more niche examples. Naturally this determines to a large extent the nature of the criteria and the degree to which pragmatic and feasibility considerations come into play.

Some projects are doing a kind of meta-analysis and stocktaking of already existing cases of social innovation (from existing databases, former research projects, policy initiatives). Especially SIMPACT is undertaking this by focusing on a new, specific factor: economic underpinning.

Example 3: Business case studies / innovation biographies – SIMPACT

The evidence based and lifecycle reflecting approach of SIMPACT is combining stocktaking and meta-analysis of cases from secondary sources (existing databases, former research projects, policy initiatives) under the new focus of economic underpinning with basic research through Business Case Studies and social innovation biographies (this method is reviewed in detail in chapter 4.5). – following the approach "from general meta-analysis to more concrete and determined levels of specific social innovations processes and business models". While business case studies focusing at the economic perspective of underlying business models informing social innovation the concept of social innovation biographies is focusing on the reconstruction of social innovations from the idea to diffusion by using narrative interviews.

Methods and instruments of data collection

After agreeing selection criteria for cases, the majority of projects developed a template which partners collecting data on cases must use. This template is essentially a list of the core questions which must be answered, typically including both open-ended content relating to the nature of the case, outcomes and impact etc., and closed questions to gather data in a standardised format for the classification of cases. In some instances it is a document which must be completed as specified, while in others it serves more as a guide.

The actual methods for collecting data on cases are, as expected, hugely varied. Primarily they are qualitative (predominantly in-depth interviews and focus groups) but also tend to make extensive use of secondary data and pre-existing literature. Depending on the scale and scope of the case study, some included other methods such as surveys or more ethnographic/ observational approaches. We identified only one example of longitudinal[9] case studies, following a number of communities over several years (INCLUDE-ED).

Example 4: Case study data collection – INCLUDE-ED

This project aimed to analyse educational strategies that contribute to overcoming inequality and which promote social cohesion. The focus was on interactions between educational systems, agents and policies up to the compulsory level. A number of communities were selected as case studies and were followed over four years. During the course of the study, a number of different methods were employed:

- Open-ended interviews (with local representatives and professionals)
- Daily life stories with end users (family members and students)
- Focus groups with professionals
- Observations
- Questionnaires (of students and family members).

In the majority of projects, data collection instruments were developed by the core project team and implemented locally. Very few projects described the process of developing their instruments or whether they were piloted in the field. Beside CITISPYCE one other exception is ImPRovE, a project looking at issues of poverty, social policy and innovation and how greater social cohesion in Europe can be achieved. In this instance there was a "spiral" of methodological development. It began with a pilot to test the investigation tools, followed by a period of assessing the resulting findings alongside quantitative data emerging from another strand of the research and previous theoretical work.

Where cases are social innovations or projects, they were typically chosen by partner institutions in each location. As experts in their field and locality, the prevailing expectation is that they are best placed to identify suitable examples. Several studies also report using existing networks of contacts and stakeholders (snowball sampling) to find interesting examples and cases. In some instances, such as ImPRovE, an open call for "promising initiatives" was made in six EU Member States (selected on the basis of theoretical and practical considerations) via various networks.

Social innovation networks being a source for local case selection is also relevant in TRANSIT. Societal transformation is studied on the background of social innovation, game changers and system innovation. The quantitative-qualitative methodology has its empirical source for analysis in transnational networks with local social innovators.

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[9] Within Seforis longitudinal survey data will be used for testing and validating conclusions.

Example 5: Network based research– TRANSIT

TRANSIT is selecting and conducting case studies within the main social innovation networks. The foreseen meta-analysis and theory testing will be done on the ground of local manifestations of these transnational networks (like The Impact-Hub, Ashoka, Time Banks, and INFORSE). Within local cases of the international networks in-depth case studies with qualitative interviews, participant observations and document reviews will be undertaken.

An interesting approach for social innovation research including civil society is citizen panels (e.g. CIVISTI, CASI). This is done for data collection but also for validating and testing research results by the people - and for empowering people.

Example 6: Citizen Panels - CIVISTI

CIVISTI has established a new concept of citizen participation on a long-term foresight. The new method is described as innovative and it is based on the idea that citizens are the carriers of societal concerns and expectations to the future. The approach comprises three steps. At first, European citizens were asked about their visions for the future. Therefore, 7 citizen panels with 25 people were established. The people in the panels were not representative, but there is diversity in age, gender, education and occupation. Informed by information and input from experts in specific fields, the citizens made a long-term view into wishes, concerns and suggestions for the future. In the next step, the visions from the citizen panels were analysed and transferred into research an agenda and policy options for European research. This was done in a two-day stakeholder- and expert workshop. The result was a list of recommendations for policy and research options based on the citizens visions. In the last step, the results were given back to the citizens and they were asked to make a priority on the acquired S&T agenda and policy recommendations.

Methods of data analysis and presentation of cases

Comparative analysis is the main form of analysis adopted in case study research. Most studies, however, provided scant detail on the actual processes and methods used to do this. More or less explicitly, it is also clear that most projects sought to validate and compare the data emerging from case study research against their theoretical work, findings from other work streams within their project, and secondary information, as appropriate. Thematic analysis is also evident in many studies.

Example 7: Case study analysis – WILCO

This project aimed to understand how innovation in local welfare can strengthen social cohesion and lower social inequalities. A core part of the research was 20 case studies of European cities. Unusually, it included a large amount of quantitative data analysis: on the housing market, social inequality and exclusion; the labour market; and child care availability – all drawn from the Eurostat Database Urban Audit. This was supplemented by 36 in-depth interviews per city. The project team then developed guidelines for the analysis. Each case included a summary of what the case is about, and what is innovative about it. The analysis grid then comprised three themes: (a) Conceptions and ways of addressing users (b) Internal organisation and modes of working (c) Interaction with the local welfare system. This analytical structure facilitated cross-case comparison on the themes of high priority for the study.

In almost all projects, researchers chose to develop a consistent structure to present the findings. This is considered to facilitate cross-case comparison and ensure ease of readability. In some instances they take a more analytical and evaluative approach, drawing out key findings to the main research questions (e.g. TEPSIE). In others, they present the facts in a more descriptive manner, often closely aligned to the selection criteria (e.g. Singocom).

Example 8: Case study presentation – TEPSIE

WP5 of this project looked at examples of citizen engagement in social innovation. Cases were selected to illustrate three different functions of citizen engagement, across a two dimensional typology of engagement, in different global contexts. In total, six case studies were produced, exemplifying very different social innovation projects. The chosen structure was designed to highlight the key findings:

- What is the project – brief description of what the engagement involves
- Origins – Where the activity or project came from; any important contextual information
- Key resources – What key resources were needed to make the activity work
- Value – How interviewees describe the value that the approach brings
- Challenges – The main difficulties related to trying to implement the activity
- Outcomes – What the activity has led to and the impact it has had.

Example 9: Case study presentation – Singocom

This project looked at the nature of social innovations and the dynamics that create socially innovative action. One important aim was to develop an alternative model of local innovative development – AMOLIN. Case study reports thus contained a brief description of the socially innovative dynamics and the facts relating to the various dimensions of AMOLIN: Territory; Satisfaction of human needs; Resources for local social economy; Organisational and institutional dynamics; Local authorities and the state; Culture and identity; Views, visions and models of social innovation; Constraints and controls on development; Relation with the "outside world"; and the methodology.

4.2.5 Mapping

In comparison to case study approaches, very few of the social innovation research projects reviewed make use of 'mapping' as a method. It is also clear that even in those instances, "mapping" is used variously to mean different things by different projects. Although it most commonly refers to some kind of attempt to identify innovations / projects within a defined geographic area, this is not always the case.

For example, the TEPSIE project published a report called 'mapping citizen engagement in the process of social innovation'. This presented a conceptual framework outlining the ways in which citizens could be involved in the generation of social innovations. The framework set out four quadrants: understanding needs and problems; understanding larger patterns and trends; crowdsourcing solutions and; co-developing solutions. They then "mapped" various types of citizen engagement activities onto these four quadrants.

For other projects, it is unclear what the 'mapping' referred to in future Work Package descriptions entails. For example ITSSOIN refers to mapping as the objective of seeking "to investigate different country specific configurations of the third sector". Similarly, SocIEtY will have two work packages which involve "mapping". WP3 will map current policy processes and social support measures, however, the material published to date (September 2014) appears to be a review of relevant policies; it is not clear in what way it is a "mapping". WP5 will map local support networks but the methodological approach for this has not yet been defined.

The project CASI is based on a subsequent process of mapping more than 400 cases all over the European member states. Social practices representing unique social and technological innovations will be considered in order to investigate specific factors of sustainability in relation to social and business-oriented challenges.

Example 10: Mapping of Cases – CASI

CASI is undergoing a mapping process of different development steps: First, the cases have to be described and nominated on the basis of a common standardised template (with some open questions as well). Second, the cases will be reviewed and typologised on the background of the given template and nomination to make sure that every country and every relevant key dimension is represented well. Then a quality review and selection process of relevant cases takes place. The selected and final cases will be improved by clarifications and new relevant, more extensive information – reflected in a public database called CASIpedia. Within this database the cases could be grouped and selected by the given criteria.

4.2.6   Combining case study research and mapping: The example Innoserv

From the perspective of SI Drive, there is one previous project which is of particular interest and relevance because of its comparable methodology approach. Innoserv ran from 2012-2014 and focused on identifying the future potential of innovative social services including the multifaceted activities of different stakeholders, as well as the policy frameworks at different levels of governance geared to address the needs of citizens.

The project adopted a two phase approach:

1. The identification of innovative service practices from across Europe

2. A set of 20 selected in-depth case studies, drawn from part A.

It is important to note that Part A is not referred to explicitly as mapping, but evidently closely mirrors the objectives of the SI-Drive Global Mapping Phase 1.

The identification of projects and practices (mapping)

The search for relevant examples of innovative practice in three fields was led by theoretically derived criteria. Examples were identified by national (regional) teams by contacting a wide range of stakeholders and involve them in the selection process. 'Snowball Sampling' and 'peer recommendation' approach was the main basis of the search – developed from bottom up examples from network.

For each example, a structured template (1-2 pages) was completed to describe the innovative practice and to gather information on the innovative character, the origins of the innovation and its impact. There was particular effort made to involve stakeholders from NGOs and NPOs, user groups, policy makers, private entrepreneurs, research institutes/universities, state officials, and European institutions. About 750 service providers were contacted and in total, 167 innovative practices in health, education and welfare were sampled in 20 European countries: 21 came from Eastern Europe, 25 from Italy, 35 from Scandinavia and 86 from North Western Europe.

Data was collected using a standardised two page template. The template covered:

*   Types of innovation (including organization form, finance, forms of service delivery etc.)

*   Origins of innovations (working methods, unmet needs etc.)

- Influencing factors and drivers for innovation

- Impact of the innovative service for the user, service provider and society.

In practice, the method of identification was not identical in all countries: Some partners integrated this template in interviews with chosen professionals and stakeholders taking into account the representativeness of the different service fields of the project. One partner analysed 350 practices submitted for awards on social innovation. Project partners that were member organisations used their network to distribute the template. Often they made a first selection of contacts. As the working field of some of them is specific this may have influenced the representativeness of the several fields.

The selection of case studies

On the background of the mapping 20 examples of innovative services were then selected as case studies to be portrayed in videos/podcasts to facilitate virtual discussions. A five-step process was followed:

Step 1: Selecting a pilot: In order to test the procedure of visualizing the social service examples, the Consortium decided to select a pilot project. This served as a chance to test the method and filming approach, and validate the quality of the video agency partner. The selection was based on theoretical criteria and pragmatic considerations.

Step 2: Clustering the service examples: The examples gathered during the mapping phase were clustered into six service fields; some being comparable to the SI-DRIVE policy fields. In addition to the original categories of 'education',' health' and 'welfare', the cross-sectoral fields of 'education & health', 'education & welfare' as well as 'health & welfare' were added.

Step 3: Scenario planning for each cluster: Expert groups did scenario planning and PESTLE analysis to identify and then to 'score' the importance of key drivers of innovation and the changes related to them for social services.

Step 4: Making a pre-selection: The evaluation and selection of the projects was led by the identified drivers of the scenario planning. It was the task for all groups to identify 2-4 innovative ideas (2 or more projects could be summarized under one idea) out of their list of examples, except for the 'welfare' group which was allowed to suggest up to 8 projects for the final selection.

Step 5: Making a final selection: The groups presented their results at a Consortium meeting and a pre-final list of 24 projects was recorded. A content-wise comparison and a desire for regional balance further reduced the list to 19. The comparison was made by checking the number and variety of criteria of innovation that the single projects were able to cover. Subsequently, the consortium analysed and compared the projects by the specific target or user groups, the national context and the field of service. Following this, partners were asked to suggest other projects from the mapping phase to fill some gaps identified in the areas of homelessness and technological development. The final selection was made by the InnoServ Executive Group.

Data capture, analysis and reporting of case studies

Following on from this, a set of theoretically derived criteria was agreed for the evaluation of each service model case study. Data was then captured through in-depth interviews with staff and users, the recording of audio-visual material, and the preparation of scripted videos.

The analysis process involved:

- The connection of visual material with earlier theoretical work and the developed matrixes.

- Systematic documentation (written case study) of activity of the selected, innovative projects/stakeholders.

- Discussions on the collected information and visual material with the selected stakeholders, selected members of consortium and advisory board.

In addition to the video output, there was a 2-5 page summary of each case study. The template for this was tested with the original pilot case study, then reviewed and agreed by all partners.

4.2.7 Implications for SI Drive Methodology and Tools

This review of EU social innovation research projects reveals a number of significant implications for SI Drive:

1. In general, detail on methodology in these projects is light, but some more recent projects are including more detail. SI Drive should continue the trend to transparency, reporting on a carefully developed and justified methodological approach.

2. Selection of case studies on the basis of a combination of theoretically derived criteria and pragmatism is standard practice. However, we should be wary of falling into the trap of convenience sampling and guard against selecting only case studies which are geographically close to project partner institutions.

3. The selection of cases from the global mapping for the in-depth case studies should be based on the experiences of the other SI projects. Nomination of 300 out of the 1.000+ cases which will be reviewed by a steering group for the final selection of 70 cases seems to be a good approach.

4. A case study data collection template which allows for the collection of both standardized factual information about a project or practice, alongside open questions which allow for the uncovering of deeper insights helps to ensure consistency across multi-country, multi-policy field studies. The inclusion of questions specifically to address theoretically-derived themes and ideas, as well as research questions relating to project impacts etc., appear to facilitate the subsequent comparative analysis.

5. Case studies which combine data from multiple sources, or obtained through mixed-methods approaches, yield rich information and allow for a degree of validation. Other methods for ensuring validity include having key informants review the case study report, and maintaining a "chain of evidence", that is, ability to demonstrate the connection between the original evidence and the final conclusions.

6. Setting forth an analysis plan is also important, and should be a part of the analysis method chosen for SI-DRIVE (mainly QCA) – e.g., determining what variables will be compared between cases, exploring and applying logic models, etc.

7. The Innoserv project may serve as a useful model on which to base our process for moving from the Global Mapping phase to the final selection of 70 in-depth case studies.

This methodology review of SI projects will be continued for the iterative methodology development of SI-DRIVE after the first empirical phase (global mapping) in order to make use of the experiences of other projects for the in-depth case studies.

4.3   STATE OF THE ART: METHODS USED IN INNOVATION STUDIES

4.3.1   Introduction

Innovation studies – understood as the combination of economics of innovation, sociology of science and technology, and innovation policy research - have a history of more than 50 years. In fact, early empirical studies of agricultural innovations even date back to the 1930s. Both economics and sociology, in particular also their historically oriented branches, have contributed to a deeper understanding of innovation, and policy research has concentrated on the justification and influence of policies to foster research and innovation.

Research on social innovation has a much shorter history. It emerged about twenty years ago in response to the general discontent with the neglect of the social dimension in the then dominant economics of innovation in particular. Interestingly, social innovation research did not emerge from within the established scientific disciplines but rather driven by externals to academia and practitioners, who were engaged in finding solutions to problems in society, but without necessarily focusing on technology.

As a consequence of this development, research on social innovation as a practice-led field has tended to recur to methods and approaches that were invented in the context of use rather than drawing on latest scientific methods. This had consequences for the scientific recognition of social innovation research, but also for the quality of some of the research that has been conducted.

It is thus time to bridge the gap between innovation studies with its rich body of theoretical underpinning and methodological approaches on the one hand, and social innovation research on the other. A first step in this regard was already made by SI-DRIVE by reviewing the theoretical literature on different traditions of innovation studies and relating it to social innovation (deliverable D1.1). As a second step, the methodological gap shall be closed with this chapter.

It is probably fair to say that the methodological state-of-the-art in innovation studies is much more advanced than that of social innovation research, and the latter can benefit a lot from revisiting the experiences made in innovation studies and incorporating them in the future programme of social innovation research. This is also an ambition of SI-DRIVE which implements a thorough programme of qualitative empirical research on social innovations in different fields and world regions. Against this backdrop, this chapter aims at revisiting some main strands of methodological approaches that are common in innovation studies. It aims to make sure that SI-DRIVE can benefit from and build on a better understanding of the latest methodological developments in innovation studies in the further design of the methodologies it uses. Correspondingly, the focus is put on qualitative research methods and their use in innovation studies.

First, a broad overview will be given of major methodological developments in innovation studies, before going into more detail with regard to qualitative case-study methodologies used. These will also be underpinned by projects examples. Finally, some lessons for case-study research on social innovation will be extracted with a particular emphasis on the requirements of the SI-DRIVE project.

4.3.2   Innovation Studies Methodologies - The Big Picture

First, we want to give a broad overview of general methodology developments in Innovation Studies. A historical perspective is presented, to help understand why certain methodological inroads were pursued at certain moments in time.

The roots in the social and economic history of science and technology

Innovation Studies have their roots in historical studies from both economic and sociological perspectives. Being exploratory in nature, these historical studies concentrate on individual cases of major innovations, and they were important as a foundation for subsequently identifying typical "patterns" of innovation that could inspire theory development.

Large scale efforts of systematic empirical research

A major step forward in conducting systematic empirical research on innovation patterns was made in the 1930s, with research innovation practices in the agricultural sector. These can be regarded as the first large-scale attempts to look into innovation patterns across different cases and draw generalised conclusions from these.

With World War II efforts were re-oriented towards military missions, including, for instance, the Manhattan project. In essence, the ambition of innovation research was very much concerned how to make better use of scientific knowledge for political ends (Bush 1945). After the Second World War and with the onset of large public and industrial labs evolving into major players in research, the attention shifted to the organisational dimension of innovation. This development needs to be seen against the background of the growing recognition of innovation as a main source of growth (Solow 1958), and thus as an important determinants of economic, and thus ultimately of political, power. The famous large-scale empirical studies such as Traces and Hindsight were conducted in the late 1960s to better understand the patterns and impacts of innovation. It is important to highlight these studies because they pioneered novel empirical methods and were inspired by theoretical reasoning about the nature of innovation and technical change, albeit based on a linear science-push or demand-pull thinking.

The growing demand for policy research

Research and innovation have become major targets of public policy in the course of the past decades. Initially been driven by major political challenges (e.g. famine, defence, etc.), it became increasingly embedded in the debates about economic development and competitiveness. With growing public resources being invested in research and innovation, the need for justification of these public investments was equally growing, in particular in times of tightening budgets.

Against this backdrop, science, research and innovation policy research has emerged as a distinct trajectory of innovation studies. It started from the argument that policy support should compensate for under-investment in research and innovation in a market environment. On the one hand, policy research was thus expected to critically analyse the actual benefits of public investment in research and innovation. On the other hand, it was soon recognized that crowding-out effects and limits to additionality question the effectiveness of research and innovation policy instruments and may easily degenerate into mere public subsidies to the private sector and divert entrepreneurial energy towards obtaining subsidies.

Impact studies and evaluations became more common to learn about the ambivalent effects of research and innovation policies. Initially they were underpinned by the then prevailing linear model of innovation, assuming a unidirectional knowledge flow from science and research to implementation, which came to dominate after the Second World War. Even with the introduction of the demand-pull element, the linear thinking continued to prevail and inform policy. Since the 1990s, an ever-improving understanding of the complexity of research and innovation systems led to more sophisticated approaches to impact analysis and evaluation.

Today, policies devoted to supporting innovation and knowledge diffusion span a vast territory. Multiple studies have concluded on the importance of a comprehensive approach that is able to sustain a strong science base, as well as a network of scientific and research clusters where new and innovative ideas are nurtured.

This in turn requires long-term efforts, public support of basic as well as applied research and development (R&D), policies vis-a-vis the general public supporting novel and open attitudes and behaviour towards change, as well as new forms of co-operation between science, industry and other stakeholders. The OECD Growth project (2001) concluded that Governments have a role to play: (i) by ensuring the generation of new knowledge and by making their own investment in innovation more effective; (ii) by improving the interaction

between the main actors in the innovation system; and (iii) by influencing incentives for private sector innovation. Figure 10 illustrates the range of policy measures considered.
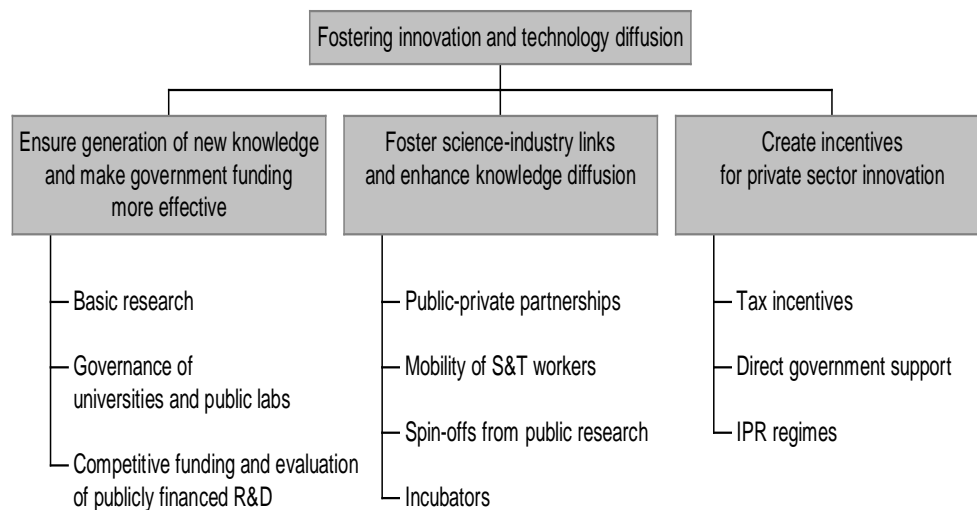
Figure 10: Main policy domains for "Fostering innovation and technology diffusion"

In recent years, the notion of systemic instruments in innovation policy has become very influential (Smits and Kuhlmann, 2004). It stresses the importance of looking at the inter-dependencies of the different policies and the need for new forms of intervention enhancing systemic mechanisms rather than just addressing individual actors.

Policies and policy mixes to coherent, broad support within (and outside) governments for long-term objectives is important, as well as the presence of mechanisms to underpin long-term commitment to these objectives. This typically requires co-ordination across different policy areas and traditional delineations of administrative competence.

It is against this background that policy research has emerged as a distinct approach to innovation studies, with its own methodological repertoire. Evaluations employ a highly differentiated spectrum of both quantitative and qualitative methods in order to anticipate ex ante or demonstrate ex post the efficiency, effectiveness and appropriateness of policy interventions aimed to foster research and innovation (see box below).

Example: Evaluation of policy programmes

The evaluation of research and innovation policy programmes, in particular funding programmes, is a major part of policy research. Over the past years, the objectives of these programmes have changed and become more systemic. Latest generation programmes are not only expected to enhance the quality and quantity of research and innovation in certain domains, but they are also expected to contribute to higher-order policy goals such a competitiveness, employment, sustainability or other major societal challenges. Demonstrating the impacts of research and innovation programmes on these higher-order policy goals is a major methodological challenge. It adds to other well-known methodological challenges such as the additionality problem: Actual outcomes cannot be observed since one cannot know what would have happened in the absence of a particular measure. Control group approaches have been suggested to tackle this challenge, but they are neither always neither practical nor fully effective.

While initially the efficiency of programme implementation was of primary interest to evaluations, the attention has thus shifted to further aspects over the past decades, raising novel methodological challenges:

- *Appropriateness***:** Does the programme address an objective that can be clearly related to policy rationale in terms of market, policy or government failure?

- *Effectiveness***:** Is the programme effective in terms of achieving its objectives and expected impacts? Is it more effective than other instruments that might have achieved the same goals?

- *Efficiency* in terms of

  Systemic Efficiency: How does the policy interact with other policies? Is there efficiency or sub-optimality in this respect?

  Internal Efficiency: Is the programme cost-effective in achieving its specific objectives?

  Adaptive Efficiency: To what extent do the results from evaluations feed back into policy design and implementation? Does policy design ensure a sufficient degree of flexibility enabling it to respond to the need for change?

- *Framework conditions* (e.g. the tax system, overall macroeconomic conditions, regulatory environment, bankruptcy laws, competition policy).

Definitions and standards as the basis for measurement and statistical analysis

Not least driven by the needs of policy research, it became evident that in order to make the step from case-based to systematic quantitative and statistical analysis and to extract meaningful insights from across a range of individual studies, it is important to agree on common standards and definitions of what the object of investigation – research and innovation - is about.

However, it took until 1992 when the OECD published its first Oslo Manual (OECD 1992), which compiled commonly agreed definitions and standards for indicators and data collection. With the Oslo Manual, the ground was laid for systematic comparative indicators and statistics on innovation. This allowed a major step forward in the quantitative analysis of innovation patterns. Large scale statistical surveys (such as later on the Community Innovation Survey CIS, or OECD country studies) opening up the possibility to conduct systematic innovation analyses at company, sector, regional and national level. On these grounds, statistical and econometric analysis could be conducted; a step that was also essential for enhancing the credibility and legitimacy of innovation studies as the basis for policy-making.

The development of appropriate metrics for the measurement of innovation and its effects was crucial in this context. Several stages or generations of metrics of relevance to the measurement of innovation can be distinguished (Milbergs and Vonortas, 2004):

- Initially, a linear conception of measurement was introduced, focusing on **input indicators**, such as R&D expenditures, personnel and capital investment in R&D.

- Input measurement was then complemented by accounting of **intermediate outputs**, e.g. related to scientific publications or discoveries, patents and innovative products.

- A richer set of innovation indicators based on **surveys** and the **integration of different relevant data into comparable indices**, for use in benchmarking exercises across countries and regions.

- Expansion of measurement beyond inputs and outputs in order to open up the 'black box' and measure process performance in knowledge-based network economy, where ecosystems of innovation play a crucial role as early predictors of output performance.

The gradual development of these metrics can be associated with different time periods, as shown in Table 7.

First Generation Input Indicators (1950s–60s)	Second Generation Output Indicators (1970s–80s)	Third Generation Innovation Indicators (1990s)	Fourth Generation Process Indicators (2000s plus)
• R&D expenditures • S&T personnel • Capital • Tech intensity	• Patents • Publications • Products • Quality change	• Innovation surveys • Indexing • Benchmarking innovation capacity	• Knowledge • Intangibles • Networks • Demand • Clusters • Management techniques • Risk/return • System dynamics

Table 7: Evolution of innovation metrics, Source: Milbergs and Vonortas (2004)

Comparative case-study research

In spite of all efforts to establish quantitative and statistical approaches, qualitative, case-based research continued to be an essential element of innovation studies, in particular to better understand the local specificities and embedding of innovation activities. These important case-specific differences are easily levelled out in statistical analysis, but are critical for informed policy development.

The critical question with regard to case-study research was how to generalize and extract cross-cutting insights from a range of case-studies. A major step forward was made by recurring to systematic comparative analysis, based on thorough theorizing and hypothesizing to frame case-study selection and inform case-study design (Yin 1992). Rather than relying on case-specific narratives, this kind of approach looked systematically at differences and similarities of individual cases, against the backdrop of a thoroughly developed theoretical framework and associated hypotheses.

The ICT revolution opening up new methodological inroads

The introduction of advanced information technology opened up new methodological inroads, extending both the scope and the depth of innovation studies. Large-scale samples could be analysed quantitatively in a much easier fashion than in the past. It was only with the access to large-scale databases like Thomson ISI or Scopus, but also online patent databases, that meaningful and comprehensive bibliometrics and patent analysis could be understood. More sophisticated statistical analysis can be performed easily, using large data sets. More recently, social media provide novel data sources, and big data is regarded by some as a promise for the future.

With growing computer power, simulation techniques have found their way into innovation studies, either using traditional system dynamics models or more recently also agent-based modelling.

Qualitative research approaches also benefitted significantly from developments in information and communication technology. Network analysis emerged as a rather novel method to describe the evolution of linkages in large as well as smaller, case-related data sets. Mining tools allow systematically analysing text sources such as publications, newspaper articles or interview transcripts.

From analysis to engagement

Experimental and action research have a long tradition in sociological and anthropological research, and they have become more prominent in innovation studies as well. Experimental economics has attracted more and more interest in recent years, with corresponding repercussions on innovation studies.

This development is also of major relevance to research on social innovation where experimentation combined with real-time monitoring and assessment promises to advance quickly along the learning curve in face of complexity. Moreover, social innovation is often taking place at the intersection of science and practice, thus relying on the engagement of actors and stakeholders.

This shift towards experimental approaches can also be observed in other domains where complexity makes top-down planning impossible. Innovation labs, policy labs and design thinking in innovation management are just some of the concepts that have received a lot of attention in recent years.

Multiple methods

Given the multitude of methods that are available nowadays to study research and innovation, it is of little surprise that different methods, both qualitative and quantitative, are combined in innovation studies. Large-scale surveys are underpinned by case-studies; case-studies are complemented by network analysis and document mining, samples are analysed using econometric techniques, etc.

Linking different data sources and methods of analysis requires new inroads to the interpretation of research findings collected from different angles and using different methods (i.e. triangulation).

4.3.3 Qualitative methods for case-study research

There are many different inroads to qualitative case-study research in innovation studies. The below mentioned examples are therefore just representing a much broader spectrum. What is important to keep in mind is that most of these perspectives and associated methods build on a dedicated conceptual understanding of how innovation comes about. However, descriptive ‚**inductive‘ narratives** are still a very common approach to case-study research, often used in historical studies, which subsequently aim at explaining the observed phenomena in a hermeneutic manner.

In contrast to historical studies, **behavioural, micro-level approaches** to innovation case studies are based on and inspired by theory. Usually, they do not claim proposing a single theory of innovation, but rather suggest a number of pre-conceived interpretative building blocks that are applied to different specific cases. In other words, they build on a generalized understanding of the patterns and determinants of innovation, and how they need to be interpreted, but recompose these building blocks for each individual story-line. Examples of this kind of micro-level, behavioural approaches are innovation journeys (Van De Ven, et. al., 1999) and innovation biographies (Butzin et al. 2013), but also actor-network theory (Callon 1991). Callon and his colleagues build on a very differentiated theoretical approach to innovation, by interpreting both actors and artefacts as 'actants' in a network. In methodological terms, these kinds of approach tend to favour research strategies of 'following the actors', either by way of observation or by way of interviews, in order to collect information needed to reconstruct the case histories.

Complementary, if not opposed to the micro-level approaches are research inroads that take **structural and institutional conditions** as their starting point. Structuralist thinking and „classical" sociological systems theory can be subsumed under this headline. Case-study research under this umbrella typically take structural and institutional conditions, and tensions resulting from these as starting points for reconstructing innovation cases.

Today, actor-centred perspectives are often embedded in or combined with institutional analysis in order to better understand how both individual innovations arise and evolve, and how more extensive socio-technical or innovation systems change. This is also a central ambition of SI-DRIVE which is why such a **combined behavioural and structural/institutional approach** to case-study research is particularly promising. Many different approaches combining macro- and micro-level perspectives have been developed in innovation studies over the past years, often recurring to system and network thinking. A first such example is Technological Innovation Systems (TIS) analysis (see box below), which draws on functionalist interpretation of innovation systems and suggest some specific methodological inroads for tracing and explaining socio-technical change, but also for policy analysis.

Example: Technological Innovation Systems (TIS) analysis

The Technological Innovation Systems (TIS) perspective focuses on the emergence of primarily technological innovations. It is based on a *functional* interpretation of innovation systems, i.e. it argues that certain functions or key activities need to be in place in any innovation system to operate effectively and efficiently. These functions provide the theoretical underpinnings on the basis of which different analytical and methodological approaches have been developed, for instance for measuring and monitoring system change, for assessing the legitimacy of policy interventions, or for guiding empirical investigations of innovation dynamics. A method frequently used is event analysis to trace the emergence of (technological) innovations, but also the identification of the dynamics of transformative change in terms of different 'motors' of innovation.

The TIS perspective is particularly useful for studying the early phase of transformative innovations, i.e. it helps better understand the creation and emergence of the institutional support environment for a specific technology. Technological innovations are conceptualized as co-evolving with organisational, institutional and behavioural change.

While being technology-centric, the approach is instructive for social innovation from the methodological point of view. Different functions or key activities can be assigned to different levels of analysis of innovation systems, e.g. regional, sectoral, national, or international. Missing functions or key activities can help identify gaps in the support environment for innovations, pointing to needs for policy intervention.

Source: Suurs (2009), Hekkert et al. (2007)

Sharing with TIS-analysis the interest in the transformative impact and pathways that technologies can have, the **multi-level perspective on transitions** builds on a three-tiered framework at behavioural ("niche"), institutional ("regime") and contextual („socio-technical landscape") levels. It is particularly interesting due to its two distinct research strands (see box below), one focusing on the historical analysis of transition cases („Transition Studies"), and the other focusing on supporting change processes in the real world („Transition Management").

Example: Multi-level perspective in Transition Studies, Strategic Niche Management and Transition Management

Similar to TIS, the multi-level perspective on transitions, which underpins both Transition Studies and Transition Management, was developed for explaining and dealing with transformative socio-technical change. Transition Studies, often based on historical case analyses, aim to explain the emergence and uptake of paradigm-shifting new solutions in society. The interest in far-reaching processes of social change is particularly instructive for the ambitions of SI-DRIVE.

Although the multi-level perspective has been developed with a keen interest in new technology and its impacts on society in mind, it very much stresses the co-evolution of the social and the technical. Three levels of analysis – socio-technical landscape, regime and niche provide the analytical backbone of the multi-level perspective. While sharing many basic conceptual ideas with systems approaches, it offers an alternative language that is better suited to the analysis of later phases of transformative socio-technical change than Technological Innovation Systems. Transition Studies rely strongly on case-study research, but the very broad definition of key concepts makes the approach difficult to implement in large-scale comparative case-studies.

The analytical perspective of Transition Studies is complemented by an action- and policy-oriented approach under the headline of Transition Management, which takes up and carries forward key ideas developed in the late 1990s under the headline of Strategic Niche Management.

Source: Geels (2002), Hoogma et al. (2002), Rotmans et al. (2001), Weber et al. (1999)

The key challenge of qualitative case-study research resides in the ability to draw generalized conclusions across different cases. **Systematic comparative analysis** requires a sound theoretical basis and guiding hypotheses or research questions as common reference points, operationalized by way of a common pattern of analysis that is implemented in a coherent manner for well-chosen set of cases. These cases should be selected in a systematic manner so that the main dimensions of the kinds of innovation under study are covered, preferably informed by a good taxonomy and/or typology of innovation archetypes, suitable for dealing with the research questions posed at the outset. Of course, clear definitions and a shared understanding of innovation needs to underpin systematic comparative analysis of case-studies. The theoretical perspective adopted should be sufficiently broad to cover all relevant determinants, which is why a framework that combines behavioural and institutional perspectives is a promising foundation on the basis of which to devise a common grid for data collection and to prepare guidelines for coherent implementation in a large team. Data analysis and interpretation should equally follow a shared pattern of analysis that is suitable to deliver insights into the research questions posed at the outset.

While each research project may have its specificities, some essential **operational work steps of systematic qualitative case-study research** can nevertheless be identified. As implemented in the ServPPIN project (see box below) the following main steps can be followed:

- Clearly specify underlying definition, theoretical framework and typologies;
- Develop a shared understanding of guiding research questions;
- On that basis, formulate a common pattern and guidelines for data collection and analysis;
- Choose cases appropriate to be able to cover key dimensions of the typologies and address the research question;
- Conduct a sufficiently large number of case-studies in a comparable manner along the lines of the pattern and guidelines for data collection and analysis;
- Analyse the cases in a standardised manner, using similar analysis tools and interpretative building blocks;
- Compare the case results with reference to the initial research questions/hypotheses, taking into account their inherent similarities and differences.

Example: ServPPIN project methodology

The FP 7-funded project ServPPIN (The Contribution of Public and Private Services to European Growth and Welfare, and the Role of Public-Private Innovation Networks) had its origins in research on innovation in (public) services.

Public–private innovation networks in services (ServPPINs) is an organisational model for realising cooperation in innovation between public sector organisations, private companies and third sector organisations, which results in the development of novel services or to the delivery of existing services in a new way. Due to its focus on service rather than technological innovations, it is instructive for social innovation research both from a conceptual and a methodological point of view.

In conceptual terms, ServPPINs are rooted in service innovation theory and stress the importance of the complementarity of knowledge-sharing and competencies between these different types of organisations in creating innovations. This is combined with life-cycle considerations, and the need to reconfigure ServPPINs over different phases of the life-cycle from initiation of an innovation to its emergence and wider uptake.

In methodological terms, the ServPPIN project implemented among other work packages a programme of more than forty case-studies in three domains (health services, intelligent transport systems, knowledge-intensive services). Based on a shared theoretical understanding and definition of ServPPINs, some guiding hypotheses and research questions were developed and operationalised by way of a shared pattern of analysis and guidelines for data collection. These different elements were agreed among the project coordinator and the leaders of the respective empirical work package leaders who had to instruct the respective teams with regard to data collection and interpretation of the individual case-studies. In the selection of cases to be studied, a balance was struck between a good coverage of the main distinctive dimensions of ServPPINs and the need to restrict the complexity of the comparative analysis to a degree that could be handled by a limited set of cases. The actual comparative analysis of cases was conducted at different levels: some ‚most similar‘ cases were analysed in depth within the three domains, but also the full range of domain-specific cases was included in more comprehensive key features and lessons from the cases; finally also a cross-domain analysis was conducted, leading to a workbook on lessons for managing ServPPINs.

Source: Gallouj et al. (2013), Weber et al. (2014), Weber (2011).

While qualitative comparative case-study research builds on an analytical scientific paradigm, case-oriented research can also be conducted with the intention to exert an influence on real world and/or enter into an interactive mutual learning process. **Experimental and action research approaches** are suitable for that purpose. In the context of social innovation, this approach seems particularly relevant, because of the origin of much research on social innovation in practical work aiming to change and improve social reality. It is important to keep these two distinct roles of observer on the one hand and of change agent on the other in mind when doing case-studies. The latter is rather about case-making than case-studying, with the process of shaping an innovation standing in the foreground, but which can obviously be monitored, analysed and reconstructed in parallel. However, these two distinct roles need to be clear to all parties involved.

Obviously, there are many different **support tools** that can be used in the context of qualitative case-study research, covering both quantitative and qualitative methods. If a sufficiently large number of cases is analysed, statistical and econometric methods can be applied. Bibliometric and patent analysis are used to underpin case-study research by quantitative data. Network analysis can help better understand relationships between actors in comprehensive case studies involving many actors and stakeholders. Text-analytical tools can support the process of identifying patterns in text-based sources.

4.3.4 Key insights for SI-DRIVE empirical research agenda

Again the background of this brief review of methodological inroads in innovation studies, the following insights for the further case-related work in SI-DRIVE can be derived:

- Shared definitions, theoretical underpinnings and practice standards are essential for successful case-study research in large distributed teams.

- A sound and shared theoretical basis is important for formulating shared research questions and/or hypotheses that guide case study research in more concrete terms and are essential for meaningful cross-case comparison.

- A conceptual or theoretical framework that combines structural and behavioural perspective is essential to cover a sufficiently broad range of potential determinants of change processes in case studies. However, a balance needs to be struck with the need for reducing the number of analytical dimensions (and thus the number of cases!) to a reasonable limit.

- Qualitative case study research can be enhanced by quantitative tools, both for analyzing individual cases and for comparative purposes.

- Systematic comparative case study analysis requires a rigorous implementation of case-studies along agreed patterns of data collection and analysis.

- Given the complexity of innovation in the context of social life, experimental case-study approaches, combined with monitoring and analysis in real time, are promising ways ahead for case-study research.

- At the same time, a clear differentiation between the role of observer on the one hand and of change agent on the other needs to be maintained. Transition Studies/Transition Management is a good example of how this duality and distinction between analytical and action-/policy-oriented approaches can be handled.

4.4 STATE OF THE ART: FORESIGHT AND RELATED FUTURE-ORIENTED TOOLS

Foresight is the systematic consideration of possible futures and involves systematic attempts to look into the future of science, technology, innovation and society. Foresight processes aim at enabling present-day decisions and mobilizing joint actions (cf. Loveridge, 2009; Martin, 2010). In policy terms it combines 'thinking the future', 'debating the future' and 'shaping the future' (European Commission, 2002). Foresight and future oriented analysis do not aim to predict the future but to establish anticipatory practices and policies (Barben, Fisher, Selin, & Guston, 2008; Schaper-Rinkel, 2013; Weber, Harper, Könnölä, & Carabias Barceló, 2012). Foresight and related approaches provide tools to consider the future as created or shaped, rather than as something already decided.

In the last few years, foresight evolves from a traditional focus on broad-based technological priority setting to a set of applications addressing systemic and demand-side policies (Georghiou & Harper, 2011). These applications require a shared vision on the part of users and suppliers. In successful cases they are based upon the formation of a common vision between the different stakeholders. At the same time, there is an increasing trend to use foresight methods and future-oriented tools to anticipate broad societal future challenges and provide support to policy-making (cf. Könnölä, Scapolo, Desruelle, & Mu, 2011; Weber et al., 2012). This

tendency is an interface with the challenges of social innovation and the rationale behind the use of foresight in analysing social innovation as driving force of social change.

A set of related methods and tools is used in Foresight as well as in future-oriented technology analysis and forward-looking activities. Future-oriented analytical tools and Foresight can be used to think about the long-term issues and challenges associated with specific innovations, or to understand what a future operating environment may look like and how social innovators and policy makers might respond. Foresight and Future-oriented Technology Analysis (FTA) cover subfields such as technology foresight, technology forecasting, technology road mapping and technology assessment (cf. the list in Rader & Porter, 2008) and combine tools, ranging from quantitative methods such as bibliometrics and modelling to qualitative and participatory tools such as focus groups and scenario building (cf. Porter et al., 2004). They encompass new participatory types of future-oriented studies and activities, such as dialogues on ethical, legal and social aspects (cf. Rip, 2009).

The most widely used methods in Foresight are literature reviews (not covered by this chapter because already established in SI-Drive), expert panels and scenarios. Additional commonly used methods include extrapolation and megatrends, as well as futures workshops, brainstorming, Delphi surveys, questionnaire/survey, analysing key technologies and SWOT analysis. Less frequently used methods include road mapping, modelling and simulation, back casting, stakeholders mapping, bibliometrics, morphological analysis, citizen panels, relevance trees, multi-criteria analysis and gaming (EFMN, 2009, p. 73 ff.).

4.4.1   Expert Panels[10]

The "expert panel" is of the most frequently used methods in Foresight. Most of the activities in institutional Foresight exercises are carried out by expert panels. The expert panel method is based on the idea of eliciting expert knowledge. The panels are typically groups of 12-20 individuals who are given 3-18 months to deliberate upon the future of a given topic area, whether it be a technology (e.g. nanotechnology), an application area (e.g. manufacturing), or an economic sector (e.g. health).

Foresight is a participatory, discursive activity that is expected to be based upon the best available expertise. These conditions make the use of expert panels a usual choice in Foresight exercises. Some of the benefits of expert panels include:

- Availability of expert judgement 'on tap' at the centre of an exercise, which can be particularly important when dealing with the uncertainties associated with the future;

- In-depth and meaningful interaction and networking between different scientific disciplines and areas of expertise that would otherwise be difficult to organise;

- The ease with which panels can complement other methods used in Foresight. Panels are used for the generation of inputs, the interpretation of outputs, and/or the overall conduct of the method;

- The credibility and authority lent to the technology Foresight exercise by the profile of panel members and the visibility of expert/stakeholder panels; and

- The moulding of influential individuals (panel members) into Foresight ambassadors and change agents in support of panel findings.

In a Foresight process the expert panels have the functions of gathering relevant information and knowledge, synthesising the information gathered, stimulating new insights and creative views and providing a vision of future possibilities, creating new networks, diffusing the Foresight process and its results to much wider

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[10] The text of this sub-chapter is mainly from the http://forlearn.jrc.ec.europa.eu/guide/4_methodology/meth_expert-panel.htm

constituencies, and influencing Foresight in terms of follow-up action. Thus once they are established they are the main actors carrying out the process throughout the exercise.

In Technology Foresight panels must be perceived to be technically qualified and even-handed if the exercise is to achieve authority, credibility and legitimacy. Panel members will bring their own interests and biases to the table as expertise in a given area normally means that an individual has some sort of stake, whether financial, professional, political, etc. in that area. With stakeholder panels, this link is typically even more obvious.

In a Foresight exercise, expert panels are expected to carry out specific tasks within a given timeframe (e.g. the duration of the exercise) related to their functions. Documents such as the Proposal and (ii) the Terms of Reference are used to inform the panels about their tasks. The proposal document explains what the panel will do, and who (which experts/stakeholders) should be involved. Drawing on the proposal, the terms of reference set out what they should do, how it should be done, and when it should be completed.

It is often a challenge to get panels to think creatively about possible future developments. Popular approaches in expert panels include brainstorming and scenario-writing. A panel composed of members from diverse backgrounds enables the consideration of different perspectives. Usually, panel members are expected to act as individuals rather than representing 'corporate' views held by their particular organisation.

Panels are in danger to produce wishful thinking – their analyses and recommendations need to be based upon available data of the past and present, as well as plausible projections of those trends, e.g. demographic change. SWOT analyses, reviews, and trend analyses are therefore commonly used.

One of the chief aims of appointing panels in technology Foresight is to nurture deliberation amongst a group of recognised experts and/or stakeholders around a set of issues with a view to generating enlightenment and policy advice. Expert panels can bring together different types of players who might not normally meet in the course of a panel such as innovators, sponsors, policy makers, academic researchers and/or users. Expert panels provide an environment where diverse viewpoints of stakeholders can be brought together freely. The management of the group and individual behaviours is an important issue as panel members bring their own interests and biases to the table. These factors, which emerge on the panel work process, are likely to affect the Foresight process, the ideas created, and the quality and quantity of the output. Individual participants play an important role in panel processes. The depth and breadth of their knowledge and their experience in the field are crucial. In addition to these technical qualifications, it should be borne in mind that the personal characteristics of participants have a powerful influence on the work done. For panel work, it is important that the individuals are creative thinkers who can work well in groups.

At the individual participant level, creative performance requires a particular set of skills. These include the ability to think creatively, to generate alternatives, to engage in divergent thinking, and to suspend judgement. Creativity also requires a level of drive pushing individuals to persevere in the face of the challenges inherent in creative work. As a result some individuals are more creative than others.

Finally, creativity inherently involves risks. That is, to develop new and useful products or processes, individuals have to be willing to try and to risk failure. The participants should be able to speak freely without fear.

Regarding the composition of panellists, expert panels need to avoid too narrow representation. Narrow representation is liable to result in little challenging thinking. Interaction with a diversity of others is a necessary precondition for creative performance. Reflecting the networking elements of institutional Foresight, it is valuable to bring together different types of players who might not normally meet in the course of a panel (e.g. innovators, financiers, policymakers, academic researchers and 'users' of the innovation).

Panels need to be chaired and facilitated effectively in order to maintain motivation and morale, to resolve conflicts, to keep an eye on timetables and to prevent over-dominance of strong personalities. In order for creativity to occur, a facilitator needs to play an active role in fostering, encouraging, and supporting the activity. Hence the role of the facilitator is to ensure that the structure of the work environment, the climate and culture, and the human resource practices are such that creative outcomes can and do occur.

Expert panel cannot produce a statistically significant outcome. The results provided by a panel will not reflect the response of a larger population or even the findings of a different panel. The panels usually consult through surveys, meetings or conferences to gather opinions from wider participants. However, at the end the outcomes will represent the synthesised opinions of the panel.

4.4.2   Scenarios[11]
A scenario is a "story" illustrating visions of possible future or aspects of possible future. It is perhaps the most emblematic Foresight or future studies method. Scenarios are not predictions about the future but rather similar to simulations of some possible futures. They are used both as an exploratory method or a tool for decision-making, mainly to highlight the discontinuities from the present and to reveal the choices available and their potential consequences. They are used in different processes including the use to support policy-makers and technology strategists (e.g. Groves, 2013; Misuraca, Broster, & Centeno, 2011) and for strategic foresight in business environments (Ringland, 2010).

The scenario method is one of the main concepts and most widely used methods in Foresight. Both public and private sector organisations have implemented scenarios for a wide array of functions. The public sector relies mainly on scenario methods when it defines planning activities (e.g. it was used in the past for defence planning) and to delineate alternatives for policies. Industry uses scenarios to develop business strategies.

In Foresight projects, the scenario method is a policy analysis tool that helps describe a possible set of future conditions. Scenarios can be used to improve planning capacity, to enrich strategic public policy decisions and to guide major capital investments. For example, the development of scenarios allows new insights into the opportunities and risks involved in making decisions about public transport that would have major consequences for the development of a region over the next few decades.

To be effective, scenarios must be plausible, consistent and offer insights into the future.

- **Plausibility**: A scenario must be plausible. This means that it must fall within the limits of what might conceivably happen.

- **Consistency**: A scenario must be internally consistent. This means that the combination of logics in a scenario must not have any built-in inconsistency that could undermine the credibility of the scenario.

- **Decision-making utility**: Each scenario, and all scenarios if they constitute a set, should contribute specific insights into the future that will lead to the decision focus that was selected.

Scenarios can help to think in a structured way about the future when making (public) policy decisions. The method supports decision-making in considering the range of plausible futures, to articulate preferred visions of the future, to use what is learned during the scenario development process in decision-making processes. It also helps to stimulate creativity and to break from the conventional obsession with present and short-term problems.

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[11] The text of this sub-chapter is mainly copied from the for-learn manual:
http://forlearn.jrc.ec.europa.eu/guide/4_methodology/meth_scenario.htm

One of the purposes and uses of scenarios is to support decision-makers to acquire knowledge and understanding to anticipate the context in which they have to act. For scenarios to be used effectively, the participants must be convinced of the soundness, relevance and value of the process. Scenarios are used to analyse the impact of different decisions.

Decision makers as well as external experts and other who have valuable perspectives are the ones usually involved in scenario development. Participants should have different backgrounds that could provide useful insights to the scenario building process (i.e. science and technology, social sciences, environmental sciences, economics, demography, etc.).

There are many different possible ways of developing scenarios. One possible approach is to divide the process into six steps.

- **Step 1: Identify the focal issue (The "setting" for the scenarios)**
  To start 'from the inside out' means starting with a specific decision or question, then building out towards the environment. As scenarios are tools to develop strategic decisions, a narrow focus will prevent the scenarios from drifting into broad generalisations about the future of society or the global economy. When determining the focal issue it is important to decide on a specific time-horizon for the scenarios, because it will affect the range of issues to be considered within the scenario development process. It is important when deciding on the focal issue, to deal explicitly with the range of uncertainties that might characterise the long-term future.

- **Step 2: Identification and analysis of the drivers**
  The next step is to identify the key drivers that will influence the listed key forces at macro and micro-level. Micro-environmental key forces are those that have a direct influence on the issue you are dealing with. For example, if you are dealing with the future of a specific manufacturing sector, micro drivers can be related to the sector market trends, specific regulations on manufacturing, new technologies, etc. Macro-environmental key forces are broader and possibly are global. They relate to social, technological, political, economic and environmental forces that might have an impact on the issue considered. The aim is to start building a conceptual model of the relevant environment that includes critical trends and forces and maps out the cause-and-effect relationship among the forces. It will also be possible to identify what are the major trends and uncertainties, which are the most important in determining the key decision factors and which represent underlying or 'driving' forces for significant change in the future. The list of the driving factors should include Social, Technological, Economic (macro), Environmental, Political and Values (STEEPV).

- **Step 3: Rank by importance and uncertainties**
  The next step consists in the ranking of the driving forces on the basis of two criteria: the degree of 'importance' of the focal issue identified in Step 1, and the degree of 'uncertainty' surrounding those factors and trends.
  One suggestion is to use an impact/ uncertainty matrix with a simple **'High-Medium-Low'** scoring system. The aim is to identify the two or three factors or trends that are the most important and the most uncertain.
  As outcome of this sorting, it is then possible to focus the attention and the selection of the scenario logics in the next step. Some examples of scenario building focused on:

  – High importance/ low-uncertainties forces. These are the relative certainties in the future for which current planning must be prepared.

  – High importance/ high uncertainties driving forces. These are the potential shapers of different futures for which longer-term planning should prepare.

- **Step 4: Selecting scenario logics**
  The results of the ranking exercise of previous step help identifying the **axes** along which the scenarios can be constructed, therefore find out the **scenario logics**. The focus of attention should be on the **'high important/ low uncertainty'** and on the **'high important/ high uncertainty'** quadrants of the matrix. Determining the axes of the scenarios is the crucial step in the entire scenario-generating process. The minimum number of scenarios needed to contain the 'area of uncertainty' are usually just three or four.

- **Step 5: Fleshing out the scenarios**
  Develop a number of internally consistent story lines which project as much as possible what learned through the process up to now. Incorporating elements of both desirable and undesirable futures within the different scenarios are useful. Useful scenarios are characterized by **plausibility** (fall within the limits of what might conceivably happen), **differentiation** (being structurally different, not only simply variations of a base case), **consistency** (internal consistent), **decision making utility** (contribute specific insights into the future that will allow on the decision focus that was selected), **challenge** (challenge the conventional wisdom about the future).

- **Step 6: Implications of scenarios.**
  This is the stage at which we 'close the loop' linking back to the decision focus of the first step, and starting to turn the scenarios into strategy. In this step the scenarios are analysed in details by asking crucial questions:

  – What are the strategic implications of the scenarios for the particular decision we selected at the outset of this process?

  – What options do the scenarios suggest?

  The development of **effective, robust strategies** requires far more than having a set of scenarios. Other elements are, for example, a strategic vision, goals and objectives, competitive analysis, assessment of core competencies etc. However, this final step can develop some initial and valuable strategic insights. Some productive approaches are:

  Opportunities/ threats assessment: examine the scenarios in detail to determine the opportunities and threats that each poses for the organisation that commissioned them. Two questions can guide phase: Which **opportunities and threats** are common to all (or nearly all) the scenarios? These are ones on which the strategic thinking should be particularly focused. How well prepared are you to **seize those opportunities and minimise threats**? These answers provide an initial assessment of the core competencies needed to succeed in the scenarios, and of the gaps in the current organisation.

Bringing together the answers to these questions will help defining some strategy options (not an integrated strategy) that deserve more disciplined analysis.

Scenarios have been used widely as a way of developing recommendations for public policy. They demonstrated their usefulness by providing a range of possible plausible futures, which effects of actions can be made explicit in a non-threatening way. Scenarios can be used as a tool to create a framework for a **shared vision of the future**, to promote discussion and build consensus.

Advantages of scenario building include that a variety of **factors can be considered**; strategic thinking, creativity, communication and organisational agility will be stimulated and actors will be supported to become proactive, working specifically for their desired future.

The disadvantages are that scenarios can be mistaken for predictions or forecasts of the future. This misconception sometimes hinders the adoption and use of scenario building. Scenario building can be carried out by different approaches. **Normative scenarios** start with preliminary views of a possible futures and look backwards to see if and how this might or might not grow out from the present. **Exploratory scenarios** start with the present as starting points and move forward to the future by asking 'what if' questions about implications of possible events outside familiar trends.

- **Inductive method** (or bottom-up): the approach builds step-by-step on the data available and allows the structure of the scenarios to emerge by itself. The overall framework is not imposed; the story lines grow out of the step-by-step combining of the data.

- **Deductive method** (or top-down): the analyst attempts to infer an overall framework to start with, after which pieces of data are fitted into the framework wherever the fit most naturally (this is the approach described in the approach step-by-step guide of this page).

The inductive and deductive methods are the preferred approaches in situations where it is clear that scenario building is the tool to deal with the specific decision and/or question that has to be tackled, or where scenario building is already embedded in the thinking style of an organisation. However, if a client may still have to be convinced that scenario building could offer an improvement over traditional forecasting techniques, the incremental method could be implemented. In general, in these situations the client is attached to what he/she reckon as 'official future'. The incremental approach uses the 'official future' as starting point. The scenario building team tries to identify flaws in the official future, and to develop alternatives that convincingly challenge the official future. Or the team will develop scenarios as excursions from this.

4.4.3   Delphi Study, questionnaire/survey[12]

The Delphi method is based on structural surveys and makes use of information from the experience and knowledge of the participants, who are mainly experts. It therefore yields both qualitative and quantitative results and draws on exploratory, predictive even normative elements. „Delphi is 'a method for structuring a group communication process', not a method aimed to produce consensus." (Linstone & Turoff, 2011, p. 1714). The applications are diverse: Delphis have been widely used in Technology Foresight studies and can be used to help identify and prioritise policy goals.

As the Delphi method is a systematic, interactive future-oriented method relying on a panel of experts, these experts answer questionnaires in two or more rounds. After each round, the experts get an anonymous summary of the participants' forecasts from the previous round as well as the reasons they provided for their judgments. The experts are thus encouraged to revise their earlier answers in light of the replies of their peers. During this process the range of the answers will decrease and the group will converge towards a set of common answers. Delphi is based on the assumption that forecasts from a structured group of experts are more useful than those from unstructured groups or individuals.

Usually, the goal (and the result) of a Delphi study is to organise a debate, to collect and synthesise opinions and to achieve a degree of convergence. It is a valuable tool for communication and for exchanging opinions on a topic, making experts' tacit knowledge of the future more explicit. It is also useful for longer-term assessments where extrapolations make no sense. It can help to gather the opinions of a larger group of experts and in fields where there is not a lot of evidence about the developments and where experts often do not dare to explain their real opinion. It is conducted anonymously in order not to let anyone lose face in the event of a change of opinion. The methodology is designed to avoid domination by particular individuals.

The number of respondents can be small. Delphis are not intended to produce statistically significant results. The Delphi method is mainly used when long-term issues (up to 30 years) have to be assessed. It is a useful

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[12] The text of this sub-chapter is mainly from the for-learn foresight manual: http://forlearn.jrc.ec.europa.eu/guide/

means of looking at emerging developments where there is no empirical database, where external factors are likely to have a determining effect and where social arguments may dominate economic or technical considerations. As it implies identifying statements (topics) that are relevant for the future, it reduces the tacit and complex knowledge to a single statement and makes it possible to judge. On the other hand, in more complex issues, when the themes cannot be reduced that much or when thinking about and discussing alternatives are the major target, Delphi is not the method of choice.

The major users are companies, particularly strategy departments. In the case of national Delphi studies, the target audience is usually defined as anyone interested in information about the future so, along with companies, the major users tend to be research institutions, ministries, journalists, teachers, students and pupils. This formalised and traceable method has credibility with policy-makers. The panel of respondents includes experts from different areas – academia, business, government, associations and other participants competent in the field of subject.

The following steps are necessary:

- Definition of the procedure (definition of work, logistics, setting up the website, reports also have to be considered, how to give feedback to the participants during the second round)

- Formulation of the statements (Respondents are often asked their opinion in relation to given statements, filter the topics).

- Formulation of the questions (clearly defined, possible to answer, and match the statements made)

- Selection of the panel of experts (criteria for selection, recruiting the panel)

A key benefit of a Delphi-Survey is the ability of individuals to interact in a group communication process asynchronously at times and places convenient to them. The method gives participants the opportunity to think in more depth and gather further information between the rounds. A Delphi highlights clearly whether there is consensus on an issue or not.

The disadvantages are that they are time-consuming and expensive and that the consensus obtained in the second round is often artificial and that the converging opinions are often regarded as facts.

As Delphi studies are not the choice in more complex issues, when the themes cannot be reduced that much and when thinking about and discussing alternatives are the major target, this method is not useful to be implemented in SI-Drive (only mentioned in this overview because it was one option to be considered in the proposal).

4.4.4   Other methods used in foresight

Less frequently used methods include road mapping, modelling and simulation, back casting, stakeholders mapping, bibliometrics, morphological analysis, citizen panels, relevance trees, multi-criteria analysis and gaming.

Different analytical tools (see Cagnin, Keenan, Johnston, Scapolo, & Barré, 2008; Porter et al., 2004) are often used in a wider context of participatory methods such as the scenario development. Foresight exercises need to take account of the relevant broader context and its future implications. Horizon scanning (Amanatidou et al., 2012) includes a set of methods to analyse future developments in a broader context. Horizon scanning can be used to consider how emerging trends and developments might potentially affect current practices and policies and support actors and stakeholders such as policy-makers to take a longer-term strategic approach and to develop policies that are expected to be more resilient to future uncertainty.

4.4.5   Conclusions

Foresight for social innovation should be based on interactive and participatory methods, using established foresight tools and adapting them. Foresight methods can be used to develop social innovation assessment tools that go beyond direct impact. Social innovation foresight processes should make use of expert panels that include a broad variety of experts and stakeholders.

A high impact of specific social innovations requires cross-scale interactions that are outside of the scope of most social innovation initiatives (cf. Westley, Antadze, Riddell, Robinson, & Geobey, 2014). Foresight processes can be used to explore the drivers and barriers for building up an ecosystem that allows social innovation to evolve.

Scenarios on the future of social innovation in different (policy) fields can be used to understand the dynamics of cross-scale interaction in complex systems and how these relate to innovation that drives social change. To drive social change in a complex environment, the social innovations to be analysed create new pathways through combining different elements that are influenced by the initial conditions and by the context (policies, markets etc.) they involve in. Different pathways to diversify future possibilities can be made visible by developing scenarios and the scenarios can be used to open the debate on the impact of particular actions to support social innovation.

Thinking a variety of possible futures of social innovation and debating these futures can help shaping future pathways of social innovation. As foresight and related approaches provide tools to consider the future as to be created or shaped, different stakeholder can bring in their expectations and normative demands. In this regard, foresight tools might help to bridge the gap between social innovation practitioners on the on hand and social innovation related research on the other hand. Especially scenarios with a broader time-horizon could give indications on areas of tension and areas of consensus.

Against this background a first methodological approach was developed in SI-DRIVE achieving its conclusion in the foresight methodology described in deliverable D11.1 (Working Paper Policy Framework for Social Innovation, chapter 3 "Process Perspective), which will not be repeated or summarised here again. The main task of the SI-DRIVE policy recommendations and foresight is to move from retrospective analysis to prospective analysis. Based on the first mapping results SI-DRIVE will adapt existing future-oriented assessment tools as well as foresight tools to come from hindsight to foresight.

4.5   OTHER RELEVANT METHODOLOGY: INNOVATION BIOGRAPHIES[13]

Because of the already mentioned relevance the Innovation Biography approach might be a relevant part of the in-depth case studies as well and will therefore be illustrated here in detail. The approach was developed at the Institute for Work and Technology (IAT) and aims at analysing micro level peculiarities of innovative developments across time, space and individuals (Butzin 2013; Butzin et al. 2012). By re-constructing the biography of an innovation process from the first idea until the implementation through certain research techniques, the unfolding dynamics of innovation as concerns actor constellations, social networks, drivers and barriers are grasped at their origin. Up until now, the Innovation Biography approach has been applied in a number of (international) research projects[14], and will be a main empirical instrument in the currently running SIMPACT project (Economic Underpinnings of Social Innovation) coordinated by IAT.

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[13] Large parts of this text on Innovation Biographies are an excerpt of the following publication: Butzin, Anna (2013): Knowledge Dynamics in Innovation Biographies. A Methodological and Spatial Perspective. Dissertation Philipps-University Marburg (2014).

[14] Including the project "EURODITE – Regional Trajectories to the Knowledge Economy", funded within the FP6 programme of the European Commission (contract 006187) and three further projects funded by the Volkswagen Foundation (contract II/81 419), the German Federal Ministry for Construction (contract Z.6-10.08.18.7-07.01), and by the German Federal Ministry for the Environment (contract 10.04.04-13.090).

Originally, biographical research comes from the discipline of sociology (Wengraf 2001). It relates to the intention to grasp the manifold impulses impacting individual biographies over time in a most open way through narrative interviewing and complementary research of documents (Fuchs-Heinritz 2005). The theoretical aim of sociological biography studies is to explain how small-scale developments iterate with broader-level structures (Wengraf 2001; Chamberlayne et al. 2000; Roberts 2002). Through transferring ideas of sociological biography research to innovation analysis, potential lays in disclosing micro-level structures of innovations. A time-related view has also been established as a methodological lever in disciplines explicitly studying innovation. Within the field of science and technology studies, Rammert (2000) has explicitly claimed to study the biographies of innovations as the essential small scale developments constituting 'Technikgenese'. In the same discipline, Van De Ven et al. have undertaken 'Innovation Journeys', and followed innovation processes over time to develop a process theory of innovation (Van De Ven et al. 1999).

4.5.1 Methodological Background

The reconstruction of an Innovation Biography is addressed by a threefold methodological structure allowing in-depth longitudinal qualitative analyses (Crang, 2002). This is installed through 1) conduction of a central narrative interview with a person who had major responsibility for an innovation project. This person is asked to tell the innovation story from the first idea until its implementation in an open and inductive manner. One important component of the interview is to explore the evolution of social network, how it co-evolved with further development of the innovation process, and from which locations (from local to global) the actors originated. 2) By qualifying the interrelationships of the network through qualitative social network analysis with the aim of knowing the reasons why actors have been selected, how they have been searched for, what kind of input has been provided and whether there might have been conflicts, etc., in-depth insights into innovation processes are obtained. Thereby, the time-perspective is crucially relevant for grasping the dynamics and evolvement of the diverse constellations. Furthermore, through snowball sampling, further interview partners who have been involved in the innovation process are interviewed subsequently. 3) As a further valuable technique, a time-space path can be created in order to visualise the social network of innovation biographies. A time-space path is known as an element of time geography (Hägerstrand 1967, 1987) where it is utilized as a practical tool to measure and visualise movement in time-space. In Innovation Biographies, the time-space path illustrates the interrelations among multiple locations during the process of knowledge generation and the co-evolution of networks.

With their micro-level perspective, alongside the explorative tracing of social network and its context, Innovation Biographies connect to two different methodological schools of thought. These are actor-network (Latour 1987) and grounded theory thinking (Glaser/Strauss 1967).

The constellation of techniques in innovation biographies (cp. the following section) is designed in a way that allows following the innovating actors and their embedding in the evolving network. By tracing the network of actors, the reciprocate influence of social relations and innovation development can be grasped (cp. Latour's claim). The connection to grounded theory is installed through the narrative interview and the open inductive research procedure. Inductive data analysis has the potential to explore phenomena disentangled and uninfluenced from existing concepts or methods.

4.5.2 Research Process

The above expressed threefold methodological structure is transformed into a manageable research process through a sequence of different techniques. Insight into the time-space dimension is obtained by applying tools of biographical research (Roberts 2002). It is operationalised by following the life-story of an innovation through a major narrative with the key responsible person and subsequent interviews with the other main actors of the innovation process. Qualitative egocentric network analysis (Wassermann/Faust 1994) was chosen to explore the evolution of social network over time, the location of actors and content of interaction (the innovation is considered the ego, as will be explained later on). Triangulation (Rothbauer 2008; Flick 2011) and

mapping of the time-space path are means to combine the diverse data, as only their ensemble as a whole constitutes the Innovation Biography.

Let the actors explain! – Narrative Interviewing

There are three ways of starting the research process. Either an innovation is known from the beginning as being a promising candidate for an innovation biography, or a certain project, group or organisation, etc. is chosen which is assumed to have carried out an interesting innovation, or key informants (experts, etc.) recommend critical cases. Selecting the case as well as the definition of what is considered innovative is connected to the research context in which the Innovation Biography shall be conducted. Experience has also shown that Innovation Biographies are equally applicable on organisational, process, product, service or social innovations and – not unimportantly – also in the case of failed innovation processes. Intensive desk research about the chosen project, group or organisation should be part of the preparation for the narrative and for the interviews following the narrative. This provides relevant background information and facilitates communication with the interviewees.

The backbone of an Innovation Biography is the narrative interview with the major responsible person of the innovation process. It is an essential instrument of operationalising the open and explorative approach of Innovation Biographies.

The overall aim is to get in-depth insight into the entire process of knowledge creation from its beginning until its implementation and to have a first version of the biography. To start the narrative, the interview partner is motivated by an initial question that stimulates a free reflection of experiences in a continuous flow of words. To achieve this, the question needs to contain a clear starting point and an end (Jovchelovitch/Bauer 2000). A clear starting point is established by asking for the situation in which the first idea of the innovation arose. Flow of words is maintained by providing a straightforward 'narration corridor' by asking for the involved actors, the time-line, the milestones and barriers of the innovation processes. The conclusion relates to means of implementation or market introduction. More detailed questions at the end of the narrative should aim at concretizing important aspects, for instance, actors involved or the time-line of the biography that have not yet been described clearly by the interviewee.

It should not be unnoticed that quality and quantity of narrative information heavily depend on the narrator's ability and willingness to speak about the innovation process. In some cases the responsible persons simply do not want or cannot talk about the innovation process, because they have to protect intellectual property or the R&D partners of the firm. Furthermore, even a well-expressed detailed story may leave aside problematic periods, put certain actions in an inadequately positive light or vice versa, or may not mention major failure during the process (cp. Miles/Crush 1993 for a discussion of advantages and drawbacks of narratives). Partly, this can be balanced out by subsequent interviews carried out with other actors of the process as they might see things from a different perspective. However, a residual risk of getting inexact information will remain. Provided that the narrative was successful in terms of getting sufficient information about the innovation process, a first version of biographical text is developed that includes the time-line or sequence of events, involved actors, their geographical locations and the development progress.

Enriching the picture – Egocentric Network Analysis and Further Interviews

Based on the first version of biographical text, the social network of innovation is identified by subsequent desk research. Generally speaking, in egocentric network analysis which is applied here, a network is described via one node (ego), usually an organisation or a person and its relationship to other persons or organisations (Wassermann/Faust 1994). Egocentric network analysis only asks for the relations of one ego to different alters, but does not analyse the entire network (Jansen 1999). In Innovation Biographies, the node is neither a person nor an organisation, but the concrete innovation itself. In the first instance, the egocentric network analysis shall shed light on the actors that have taken part in the development.

Concretely, this means analysing modes and frequency of interaction, the type of exchanged knowledge, the sectoral affiliation etc. To better understand the evolvement of knowledge dynamics, it is of significance to know at what point in time a particular actor has got involved in the process, where his/her organisation or firm is located or when other events (e.g. newly set-up political regulations) have set knowledge dynamics in motion. This enables to analyse the impulses affecting knowledge dynamics, how they build upon each other, cause feedback loops or might even require a radical change in the direction of development. Egocentric network analysis is always selective (i.e. it is seen from the perspective of the "story teller") and covers only a particular part of a more complex and multiple network (Gerich/Lehner 2003). Its advantage is a straightforward access to the composition of actors, information on a considerably detailed level, and a direct evaluation of the influence the actors have on the innovation process.

The egocentric network is then combined with geographical and time data (where do actors come from? when did they get involved?). In so doing, every link of Innovation Biography is qualified with its territorial dimension, and the evolving spatiality of innovation processes' knowledge dynamics can be visualised (figure 11). The egocentric network is also crucial for exploring the next interview partners. This should be other persons who had decisive functions in the innovation process from inside the organisation or from external organisations. In a narrative, semi-structured, or structured way, depending on the quality of information obtained in the first interview, the first aim of these subsequent interviews is to enrich the biographical picture developed through the information of the first interview and implicitly have verified the information gathered. The second aim is to further interview partners (snowball sampling). The same interviewing procedure is then applied during follow-up interviews, so that the body of biographical material extends with the number of interviews. It is surely not possible or necessary to speak with every actor involved in the innovation process. What is important is to explore the full picture of the main actors, what they have contributed in terms of expertise and competence, when they entered the development process and where they were located.

Building the Biography – Triangulation

To make the biography accessible for analysis, the concluding step is to triangulate data of the various interviews, the egocentric and geographical analysis, and of the desk research into a coherent story. The ensemble of data sources eventually constitutes the Innovation Biography. Triangulation means applying different techniques to one object of study, which in this case is the innovation process (Flick, 2011).

To achieve maximum output, an optimal triangulation procedure contains data acquisition at different levels (Fielding & Fielding, 1986; Flick, 2011). In the case of Innovation Biographies,

- The various interviews constitute an individual level by letting the actors express their view.

- Data on the structural level, i.e. the involved actors, modes, frequency and geographical spread of interaction, is obtained by the egocentric network analysis and the construction of the time-space path.

- Document analysis as a third component, has the function to enrich the biography by understanding sectoral specifics and the contextual level.
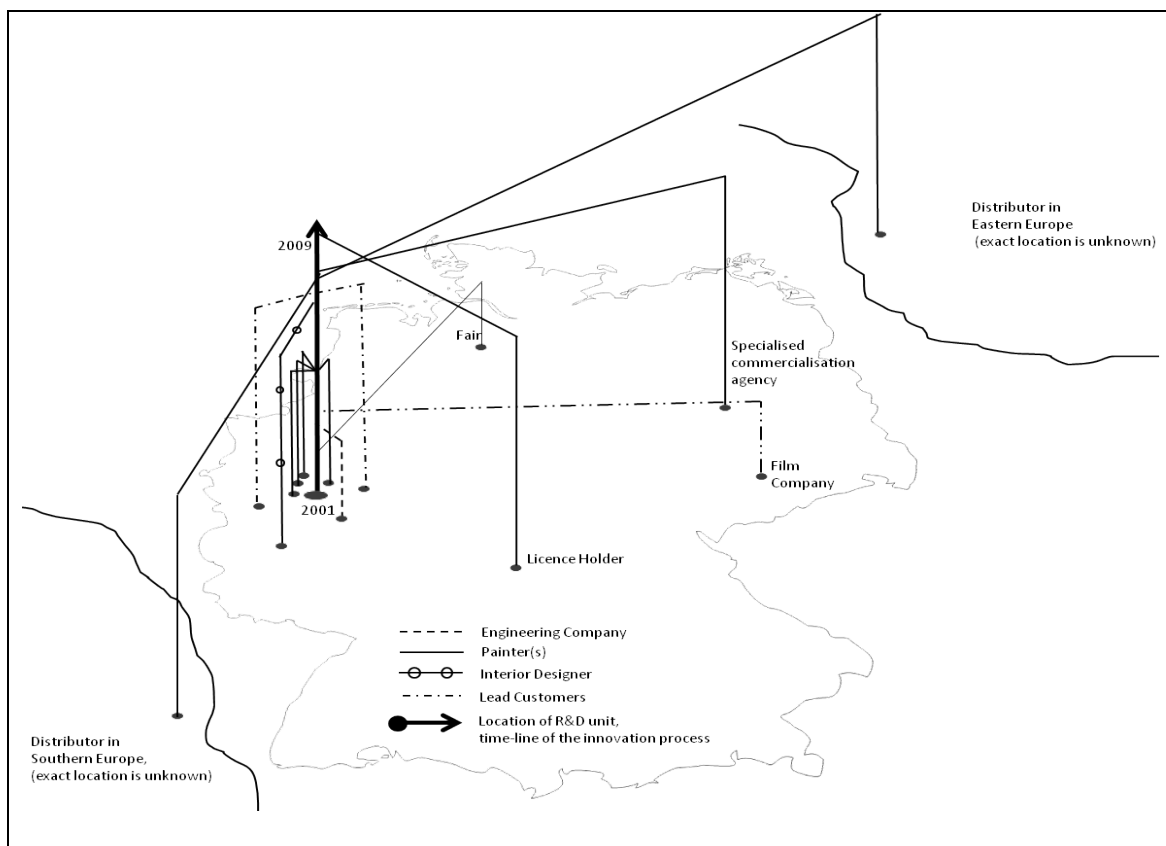
Source: Butzin, 2013, p. 47
Figure 11: Time-Space path of an Innovation Biography (example)

Based upon data triangulation, writing and analysing an Innovation Biography is a process of telling a real, detailed and "thick" story which covers all relevant aspects. These are the contextual settings and impulses through which the innovative idea arose for the first time; how the idea was further developed, the emergence and change of actor constellations over time, the question how this has influenced the innovation process, and through which channels they have got in contact with each other, etc. The coherent and multi-facetted case-study is a meaningful result in itself showing the complexity of knowledge dynamics in innovation.

A thick description of what was selected as a "critical case" is rich of information and has the "greatest impact on the development of knowledge" (Patton 2002, p. 236). Vissers and Dankbaar (2014), for example, have analysed a critical case with the research approach of Innovation Biographies as introduced in this paper, namely the development of a certain technology that was decisive for the growth of one of the largest green biotechnology companies of The Netherlands. In the biography, they disclosed social interrelations, other contextual determinants such as shareholdings, intellectual property rights, patents, and the developments on the US biotechnology market and showed how this had decisive influence on innovation development and company growth. Thereby, the reader gets exceptionally holistic insights into innovation behaviour and its mechanisms in green biotechnology that could not have been provided by narrow analyses of patents, licences, or inter-firm networks.

4.5.3   Advantages and Drawbacks of Innovation Biographies
The key methodological principle of Innovation Biographies is to follow the innovation idea over time by analysing the interactions of innovation actors and by applying an open, inductive approach to data analysis. Understanding the causalities of innovation processes gives insight on how knowledge from various sources

(geographical, sectoral) is combined during the innovation process. To conclude, major advantages and drawbacks of Innovation Biographies have been summarized here.

As for the advantages, firstly, through the process perspective, Innovation Biographies provide detailed accounts of the dynamics of innovation development. Innovation Biographies not only focus on content and social constellations, but also on the latter multi-scalar scope and evolution over time. They disclose the causalities and interdependencies of knowledge creation in innovation processes. Secondly, Innovation Biographies follow concrete innovation events at the micro-level. This is the actual level of innovative action within social groups, firms, networks, project teams, non-profit organisations, etc. It can be assessed how firm-internal knowledge is related to the various sources of external knowledge. Thirdly, the scope of Innovation Biographies is not limited through predefined categories, be they administrative areas, industry classifications, technological fields of patent statistics, etc. Innovation biographies enable analysis of cross-sectoral relations emerging on multiple territorial scales. Fourthly, Innovation Biographies are constituted by a standardised set of research instruments (narrative, interviews, ego-centred network analysis, and triangulation) that allows for comparative research without bias caused by the use of different instruments. This allows applying Innovation Biographies across different research teams and comparison of findings.

Every research approach brings along limitations that need to be considered when interpreting obtained results. Apart from bottlenecks and disadvantages related to the instruments of the research procedure (e.g. the narrative's dependence of interviewed person, and the selectiveness of egocentric analysis) discussed above, further limitations are: the fuzziness about the question when an innovation biography should start and when it should end?

Is it really possible to grasp the beginning of an innovation idea, do the interview actors really know the diffused situation when the idea arose for the first time? Is it possible to clearly say when an innovation process ends, i.e. when it has become an established routine, product or service? Secondly, the strong reliance on interviews requires the willingness of actors to cooperate with researchers. The likeliness to do so when reflecting successful innovation cases is much higher than to explicate a story of innovation failure. Until now, a solid set of failed innovation cases obtained with Innovation Biographies is still outstanding, not at least because related interview requests have been rejected. Thirdly, the immense difficulty to select and define critical cases. The question whether a case fulfils its purpose will only turn out after the research procedure and analysis are finalised and the generated content is evaluated against the one of other cases. In addition, labelling a case as a critical case requires particular knowledge of the researcher as regards the broader features of the innovation behaviour and knowledge creation dynamics. Fourthly, being an advantage and drawback at the same time, the methods of the research procedure concentrate on the narrow innovation process and do not refer to broader contextual determinants. There is thus the risk to provoke an isolated view on the innovation process, without referring to sectoral, institutional, etc. conditions necessary for its sound interpretation.

To conclude, Innovation Biographies strive to offer an alternative to the often highly abstracted research approach in innovation studies and to the focus on stylised aspects of innovation activity (such as patent applications). Innovation Biographies offer a methodological route to the realities of innovation action through which we can reflect or adapt existing, and establish new conceptual and theoretical considerations.

4.6   FIRST CONCLUSIONS

Having reviewed the assets and drawbacks of different methodologies and quantitative and qualitative methods the next chapter describes the chosen empirical design of SI-DRIVE on the background of this methodological review and the developed research propositions. In principle it has to be testified that the iterative and deductive/inductive methodological approach of SI-DRIVE is focusing on the context and the

detection of influencing factors of social ecosystems. An explorative access on social innovation is taken - theoretically based, exemplarily and case specific examined in a combined quantitative and qualitative approach. While a pure quantitative approach is running the risk to disregard relevant factors, combined with the qualitative approach of SI-DRIVE (multi-method approach) the aggregation of specific factors and variables and the statistical correlations of mapping 1 (1.000+ cases) will be enriched and context related interpretable by the inclusion of patterns of interpretation, action and knowledge (Brüsemeister 2008, 19ff.), done through the analysis concept of mapping 1 and contrasted by context related policy field and regional strategies reports in the first empirical phase (and later with the more in-depth within the case studies of the second empirical phase).

Social innovations will be reconstructed in a way combining the "how" with the social mechanisms producing this effect – the reconstruction of the whole social process of interaction and interventions, influencing factors and mechanisms. SI-DRIVE is not going into the research field without presuppositions (as suggested by some followers of the grounded theory approach, Glaser/Strauss, 1967): A sound theoretical framework is guiding the empirical research phases, iterative updated (as well as the methodology). Based on the working definition, the key dimensions and the research foci derived from the critical theoretical review the global mapping is structured by the theoretical framework and will collect quantitative and qualitative data, to guarantee the reflection of the given heterogeneity of social innovation.

The quantitative collection of 1.000+ cases is not looking at *statistical* representativeness but – lead by the theoretical framework and the derived research foci – looking at gathering a "representative" overview of all the relevant social innovation types and concepts all over the world and to assemble and analyse the complex spectrum of relevant factors and mechanisms.

The explorative, multi-method approach of SI-DRIVE, combining quantifiable data collection with qualitative methods for the discovery, description, systematisation, and understanding of social practices within specific societal sphere and policy fields will finally leading to a respective typology of Social Innovations.

5 EMPIRICAL DESIGN, METHODS AND TOOLS OF SI-DRIVE (MAPPING 1)

Against the theory and methodology literature review background implications for the selection and preparation of the SI-DRIVE empirical methods and instruments were drawn. It will be described which methodology and instruments (methods/techniques/tools) are being adopted for the data collection and analysis of SI-DRIVE global mapping (mapping 1). Also, the template and guideline for data collection using both qualitative and quantitative methods and associated techniques and tools will be described: for **data collection** and **analysis** and for **validating empirical results** (triangulation approach on the basis of mixed and combined qualitative and quantitative methods).

5.1 SI-DRIVE DATA COLLECTION DESIGN

Based on the theoretical and methodological review the first empirical phase (global mapping) was designed in detail within the agreed general methodological approach:

- **Mapping 1 (global or baseline mapping of social innovation):** state of the art reports, report of regional strategies, and selection and analysis of 1.000 and more cases for the SI database.

Step in between: Selection of 300 most important cases from mapping 1 as a basis for the selection of the 70 in-depth cases. Therefore relevant additional information about the cases has to be gathered than listed in mapping 1.

- **Mapping 2 (in-depth case studies):** further research on 70 selected cases, developing a typology of social innovation using mixed method research protocol consisting of detailed interviews, extensive status check, follow up surveys, participant observation, and Qualitative Comparative Analysis QCA.

1000+ cases (mapping 1)

300 cases (pre-selection)

70 cases (case studies)

The **first empirical phase (mapping 1: global and baseline mapping)** is consisting of four elements, each having a different focus:

1. Policy field reports: focusing on policy field related challenges and contexts of SI practices (practice fields)

2. Regional reports: focusing on general SI strategies in the twelve global regions

3. Survey for Mapping 1 (Database of 1.000+ SI cases): focusing on a worldwide collection of SI cases (projects/initiatives clustered by practice fields)

4. Social Innovation Database screening: focusing on already existing databases and making existing cases accessible.

There will be synergies but no overlaps between the different activities, because each element is focusing on a different perspective; together they will give a comprehensive picture of SI in the end, by combining these different perspectives.

The reports (regional, policy fields) and the databases (mapping 1 and external databases) could give inputs for each other, synergies will be guaranteed by the responsible policy field leaders and regional delegates. For

instance, the policy field reports (and mapping 1) will give an input for the regional reports (as a kind of summary from a regional perspective of the policy fields) and the external databases will facilitate inputs (cases) to the SI-DRIVE database of mapping 1.
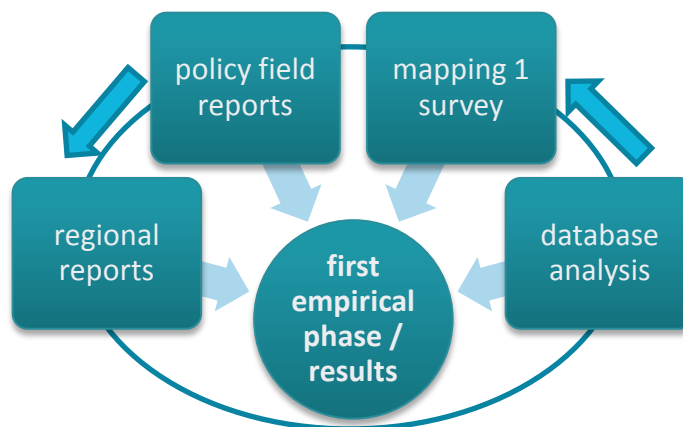
The relevant cases of the SI database screening will be integrated in mapping 1, the cases of the mapping 1 survey will illustrate the policy field reports and the results of the policy reports could be (partly) used for the regional reports. The data collection survey of mapping 1 is more a quantitative description of SI cases, the policy field reports contextualize the relevant European challenges and the SI "answers" to them, the regional reports are summarizing the social innovation strategies within the 12 global SI-DRIVE regions from a regional perspective. The external SI database screening is a resource of already listed SI cases SI-DRIVE makes use of for mapping 1.

For each of the field activities a template for research activities was developed:

1. Template for mapping 1: a net based survey with standardised and open questions and detailed instructions and guidelines (see enclosed document in part C, 6.1)

2. Policy field reports: a framework describing content, structure and activities for report (see enclosed document in part C, 6.2)

3. Regional reports: a framework describing content and structure of the report (see enclosed document in part C, 6.3)

4. Social innovation database screening: the relevant databases are listed in deliverable 3.1 "Database Screening Report and Manual".

5.2   MAPPING TEMPLATE (SURVEY FOR GLOBAL MAPPING)

Having finalized the selection criteria for the cases, most projects focused on template development for data collection. Following the chosen combination of quantitative and qualitative research the SI-DRIVE mapping template comprises both open-ended and closed questions. While the open-ended questions will yield information on the nature, impact, and outcome of the cases, the closed questions followed a standard format for segmenting the cases (Bryman, 2012). The developed structured template (see part C, 6.1) focused on

capturing the origin of the innovative practice and its observed impact. The key constructs underpinning the practitioner oriented template were derived from the theoretical review, advisory board contributions and validation from the SI-DRIVE partners and regional experts. The template was pilot tested by all the partners, reviewed for its outputs, and agreed for its usability (Bryman, 2012). The integrated cases will be continuously validated, for quality reasons and for the improvement of the common use of the template.

The comparable structure of the instruments is mainly based on the working definition of social innovation and the developed key dimensions. To repeat it we are looking at **new social practice defined as:**

- a new combination or new configuration of social practices

- in certain areas of action or social contexts

- prompted by certain actors or constellations of actors

- in an intentional targeted manner with the goal of better satisfying or answering needs and problems than is possible on the basis of established practices

- socially accepted and diffused (partly or widely) throughout society or in certain societal sub-areas, and

- finally established as a new social practice.

In addition the social innovation cases and reports should refer to the **five key dimensions** (see figure 3), including the relationship to technology and business innovation. This means, social innovation practices:

- have to be based on and addressed to **social demands, societal challenges** (and systemic changes, if feasible)

- have to describe **concepts and understanding** (analytical concept: social practice)

- have to embed **governance, networking and actors** (functions, roles and new concepts) for social change and development

- have to document the different phases of the **process dynamics** (mainly: mechanisms of diffusion: imitation, social learning; relationship to social change)

- have to describe **resources, capabilities and constraints** including capacity building, empowerment and conflict.

Beneath the definition of social innovation and the five key dimensions **additional Research Dimensions** (as already mentioned and described) are:

- **Policy Fields:** (1) education, (2) employment, (3) environment and climate change, (4) energy, (5) transport and mobility, (6) health and social care, (7) poverty reduction and sustainable development, (8) other

- **Cross-cutting themes**: (1) Information and communication technologies (ICT) and social media; (2) social entrepreneurship and social economy, social enterprises; (3) gender, equality and diversity; (4) demographic change; (5) migration; (6) empowerment; (7) human resources, knowledge; (8) governance and (9) other

- **Sectors of society:** public, private business, and civil society (including NGOs)

- **Global Regions** (Cultural Background): Europe (North, West, East, South – Member States / Non-member States) and other world regions: Russia, North and South America, Australia / New Zealand, South-Eastern Asia, Western Asia (Middle East), (South and Northern) Africa.

To establish an integrated concept of social innovation, a framework was developed that considers social innovation to be studied from *micro, meso, and macro perspectives*. Because the macro level is mainly oriented at reflecting social change the survey template for mapping 1 is focusing on the **meso and micro level** differentiating between "social practices" and related "projects/initiatives":

- "**practice field**" is a general type or "summary" of projects and expresses general characteristics common to different projects (e.g. micro-credit systems, car sharing)

- "**project/initiative**" is a single and concrete implementation of a solution to respond to social demands, societal challenges or systemic change (e.g. Muhammed Yunus's Grameen Bank which lends micro-credits to poor farmers for improving their economic condition, different car sharing projects or activities at the regional-local level).

Survey Content

The survey template is electronic with drop down items, pop up and help features for each of the standardised and open questions. It consists of ten subdivisions with major SI-DRIVE research questions to be answered:[15]

1. Basic project information
2. Practice field information
3. Project partners
4. Addressed social demands and societal challenges
5. Innovative solution
6. Process dynamics
7. Outcomes
8. Governance
9. Organisational capacity and resources
10. Drivers, barriers and strategies

This structure is also the basis for the foreseen SI-DRIVE database of SI cases - also to be used for further collection of social innovation projects and practices.

The first subdivision comprises basic project information data such as the name of the project, a brief description, the contact and website of the project.

The second subdivision of the database concerns the practice field. Information encompass the name of the practice field in English and original language, the description of the practice field and how it works and the sectors actively involved in the practice field such as the private, public, civil society and others. The database further includes ranks of respondents regarding the policy fields the practice field is addressing.

The following subdivision contains information on the project partners such as the name of each project partner, the country of origin (according to UN-classification), the sector (the private, the public, etc.), the type

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[15] The following description of the different subdivisions is adopted from deliverable D3.1.

of main support (idea development, funding, etc.) and the main implementing body with the webpage URL and a short description of the main implementing body.

The subdivisions four to ten provide data on the projects such as addressed social demands and societal challenges, the innovative solution provided, the process dynamics, the outcomes of the project as well as governance, organisational capacity and resources as well as drivers, barriers and strategies applied in implementing the social innovation project or initiative.

In subdivision four, the database includes ranks regarding the policy fields the project belongs to next to the sector and the actors of the project. In addition, it provides information on cross-cutting themes the project is addressing. These are: information and communication technologies (ICT) and social media; social entrepreneurship and social economy, social enterprises; gender, equality and diversity; demographic change; migration; empowerment; human resources, knowledge; governance and others (respondents may introduce other cross-cutting themes).

With regard to the innovative solution (subdivision five), the database provides data on the innovative character of the solution, the target groups and the involvement of beneficiaries. Within this subdivision information on process dynamics is available. In more detail, the data encompass:

- first motivation / trigger for initiating the project;
- the current stage of the solution
  - idea/inspiration - i.e. the project is developing the idea for a solution;
  - invention – i.e. the project is operationalising a new practice/concept for a solution;
  - testing – i.e. the project is testing the solution;
  - implementation – i.e. the project is implementing the solution on a long-term basis; and
  - impact – i.e. the project achieved significant impact based on long-term implementation);
- the country/countries where the project is currently implemented;
- the transfer of the solution to other territories/contexts; and
- the scaling-up of the solution (scaling through increasing target group reach, scaling through organisational growth, scaling through extending the network of project partners, scaling to other policy areas, scaling through imitation, scaling through multiplicators, scaling through differentiation, scaling through franchise , scaling through accreditation, scaling through institutionalisation by public authorities and others).

The sixth subdivision, the "outcomes", comprises data with regard to the description of the intended/planned outcome of the solution and the estimation on the reach/diffusion of the solution.

Within the subdivision on governance (seventh subdivision), data on project structures and methods are available. Furthermore, information on the relation of the project to a social movement, policy programme, umbrella organisation or networks is presented.

The database subdivision on "organisational capacity and resources" that follows provides information on the budgets and resources required to implement the social innovation. Finally, the database contains information regarding:

- the drivers of the project (rank option for up to three drivers such as networks, individuals, groups, innovative environment - "innovation culture", ICT, globalisation, competitiveness, regulations, financial resources, etc.);

- the barriers (no barriers, funding challenges, lack of personnel, absence of participants, knowledge gaps, etc.); and
- the strategies the project applies to overcome these barriers are collected in the section "drivers, barriers & strategies".

Collection, Selection and Integration of Cases

The **selection of cases** for the survey of mapping 1 is based on the definition of social innovation and the five key dimensions of SI-DRIVE (already described before). We will gather SI cases at **different, but all stages of the SI process**: from ideation and interventions to implementation and imitation/diffusion to impact and the establishment of new social practices, conducting social change (note: the establishment or institutionalization of a social innovation case will not be an exclusion criterion). For mapping 1 it is important to gather as much as possible the whole plurality and range of social innovation cases.

The collection, selection and integration of cases in the template will be done mainly by the project partners, organised by the policy field work package leaders. The advisory board members and their institutions are willing to support us in this activity. In addition to the integration of new cases the policy field leaders and partners should also have a look at cases of already existing and relevant databases (see the screening report, deliverable 3.1) to be integrated. A third source for the collection of cases are the databases and cases of other European SI projects SI-DRIVE is cooperating with very closely: namely TEPSIE, TRANSIT, SIMPACT, CASI. First common agreements about this are already made.
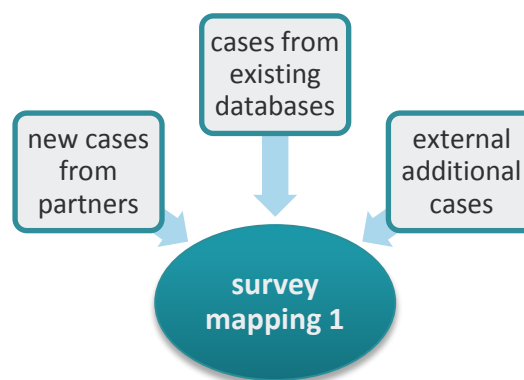
Definition: What is a Case?

Because there are a lot of social innovations which are not named as such and there are heterogeneous concepts of social Innovation, in this first empirical phase a case is defined as follows:

1. A case is what the experts of the regions (project partners, advisory board members) define as a relevant social innovation case (project or initiative and related social practice: see distinction described above and in the survey template).

2. A case is defined by, has to fit to the working definition of SI-DRIVE (mainly: novelty of the social practice, better and new practice and first diffusion in society).

3. A case has to be described by the five key elements of SI-DRIVE: SI should be described by all the five key dimensions (reflected in the template questions).

Anyway, the selection and collection of the SI cases in the first empirical phase will be an **open and structured** one. Every social innovation from the perspective of the regions, what is defined and seen as SI in the global regions and countries by the experts involved in SI DRIVE will be gathered. That means that by a given survey template (mainly structured by the key dimensions, policy fields and cross-cutting themes, being open for additional policy fields and cross-cutting themes than the predefined ones) the regional responsible partners and experts of the SI DRIVE consortium (including the advisory board members) will collect and describe SI cases of their areas within the given template.

Background for this approach is that we want to be open for what is defined and seen as SI in the world. Starting with this open approach we want to gather the different meanings and approaches of SI in the world,

not excluding and segregating any existing approach (one of the main objectives of SI DRIVE is to clarify what is meant by social innovation and to develop a consistent typology of SI).

But this open approach does not mean that everything can be collected. By the given common structure for the description (especially the key dimensions) the cases have to fulfill a minimum of requirements to be comparable over world regions and policy fields. Within this structure there will be given leeway for additional main structural elements that are not covered by our recent concept. The mapping 1 survey will be a more descriptive cases collection, open for a broad range of social innovation but described in a comparative way. That means that in the template there is space for a qualitative description *and* a quantitative comparison.

The global selection and collection of 1.000+ cases will lead to a comprehensive picture of world regions and policy fields' related cases. The identification and selection of cases follow the principle of **mapping regional and policy field related to the given diversity and contextual issues**! Mainly the policy field partners and leaders as well as the regional delegates will decide which and how many cases will be relevant. So in the end there will be diverging numbers of cases in each of the matrix fields. The already listed cross-cutting themes will be the third dimension, but mainly an analysis dimension rather than a selection criterion.

Global Areas / Policy Areas	Europe				Non-European Countries								Number of cases in total
	Northern Europe	Western Europe	South Europe	Eastern Europe	Russia	North America	South America	Australia, New Zealand	Asia	South-Africa	Middle East	Near East	
Education	10-20	10-20	10-20	10-20	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	**About 150**
Employment	10-20	10-20	10-20	10-20	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	**About 150**
Environment and Climate Change	10-20	10-20	10-20	10-20	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	**About 150**
Energy Supply	10-20	10-20	10-20	10-20	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	**About 150**
Mobility/ Transport	10-20	10-20	10-20	10-20	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	**About 150**
Health and Social Care	10-20	10-20	10-20	10-20	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	**About 150**
Poverty Reduction	10-20	10-20	10-20	10-20	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	**About 150**
Other Policy Fields	??	??	??	??	??	??	??	??	??	??	??	??	**??**
Number of cases In total	**About 120**	**About 120**	**About 120**	**About 120**	**About 90**	**About 90**	**About 90**	**About 90**	**About 90**	**About 90**	**About 90**	**About 90**	**Min. 1.000**

The figures are just an orientation: The number of cases realised are depending on the SI areas, strategies and diffusion in the policy fields and world regions – decided by the policy field partners.

Figure 12: 3D collection of cases

5.3   REGIONAL AND NATIONAL RESPONSIBILITIES

To fulfil this matrix the main responsibility is in the hand of the policy field leaders as coordinators of the collection and selection of cases within their policy field, assisted first by the policy field partners and additionally supported by the regional delegates and other national partners. The regional delegates should be integrated for regions not represented by the policy field partners. This is necessary to cover as much as possible all the twelve selected world regions of SI-DRIVE, even in the different policy fields. The Advisory Board members will support the policy fields and the regional delegates in this direction as well.

The regional delegates will support

- the policy field work packages on demand, on regions the partners of the specific policy field work package could not cover

- the regional report responsible by delivering a chapter of their specific region (supported by the other partners and advisory board members).

Additional and more global support will be organized by European and international institutions being partners or advisory members of SI-DRIVE:

- EVPA European Venture Philanthropy Association

- OECD Center for Entrepreneurship/LEED Forum on Social Innovation

- United Nations Economic and Social Commission for Asia and the Pacific

- The Economic Commission for Latin America and the Caribbean (ECLAC).

All in all the following pictures illustrates the regional coverage (the dark and framed areas are represented by the SI-DRIVE partners and advisory board members).
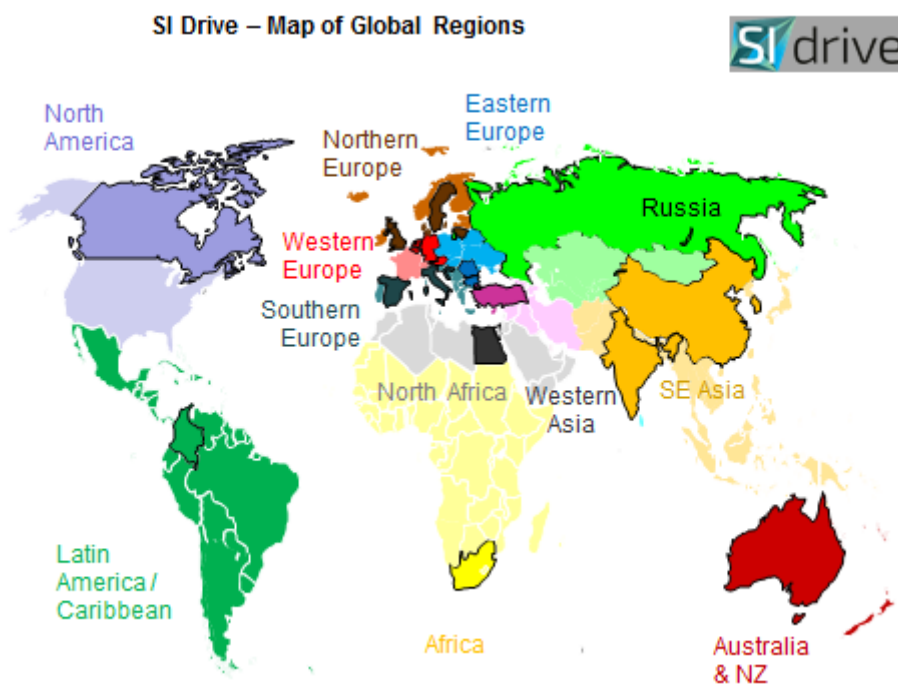
Figure 13: Regional coverage of SI-DRIVE global mapping

5.4   POLICY FIELD AND REGIONAL STRATEGY REPORTS

While survey of mapping 1 is a more descriptive research, the **policy field reports** (done by the policy field leaders and their partners will be more analytic. The report has to be done with support of the regional

delegates and national responsible partners. The mapping cases should be analysed for the related policy fields as well and could be used for illustration of the main results. Detailed instructions are given in the enclosed template for the policy field report (see enclosed document, part C 6.2).

The regional strategy report (summarised by ZSI with support of the regional responsible partners) will expand the empirical findings of the mapping survey and the policy field reports from a regional strategy perspective (ZSI will be supported by summaries of the 12 global regions done by the designated regional delegates, again: with support of the partners and advisory board members). Detailed instructions are given in the enclosed template for the regional report (see part C 6.3).

For both reports it will be efficient to describe social innovation in Europe from a European Union perspective as a whole and then add regional (North, West, East, South Member States and Non-member states) and (national) diversities.

5.5   WORLDWIDE MAPPING DATABASE[16]

Within the European and global mapping, each of the project partners is asked to deliver *condensed* information about their country in each of the policy fields (by desk research and complementing expert interviews). The guiding principles for collecting the information will be done by a given template derived from the theoretical framework and methodology. As soon as the country-data (quantitative and qualitative) is delivered, a harmonized report reflecting on social innovation dynamics of the policy field both from the perspective of international organizations (OECD, EU, UN) and trends, as well as from different countries (comparing differences/similarities, etc.) has to be prepared.

The first empirical phase offers a global overview of social innovation and its regional and cultural backgrounds and differentiations. The main task is to compare European with global regional approaches, analyse the different approaches and priorities, and identify good practice and lessons learnt. We aim at analysing data gathered in the SI-DRIVE database, for instance, according to the geographical scope of the practice fields, the projects and the project partners of the cases; the addressed social demands and societal challenges in the different world regions; the innovative solutions provided by social innovation cases; the process dynamics that occur by implementing social innovations in the different world regions; and the drivers, barriers and strategies (each of the items can be analysed within the different policy fields). Therefore WP3 (Global Mapping) acts as an interface between WP2 (methodology), WP4-10 (seven policy fields) and WP 11 (policy recommendations). Together with the policy field leaders and the leaders of WP2 (Methodology):

1. The appropriate use and appropriateness of methodology applied in the data collection process will be monitored.

2. The quality of social innovation cases in form and content will be checked.

3. The detailed analysis of social innovation case studies delivered by the seven policy fields (WP4-10) will be compiled and summarised.

In SI-DRIVE we differentiate between projects, practices, and policy fields, whereas the templates will only be filled for either a project or a practice. A policy field defines a thematic area in which projects/practices respond to social demands, societal challenges or systemic change. Thus, a policy field is also a field of practice. E.G. the policy field education refers to many different combinations of practices such as teaching in school classes, writing exams, assessing pupils with marks, etc. The social innovation cases derive from

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[16] See in detail deliverable D3.1 Database Screening Report and Manual.

different sources such as social innovators (practitioners) and the broader public, invited institutions funding or supporting social innovation, external databases from research institutes or award giving organisations, and partners. WP3 will be responsible for implementing the data collection procedure for each specific source and for compiling, completing and validating the data.

The SI-DRIVE team decided neither to migrate databases nor to integrate cases form existing databases directly due to the incompatibility of data sources with our SI empirical work approach and as a consequence the loss of quality regarding the cases. Nevertheless, the screened databases serve as important information source in SI-DRIVE world regions and policy fields. Whether or not information on specific cases that are already gathered via other database sources are integrated independently and upgraded from the already gathered information into the SI-DRIVE database is thus a decision of the policy field leaders and partners.

The design and implementation of world-wide social innovation database includes quality assurance of content and its systematic archiving. Linking to and, where feasible, the integration of available external databases will be crucial. The online interface will not stay passive. The SI-DRIVE partners and advisory board members involved will actively make contacts through their dedicated European and world-wide networks to organisations holding information on social innovation projects and programmes (in science, research, and respective communities), to public and private institutions supporting social innovations (funders, donors, awards, hubs, incubators), and directly to organisations and individuals carrying out social innovation projects (practitioners) and research.

Thus, the gathering information and dissemination of results must not be considered one-way communications. Research in 'Science Mode 2' reveals key features of trans-disciplinarity, meaning that scientists are not the only ones in control of generation and utilization of the knowledge, facts and figures produced. SI-DRIVE will use social networks, open access platforms of many kinds for research and mutual communication. SI-DRIVE shall engage in crowd-sourced or networked science, also known as 'Citizen Science' (cf. Hand 2010). This concept is suitable for SI-DRIVE because of the world-wide collaboration within the project consortium and further expansion of collaboration we envisage. When teams of scientists cooperate across continents, the power of the internet and other media (from broadcasting to social networks) is of decisive relevance. At the same time the same tools can be used to involve stakeholders and practitioners in research processes.[17]

In addition to regional and policy field classification the database will feature a criteria-based assessment system that allows qualitative description of the main dimensions of the mapped social innovations as well as the assignment of quantitative scores to these dimensions. This system will be further refined with each selection step. The on-going content assessment and validation will be the basis for further qualitative analysis as well as for the improvement and adaptation of the database.

The scores will depend on the presence and intensity of the main dimensions as derived from the qualitative analysis of descriptions. Based on these scores every case of social innovation will have its own profile that can also be visualised. The quantitative analysis will make use of the assigned scores to deliver a descriptive overview on the social innovations in the database. Qualitative analysis and scores will lead to a typology of social innovations that will be shown according to policy fields and per European and world regions, enabling web-based search procedures based on interactive features embedded in multi-dimensional online presentations (for multiple use).

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[17] Many initiatives exist, focusing on a wide variety of issues, so that connections can be made according to SI-DRIVE policy fields. E.g., the Louisiana Bucket Brigade (http://www.labucketbrigade.org/) deals with health and environment, two of our policy areas. On a more general level, the Citizen Science Alliance addresses the capacity of Citizen Science for science as such: "The CSA is a collaboration of scientists, software developers and educators, who collectively develop, manage and utilize internet-based citizen science projects in order to further science itself, and the public understanding of both science and of the scientific process. These projects use the time, abilities and energies of a distributed community of citizen scientists who are our collaborators." (http://www.citizensciencealliance.org/)

5.6   SI-DRIVE DATA ANALYSIS

The data analysis concept of SI-DRIVE is following the methodological principle of combining quantitative and qualitative research methods. Therefore the filtering and selection of cases is made on the background of quantifiable criteria (key dimensions, key performance indicators, etc.) and qualitative investigation, done mainly by Qualitative Comparative Analysis (QCA).

5.6.1   Case Filtering and Shortlisting Process in SI-DRIVE

The cases specific to projects and practices will be accumulated using a pre-developed template. These cases will then be identified and segmented across the seven policy fields (education, employment, environment and climate change, energy, transport and mobility, health and social care, poverty reduction and sustainable development) of interest to this research. The minimum criteria for being considered a valid case for this research will then be identified as key indicators for the seven policy fields. While some of these indicators will be common (societal impact etc.) across all policy fields, some will be specific (work skills etc.) to each field. Policy field, theory and methodology, as well as policy leaders (as part of the SI-DRIVE Steering Committee) will come together to validate and map the relevant cases to ensure that they satisfy the theoretical framework, mainly the SI-Definition and the five key dimensions of social innovation (figure3).

This research will also explore the probabilities of incorporating suitable software to search for keywords that will be representative of the indicators for the five key dimensions. Based on the key performance indicators (KPI), the analysis will be structured and 1000+ cases will be reduced to arrive at 300 cases. Gathering additional information for these 300 cases they will be further filtered down to 70 cases best suited (figure 14).
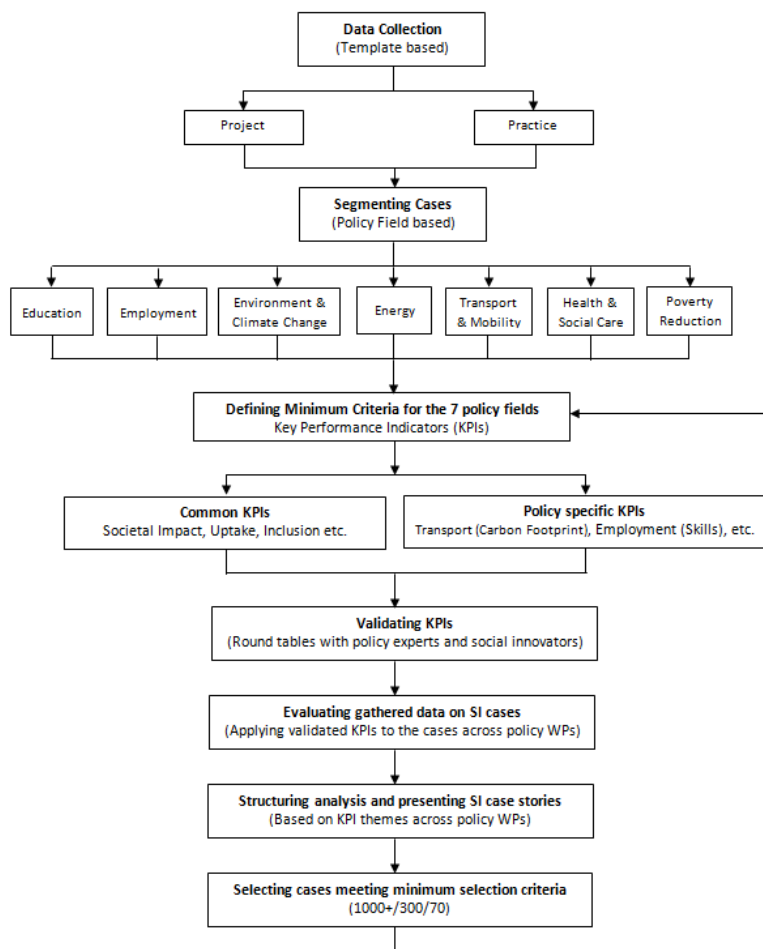
Figure 14: Case Filtering Criteria

5.6.2   Qualitative Comparative Analysis (QCA) and Content Analysis

Qualitative Comparative Analysis (QCA) (Rihoux and Ragin 2009) technique will be used within mapping to help combine findings from different cases, based on configurations (i.e. patterns, clusters) of the identified factors that influence social innovation. This will help verifying certain combinations of factors which form a configuration of variables that are present in a specific social innovation case.

By comparing these configurations across cases, generalizable conclusions regarding the drivers behind social innovation will be drawn including information on which configurations (combinations of variables) dominate over other configurations, and so forth. As a result, QCA will help establish and construct a truth table of all possible configurations (Ragin 1987; Fiss 2009) leading to the delineation of social innovation characteristics and the provision of generic outcomes across policy fields, and the regions in Europe and world-wide, and also across various socio-cultural contexts and cross-cutting themes. The construction of **truth tables** for each policy area will be utilised as a lens to identify and perform in-depth case studies in mapping 2. In this respect, the common theoretical and analytical framework that will be used for the project will be derived providing guidance and structure for these case studies.

A truth table or table of configurations is a display of all configurations based on a given dataset (see table 8 below). A configuration is a combination of conditions (a combination of independent variables) that is resulting in a certain outcome. A truth table consists of rows, namely all the (empirical and theoretical)

possible configurations. Each row has an outcome: the variable to be explained (the dependent variable) by the conditions. An outcome is defined in terms of 'present' or 'absent'. Therefore: each row tells us if a combination of independent variables may or may not lead to the presence or absence to an outcome; in our case: the absence or presence of 'social innovation'. For each outcome the truth table allows to conclude that configurations correspond to one, one or more, or no empirical case(s).

| Configuration | Organizational Characteristics | | | | Outcome |
	A	B	C	D	Z
1	Yes	Yes	Yes	Yes	Yes
2	Yes	Yes	Yes	No	No
3	Yes	Yes	No	Yes	Yes
4	Yes	Yes	No	No	Yes
5	Yes	No	Yes	Yes	No
6	Yes	No	Yes	No	No
7	Yes	No	No	Yes	?
8	Yes	No	No	No	No
9	No	Yes	Yes	Yes	Yes
10	No	Yes	Yes	No	Yes
11	No	Yes	No	Yes	No
12	No	Yes	No	No	?
13	No	No	Yes	Yes	No
14	No	No	Yes	No	?
15	No	No	No	Yes	?
16	No	No	No	No	Yes

Table 8: Example Truth Table

The purpose of the method that uses truth tables (namely the chosen QCA) is to study the richness of cases (even of a small number of datasets), and to relate the respective outcomes to a mix of independent variables. This corresponds to the practice of how people experience complex innovations, namely that different combinations of factors can lead to a certain (namely the same) innovation, because every practical situation is unique. Therefore, the use of truth tables within QCA is a good method **to map the variety** of social innovation examples. The method leaves space for unique circumstances, such as contextual aspects, including culture, religion, ethics, welfare systems, political system, etc. across the European and global regions. Additionally, it will offer the opportunity to determine the relevant variables and configurations that SI-DRIVE aims to compare across cases, practice fields and policy areas, cross-cutting themes, member states and continents.

Qualitative Comparative Analysis (QCA) is an approach within the family of set-theoretic methods (Rihoux & Ragin, 2009). Both methods also allow studying the cases qualitatively and quantitatively, which results in keeping the richness of cases combined with the possibility of limited generalisability. Set-theoretic methods are approaches to analysing social reality in which (a) the data consists of set membership scores; (b) relations between social phenomena are modelled in terms of set relations; and (c) the results point to sufficient and necessary conditions and emphasize causal complexity (Schneider & Wagemann, 2012: 6).

The variant of this kind of fuzzy sets enables assigning scores to cases on a continuum, which creates continuous variables (Ragin, 2008). Scores are assigned to attributes to reflect the extent to which cases belong to the set, which is known as data calibration. Once the researcher specifies the three relevant scores (fully in, fully out, and neither in nor out), the software, fs/QCA (Ragin et al, 2008) completes the calculations to create the continuous variable. In effect, this creates a continuous variable that measures the degree of membership in the set. This is a critical step in the analysis. Having quantified the data, a truth table is

constructed that shows all potential configurations of the causal conditions (2^n possible configurations, based on n causal conditions). The researcher then removes the combinations that are not represented in the data set. The next step is to select those configurations that most consistently occur with the outcome variable, innovation resilience behaviour, and code them with a 1; all less consistent combinations are coded 0. The outcome of this procedure is a set of configurations that demonstrate the necessary and/or sufficient conditions that result in the outcome or lack thereof.

The central function of cases is to enrich QCA-analysis with in-depth information from face-to-face and group interviews with organisation members, where projects and team dynamics as studied as cases. We assessed configurations of causal combinations in mindful infrastructure that did or did not result in innovation resilience behaviour. The interviews gave further explanation and background into the mechanisms of mindful infrastructure and innovation resilience behaviour (thickness).

5.6.3 Validating Empirical Results ("Triangulation")

Given the large amount of data being gathered on the social innovation cases, data triangulation technique was deemed suitable for this research. Denzin (1978:291) defines triangulation as "the combination of methodologies in the study of the same phenomenon". In addition, he outlines four main types of triangulation: (a) data triangulation: use of a variety of sources in a study; (b) investigator triangulation: use of multiple researchers; (c) theory triangulation: use of more than one theoretical scheme for interpreting a phenomenon (d) methodological triangulation (simultaneous and sequential): use of multiple methods to study a research question. Jick (1979) defined triangulation by combining qualitative and quantitative methods. Because these methods should be seen as corresponding and complementary, rather than contradictory they are all more or less embedded already in the SI-DRIVE methodology and the validation of the empirical results being generated.

As illustrated in figure 14, the social innovation cases will be sequentially reduced from 1000 cases, to 300, to ultimately 70 social innovation cases. The final 70 social innovation cases post the filtering process will be subject to triangulation. Each case will be analysed against the theoretical definitions and performance indicators that will also be subject to experts' discretion to confirm the validity of the cases, which will induce triangulation in the data collection process.

Not only the mixed-methods design, the combination of quantitative and qualitative methods and techniques and quality control mechanisms for proving the collected cases will help to validate the results of SI-DRIVE, group discussions within the policy field and foresight forums and international round tables (see deliverable D11.1) are also a part of the validation process as the quality review board (see chapter 3 "Quality Management Approach" of deliverable D13.1).
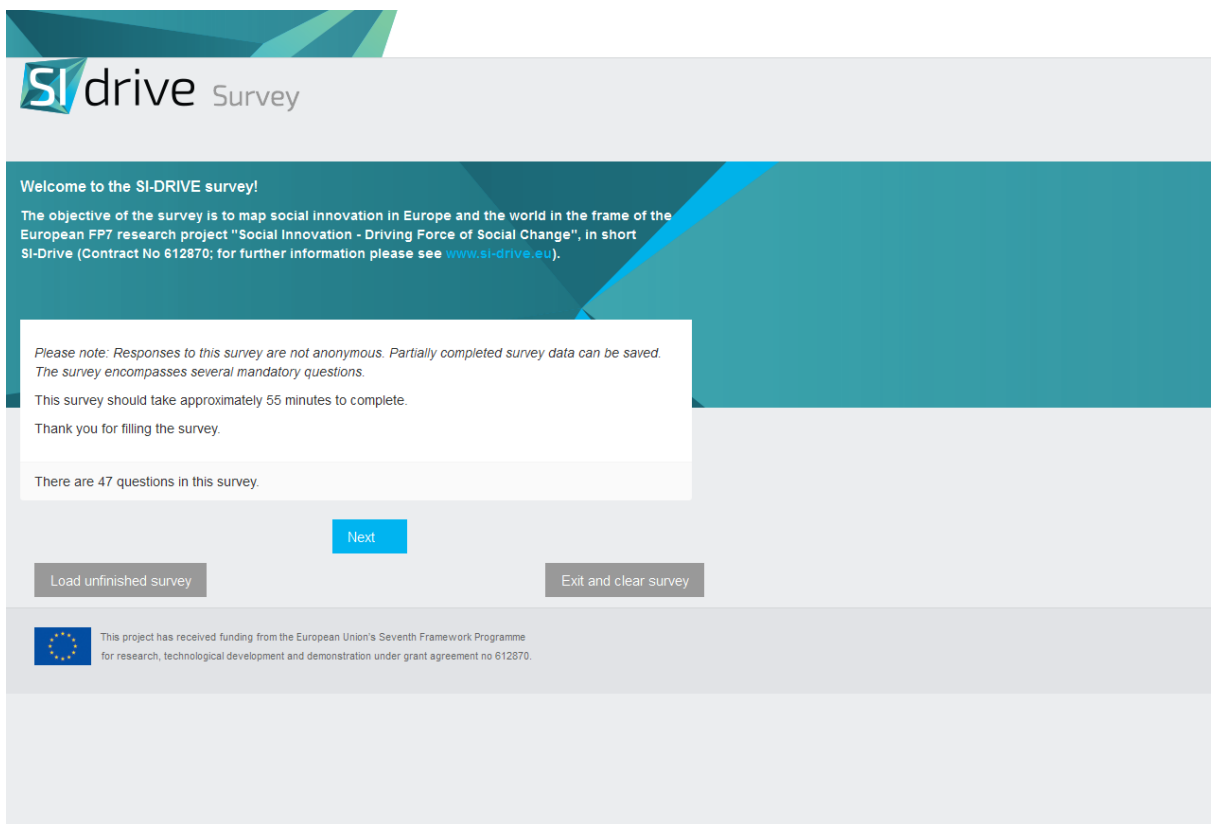
PART C: SI-DRIVE TEMPLATES (ANNEX)

6   TEMPLATES FOR GLOBAL MAPPING

This annex is collecting the templates for the
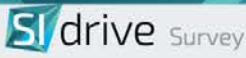
1.   global mapping survey (1.000+ cases)

2.   seven policy fields reports

3.   regional report (social innovation strategies within the 12 world regions).

6.1   GLOBAL MAPPING SURVEY

SI drive Survey

0% — 100%

Basic project information

Definition of "project": A project/initiative is a single and concrete implementation of a solution to respond to social demands, societal challenges or systemic change.

Please provide us with the name of the project

Please fill in at least one answer

Name in English language _____

Name in original language _____

Acronym of project _____

* Please describe the project in 3 sentences (max. 200 characters).

_____

Please provide the webpage of the project (if applicable)

_____

Please provide the following information for the main representative/contact person of the project

Please fill in at least 3 answers

First Name _____

Last Name _____

Email _____

Telephone _____

* Please provide the country for the main representative/contact person of the project.
Choose one of the following answers

Please choose... ▾

* Please provide the city and the postal code for the main representative/contact person of the project.

City _____

Postal code _____

Gender of main representative/contact person

○ Female

○ Male

Previous Next

Resume later   Exit and clear survey

SI drive Survey

0% 100%

Practice field

Explanation/Definition of "practice field": A practice field emerges when similar projects become generalised, diffused and stabilised.

Examples of practice fields: Micro-finance systems, urban gardening, participative budgeting, carsharing, regional currencies, crowdfunding, community supported agriculture, energy cooperatives, etc.

Generalisation:

- *There is a general/common term for the practice field.*
- *There is a general/common concept describing how the practice works.*

Diffusion:

- *There are several independent actors and projects in different geographic areas, which refer to the common term and apply the common concept.*

Stabilisation:

- *There are organisations and/or networks, which promote, support or transfer the practice (networks, platforms, umbrella organisations, scientific institutions, public bodies, etc.).*

*

Does the project belong to an existing practice field?
Choose one of the following answers
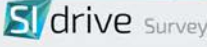
Please choose... ▼

This drop-down menu contains all practice fields, which have been entered in the SI DRIVE database so far. Please identify the practice field the project belongs to.

[Previous] [Next]

[Resume later]   [Exit and clear survey]

SI drive Survey

0% ▢▢▢▢ 100%

Project partners

Explanation: A "project partner" is an individual, group, organisation/institution or network directly supporting the project and the implementation of the solution.

Explanation: The "main implementing body" is the individual, group, organisation or network, which has the main responsibility for implementing the solution.

Please provide the following information for all project partners.

Name of project partner	Country	Sector	Type	Type of main support	Is this the main implementing body?
	▼	▼	▼	▼	◯

[+] [-]

Press the [+] button to add another project partner. Please provide all the information for each added project partner.
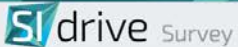
Please provide the webpage of the main implementing body.

Please provide a short description of the main implementing body.
(max. 600 characters)

Previous   Next

Resume later   Exit and clear survey

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 612870.

SI drive Survey

0% ▭▭▭ 100%

Innovative solution

Explanation: The "innovative solution" is the service, product or practice offered by the project to respond to social demands, societal challenges or systemic change.

* Please describe the innovative solution the project is offering.
(max. 2.000 characters)

* How would you describe the innovative character of the solution?
Choose one of the following answers

○ The solution has been originally developed by the project partners and did not exist in other areas.

○ The solution has been adopted from other projects and has been moderately modified/improved.

○ The solution has been adopted from other projects and has been significantly (!) modified/improved.

○ Other:

* Please describe the target group the solution is addressing
(max. 600 characters)

* Did the project involve users/beneficiaries in the development of the solution? If yes, please describe how users/beneficiaries were involved in the development of the solution.
Choose one of the following answers

Please choose... ▼

Previous   Next

Resume later   Exit and clear survey

SI drive Survey

0% ▭▭▭ 100%

Outcomes

Explanation: Outcomes are the immediate changes in characteristics of the target group caused by the innovative solution (e.g. changes in attitudes, behaviour, knowledge, skills, status, health, resources, etc.).

Please describe the outcome of the solution.
(max. 1.200 characters)

Please specify the spread/diffusion of the solution (e.g. all persons reached age of 12 to 16 at risk of leaving school early in the town of Vienna).
(max. 1.200 characters)

Previous   Next

Resume later   Exit and clear survey

SI drive Survey

0% [========   ] 100%

Governance

Explanation: By "governance" we refer to structures and methods for coordinating and managing a project.

Please describe by which structures and methods the project is coordinated and managed (executive board, steering group, etc.).
(max. 1.200 characters)

Please describe the objectives the coordination and management sets for the project.
(max. 1.200 characters)

Is the project related to a social movement, policy programme, umbrella organisation or network?

	Name in English language	Name in original language	Short description
Social movement			
Policy programme			
Umbrella organisation			
Network			

A **social movement** is a large grouping of individuals and organisations, which focus on specific political or social issues (e.g. civil rights movement, environmental movement).

A **policy programme** is implemented by a public body and combines/coordinates several policy actions for achieving a specific policy objective (e.g. policy programmes on homelessness, poverty reduction, digital literacy).

An **umbrella organisation** is a formal association of thematically/functionally related organisations, who become members of the umbrella organisations to advocate a common interest (e.g. International Labour Organization - ILO, the European Federation of National Organisations Working with the Homeless - FEANTSA).

A **network** can be informal or formal and consists of several independent individuals, groups or organisations, which cooperate/exchange on a common issue (e.g. Intercontinental Network For The Promotion Of Social Solidarity Economy - RIPESS).

Previous   Next

Resume later   Exit and clear survey

SI drive Survey

0% ▭▭▭▭ 100%

Organisational capacity and resources

Please enter the number of persons directly supporting the implementation of the project for each of the following staff types.
Only numbers may be entered in these fields.

Regularly paid employees
Volunteers
External advisers and experts
Other

Please provide the total yearly project budget in Euro.
Only numbers may be entered in this field.
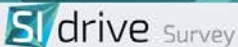
Which funding sources does the project use?
Check any that apply

☐ **Own contribution**

☐ **Partner contributions**

☐ **European Union public funding**

☐ **National public funding**

☐ **Regional public funding**

☐ **Funding from international donors (e.g. United Nation, UNICEF, World Bank)**

☐ **Economic return from own products/services**

☐ **Foundations and philanthropy capital**

☐ **Single donations from private individuals**

☐ **Donations from private companies**

☐ **Crowd funding platforms (e.g. kick-starter)**

☐ **Participation fees**

☐ **Other, please specify**

Previous   Next

Resume later   Exit and clear survey

6.2 POLICY FIELD REPORT ON SOCIAL INNOVATION

developed by Anna Butzin (IAT), Peter Oeij (TNO), Dieter Rehfeld (IAT)

INTRODUCTION

This document contains guiding questions and a template of how to structure the policy field reports in order to ensure comparability across all policy fields. We ask you to generally follow the structure. However, as you are the experts of your policy field, please feel free to integrate additional research questions and aspects relevant for social innovations in your policy field (or leave out aspects irrelevant in your case).

The report needs to be delivered to the Commission by end of February. As it needs to go to through the quality check of SI-Drive in advance, please send it to the coordinator on 13th of February 2015 at latest!

Scope of the report
The state-of-the-art report will provide a policy field specific study on social innovation and the related governance system. It should address recent challenges, corresponding practice fields of social innovation as well as social innovation projects. Thereby, the European, national and global level will be taken into account.

Objectives of the report and overall research question
The first objective refers to the co-evolvement of governance structures and social innovation practices and projects within the policy field (for definitions see the glossary in the appendix). The second objective refers to the policy field's distinctions across different geographical levels.

- Objective 1: To elaborate how the policy field's governance system influences social innovation practice fields and projects and, vice versa, how it is influenced by them. Thereby, drivers and barriers, conflicts, and roles of different actors should be worked out in detail. (SI-Drive key dimensions: Governance, networks, actors; Process Dynamics; Resources18)

- Objective 2: To elaborate the role of different levels in the policy field's governance system and social innovation practice fields and projects on the EU, national and global level.

The objectives are supported by the following overall research question:

- What kind of social innovation practices can be found in the policy field? Which challenges and social needs are they responding to? (SI-Drive key dimensions: concepts of social innovation; societal needs and challenges)

With its emphasis on the governance context of social innovation in the policy fields, this report is complementary to the SI-Drive mapping which asks for details of concrete social innovation practices and projects, as well as to the SI-Drive report on social innovation in the different world regions, which elaborates distinctions of social innovations according to a global context.

STRUCTURE OF THE REPORT

The structure of the report is organized according to three building blocks (European, national and global perspective) and nine research questions. There is a separate template for the national level to be sent to partners with respective responsibilities.

---

[18] The key dimensions are discussed in the literature review developed in work package 1 of SI-Drive.

For the general structure of the report (a format is provided in the table on page 3), we suggest starting with the elaboration of the policy field from a European-wide perspective:

Questions 1-2 to be done by work-package lead and co-lead.

1. How does the policy field's <u>European</u> governance system address specific challenges and what role does social innovation play?

In order to discuss the question, please refer to the 1) current/future challenges of the policy field and their societal consequences, 2) the strategies/objectives to tackle them (please emphasise the role of social innovation) and 3) the governance structure relevant for social innovation.

Suggestion: As concerns analysis of the governance system, please refer to relevant actor groups, their stakes, interests and alliances; the institutional frame including relevant regulations; drivers, barriers and conflicting elements. Analysis should refer to the governance system as a whole in order to get an overview, but emphasise those structures of clear relevance for social innovation. Do different actor groups on European level (public, private, civic) have different objectives and strategies to tackle the challenges? To what degree are they compatible/ conflicting, for example when new structures related to social innovation meet established ones? How do the objectives and strategies integrate social innovations? What role do technological solutions play? How are social and technological solutions related to each other? (SI-Drive key dimension actors, networks, governance). What challenges seem to remain unaddressed? If possible, please also assess the relation with the cross-cutting themes of SI-Drive (see glossary in the appendix).

2. What are corresponding practices fields of social innovation on European level?

Classify relevant practice fields of social innovation and analyse their distinctions by referring to the questions raised above (potential of the practice field, actors groups, new versus established structures, regulations, drivers and barriers, etc.). In how far do the above analysed governance structures support or hinder the practice field? Which actor groups are open towards the practice field, who tries to prevent its further establishment?

Following the three levels of the policy field report (European, national, global), the subsequent part should focus on the specifics of the national level or more fine-grained regional levels (Northern, Southern, Western, Eastern Europe) within the EU. The SI-Drive description of work (DOW) provides the important information which project partner is responsible for which countries/ European regions in the description of the policy field work packages. Accordingly, we suggest discussing the following issues:

Questions 3-4 **to be done by the partners responsible for the countries mentioned in the DOW (see extra template).** This can also be a selective account. We should follow a pragmatic approach that correlates to the expertise of partners involved in the policy field. A more detailed cross-country comparison of social innovations in the policy fields will be conducted during summer 2015 based on the data derived through the SI-Drive mapping.

- It is the task of the work package leader to instruct partners (with national responsibilities) about the work to be done.

1. What is the governance structure of the policy field in the European country/countries you should analyse (cf. work package description in DOW)? NB! If adequate, this can also be a more abstracted analysis according to "Northern Europe", "Eastern Europe", etc. with national level examples.

The national level governance structure/s of the policy field should be analysed. Please refer to relevant actors groups, their stakes, interests and alliances; the institutional frame including relevant regulations; drivers, barriers and conflicting elements. As in the case of the European level, analysis should refer to the governance structure as a whole in order to get an overview, but emphasise those *structures of clear relevance for social innovation*. Do different actor groups (public, private, civic) have different objectives and strategies to tackle the challenges? To what degree are they compatible/ conflicting, for example when new structures related to social innovation meet established ones? To what degree do the objectives and strategies integrate social innovations? What role do technological solutions play? To what degree are social and technological solutions related to each other? (SI-Drive key dimension actors, networks, governance). If possible, please also assess the relation with the cross-cutting themes of SI-Drive.

2. What are recent national challenges of the policy field? What are national social innovation practice fields and projects and to which kind of challenge do they respond? Again this analysis can be focused on the regional level.

Here, we suggest proceeding in a two-step manner: first, selected practice fields which are relevant for social innovation should be discussed (e.g. "car sharing", "life-long-learning", "workplace innovation" etc.). When discussing the practice fields, please refer a) to the main principles of the practice field; b) institutional frames; c) the main actors, their roles and intentions; d) diverging interests or conflicts of actor groups.

Second, we should refer to selected social innovation projects of the practice fields and thereby illustrate the various micro-level activities of the practice field (for car-sharing, these might be distinctive local car-sharing projects, the expansion of UBER in European cities, car-pooling, etc.). (SI-Drive research focus 1 and 7).

After discussing research questions 3 and 4, please elaborate the distinctions of the national/regional governance structure of relevance to social innovation in a summarised way (this will facilitate cross-country comparison to be done by the work-package leaders).

The section should be followed by a comparative analysis of the national approaches.

- to be done by work package lead and co-lead:

3. How do the challenges and the approaches of tackling them and the role of social innovation practice fields and projects differ across the countries/ European regions?

Please refer to differences and similarities of the different national approaches in terms of:

-system & structure,

-type of stakeholders and main actors

-modes of collaboration, new ways of solving social issues

-take up of social innovation and practice fields in this policy field; embeddedness/receptiveness towards social innovation approaches/philosophy (SI-Drive research focus 5, 6 and 7).

4. What can we learn regarding the relation between the context of social innovation and the nature of social innovation (drivers, barriers, scaling, stakeholders, bottom-up SI, policy-driven SI)? Are there indications qualifying the relation between social innovation and social change? (SI-Drive research focus 1).

The final thematic section of the report should contain a global outlook of the policy field.

To be done by work package lead and co-lead in cooperation with partners responsible for global, non-European regions/countries.

1. What are the <u>global</u> issues of social innovations in the policy field, also concerning differences between the world regions?

2. What are approaches to respond to global challenges (e.g. of the UN, World Bank, etc.)?

3. Which practice fields can be found at global level? What are their characteristics?

Please refer to the issues mentioned in the outline of the regional report, but with a policy field specific focus.

Structure of the state-of-the-art reports of the policy fields

No.	Chapter	Content	Pages
1	Introduction	Understanding and definition of the policy field, the policy fields' relevance to social innovation, aim of the report, structure of the report	2
2	European perspective	Please discuss research questions 1 and 2 throughout this chapter. You are free to add additional aspects.	7
3	National level approaches	**Please see the additional template to be send to partners with national responsibilities!** 3.1 Introduction to the section on national/regional level approaches 3.1.1-n please discuss research questions 3 and 4 by following the structure suggested in the additional template. 3.2 Comparative analysis of the national approaches, please discuss research questions 5 and 6	 1 5-7 pages per country/ European region 3 pages
4	Global perspective	please discuss research questions 7-9	4
5	Conclusions	To be structured according to four topics: Reference to this reports objectives and research question. Elaborate findings according to the SI-Drive key dimensions and corresponding research foci 1-9 (cp. literature review of WP 1). Discuss factors that are important when it comes to future development, implementation and recommendation of social innovations (foresight). What is important input according to the further development of theory, methodology, and mapping within SI-Drive?	7

Glossary

A "social innovation project" is a single and concrete implementation of a solution to respond to social demands, societal challenges or systemic change. E.g. Muhammed Yunus's Grameen Bank which lends micro-credits to poor farmers for improving their economic condition.
A "social innovation practice" is a general type of project. A "practice" expresses general characteristics common to different projects. E.g. Micro-credit systems. The emergence of a practice relies thus relies on diffusion, knowledge sharing and interpretation. Example: Micro-credit systems are a general practice that is implemented by many different projects around the globe. There is a shared understanding of what "micro-credit-systems" and know-how.
"Governance systems" can be defined according to five orientations developed by Stroker (1998: 18): „(1) Governance refers to a complex set of institutions and actors that are drawn from but also beyond government. (2) Governance recognizes the blurring of boundaries and responsibilities for tackling social and economic issues. (3) Governance identifies the power dependence involved in the relationships between institutions involved in collective action. (4) Governance is about autonomous self-governing networks of actors. (5) Governance recognizes the capacity to get things done which does not rest on the power of government to command or use its authority. It sees government as able to use new tools and techniques to steer and guide. Stroker, G. (1998): Governance as Theory. Five Orientations. UNESCO pp. 17-28. http://catedras.fsoc.uba.ar/rusailh/Unidad%201/Stoker%202002,%20Governance%20as%20theory,%20five%20propositions.pdf
The SI-DRIVE approach defines "social innovation" as a new combination or figuration of practices in areas of social action, prompted by certain actors or constellations of actors with the goal of better coping with needs and problems than is possible by using existing practices. An innovation is therefore social to the extent that it varies social action, and is socially accepted and diffused in society (be it throughout society, larger parts of it, or only in certain societal sub-areas). Depending on circumstances of social change, interests, policies and power, social ideas as well as successfully implemented SI may be transformed and ultimately institutionalised as regular social practice or made routine.
Cross-cutting Themes: ● social innovation and the relationship to ● social change and technology; ICT ● gender, equality, diversity (e.g. EU2020 targets) ● innovation networks and drivers at each stage of the social innovation cycle, cultures of innovation ● social entrepreneurship, networks, user involvement, demographic change, human resources, policy instruments ● human resources, knowledge, scientific research, financial resources, legal conditions , empowerment

Guideline for policy field specific research on the national level

Please discuss the following two questions according to the structure below (7 pages max!)

Questions 3-4 **to be done by the partners responsible for the countries mentioned in the DOW**. This can also be a <u>selective account</u> and not all of the mentioned countries need to be analyzed. We should follow a pragmatic approach that correlates to the expertise of partners involved in the policy field. A more detailed cross-country comparison of social innovations in the policy fields will be conducted during summer 2015 based on the data derived through the SI-Drive mapping.

It is the task of the work package leader to instruct partners (with national responsibilities) about the work to be done.

1. What is the governance structure of the policy field in the European country/countries you should analyse (cf. work package description in DOW)? NB! If adequate, this can also be a more abstracted analysis according to "Northern Europe", "Eastern Europe", with national level examples.

The national level governance structure/s of the policy field should be analysed. Please refer to relevant actors groups, their stakes, interests and alliances; the institutional frame including relevant regulations; drivers, barriers and conflicting elements. As in the case of the European level, analysis should refer to the governance structure as a whole in order to get an overview, but emphasise those *structures of clear relevance for social innovation*. Do different actor groups (public, private, civic) have different objectives and strategies to tackle the challenges? To what degree are they compatible/ conflicting, for example when new structures related to social innovation meet established ones? To what degree do the objectives and strategies integrate social innovations? What role do technological solutions play? To what degree are social and technological solutions related to each other? (SI-Drive key dimension actors, networks, governance).). If possible, please also assess the relation with the cross-cutting themes of SI-Drive.

2. What are recent national challenges of the policy field? What are national social innovation practice fields and projects and to which kind of challenge do they respond? Again this analysis can be focused on the regional level.

Here, we suggest proceeding in a two-step manner: first, selected practice fields which are relevant for social innovation should be discussed (e.g. "car sharing", "life-long-learning", "workplace innovation" etc.). When discussing the practice fields, please refer a) to the main principles of the practice field; b) institutional frames; c) the main actors, their roles and intentions; d) diverging interests or conflicts of actor groups.

Second, we should refer to selected social innovation projects of the practice fields and thereby illustrate the various micro-level activities of the practice field (for car-sharing, these might be distinctive local car-sharing projects, the expansion of UBER in European cities, car-pooling, etc.). (SI-Drive research focus 1 and 7).

After discussing research questions 3 and 4, please elaborate the distinctions of the national/regional governance structure of relevance to social innovation in a summarised way (this will facilitate cross-country comparison to be done by the work-package leaders).

Suggested structure:

1. Introduction to the policy field in region X

2. Recent challenges with relevance to SI and the policy field

3. What are the differences in governance structures across the countries of the region (This can also be a selective account. We should follow a pragmatic approach that correlates to the expertise of partners involved in the policy field.)

4. The nature of social innovation practice fields and projects

5. Conclusions

6.3 REGIONAL REPORT

SI-DRIVE
Social Innovation: Driving Force of Social Change

SOCIAL INNOVATION STRATEGIES - REGIONAL REPORT
D3.6

Status: July 2014

|	
Project acronym	SI-DRIVE
Project title	Social Innovation: Driving Force of Social Change
Grand Agreement number	612870
Coordinator	TUDO – Technische Universität Dortmund
Funding Scheme	Collaborative project; Large scale integration project
Due date of deliverable	10/2015
Actual submission date	XX
Start date of the project	January 1st 2014
Project duration	48 months
Work package	3 Global Mapping
Lead beneficiary for this deliverable	ZSI
Authors	XXX
Dissemniation level	Public

CONTENTS

1 GENERAL INTRODUCTION

This section should briefly set out the context to the report

The report summarises the overall, more general Social Innovation strategies in the different world regions. The report will summarise the key developments in the different world regions.

Therefore the different regional reports should be based as much as possible on the results of the policy field reports.

The structure of the report is very close related to the five key dimensions of SI-DRIVE (see figure below) and to the main research questions derived from the first theoretical framework development (deliverable D1.1).

The Five Key Dimensions of Social Innovation SI drive
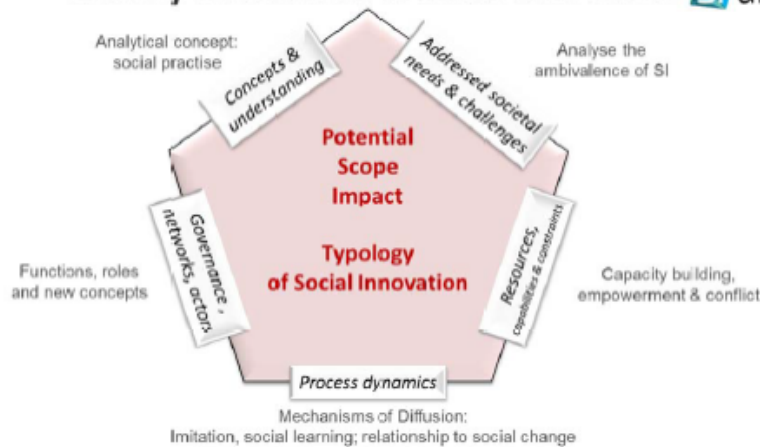
General research approach is to find out which (main, different) general strategies of Social Innovations could be found in the different world regions: policies, different approaches for initiation, implementation, diffusion of Social Innovation

The main research questions for the regional reports are also related to the five key dimensions:

a) Concepts and understanding: process of invention, diffusion and institutionalisation of new social practices in different areas of social action (incl. relationship to technological innovation and economic value creation)

Research Focus / Questions:

- Analyse the process of invention, diffusion and institutionalisation of new social practices in different areas of social action.

- Clarify the relationship to technological and business and management innovation.

b) Objectives and social demands, societal challenges and systemic change addressed: ambivalence of social innovation (i.e. social side effects, unforeseeable consequences, different perspectives), Social Innovation Assessment

2

Research Focus / Questions:

- Analyse the ambivalence of social innovation (i.e. social side effects, unforeseeable consequences, different perspectives).

- Are systematic practices of Social Innovation Assessment commonly used in the region? If so, please describe

- Additional Question: Do we need a Social Innovation Assessment?

c) Process dynamics: life cycles, from ideation and intentions to actual implementation and impact

Research Focus / Questions:

- Analyse the process dynamics (Idea − Practise − Social Practise − Institutionalisation) with a focus on the iterative processes involved (e.g. including from invention to diffusion, partial failure and reinvention, or hype-disappointment cycles).

- Analyse the social embeddedness of any innovation in a dense network of innovation streams.

- What are the (social) mechanisms that make social innovation spread into society (e.g. social networks, professionalization, online networks, etc.)?

d) Actors, networks and governance: inherent complexity; systemic character of SI, particular drivers, barriers and governance, innovative milieu, innovation streams, Drivers (**various** individual and collective (types of), **actors** with different roles and functions), social networks and gove*rnance (* actors constellation, cooperation and communication, governance structures: access to resources, strategic alliances, power, barriers and conflict handling.

Research Focus / Questions:

- What are the main components of the SI activities (networks, triple helix etc.) for a better understanding of Social Innovation?

- Are there new conceptual models that better represent actor constellations and roles in SI? (The quadruple helix is accepted, but might there also be other ones?)

- What are the specifics of modes of governance in social innovation processes as compared to other innovation processes?

- Generally, the question of barriers, power and conflict?

e) Resources, capabilities and constraints : *role* of different civil society actors, diffusion of social practices facilitating empowerment of citizens, enhancing innovation capacity (**empowerment and capacity building**), **resources and capabilities**, supporting infrastructures, role of technologies

Research Focus / Questions :

- How can we enhance the innovation capacity of society and empower citizens?

- How can policy support the generation and diffusion in the "social innovation cycle" through "living experiences" and change-oriented "capacity-building" etc.

- Related to policy issues: What are the particular distinctions of these areas/fields, especially related to the need for infrastructures supporting innovation?

3

2   REGIONAL OVERVIEW

2.1   THE REGION

2.1.1   Countries included – add map with other regions greyed out, no. countries etc
(See map below and the description of responsibilities in the field word description document.

High level region and then justify any sub-selection of countries to focus on.

SI Drive – Map of Global Regions

2.1.2   Key socio-demographic facts – total population
in general including economic, technological development

Policy field oriented (taken from the policy field reports, a kind of summary of the policy field reports)

3   SOCIAL INNOVATION IN REGION X

To be done by the responsible partners for every defined region! That means 1 chapter Europe with necessary regional differentiations (North, West, East, South) and 8 world region chapters. We should limit the number of pages, e.g. 10 pages max. per world region.

Have a look at the first List of SI-DRIVE Regional Delegates (responsibilities, covered countries, based on the UN Classification) (to be agreed upon) in the field work instructions.

3.1   SOCIAL NEEDS, CHALLENGES AND OPPORTUNITIES DRIVING SOCIAL INNOVATION

Please identify the main social needs, challenges and opportunities which are driving and enabling social innovation in the region

NB: Some opportunities will be positive – e.g. increasing access to the internet

3.2   CONCEPTS AND UNDERSTANDING OF SOCIAL INNOVATION

3.2.1   Concepts
How is social innovation most commonly understood within the region – in what contexts is it referred to etc.

3.2.2   Trends in social innovation
Key trends in social innovation

3.2.3   The relationship between technological innovation and social innovation

3.3   SOCIAL INNOVATION STRATEGIES AND PROCESSES

What are the dominant/ most important/ relevant / major SI strategies and **processes**?

3.3.1   Regional overview
These may be cover a whole region or sub-regions, but should not include individual national initiatives.

3.3.2   National level initiatives
This should include the most notable individual national initiatives/ approaches/ strategies. It is not expected that every country in a region will be covered. The significance of these initiatives as compared to bottom-up, grassroots-type of SI-strategies should be considered:

5

3.4 GOVERNANCE, NETWORKS AND ACTORS IN SOCIAL INNOVATION

Within this section, please outline the main actors and networks which drive social innovation in the region – in doing so, which governance structures could be found, please bear in mind all stages of the SI process and refer to the key questions on this issue outlined in the introduction:

Consider both recent and emerging trends.

- Inception; Prototyping, incubation etc.; scaling, accelerating etc.; dissemination and diffusion; link to systemic change; → from ideation and intentions to actual implementation and impact

3.4.1 Key players and institutions
Brief summary of leaders in social innovation

3.4.2 Governance structures and processes

3.4.3 The role of the public sector
More detail on the role the public sector plays in SI.

3.4.4 The role of the private sector
More detail on the role the private sector plays in SI.

3.4.5 The role of the third sector and civil society
More detail on the role the third sector and civil society play in SI.

3.4.6 The role of Social Innovation Networks
Summary of any regional networks and collaboratives and their role

3.5 RESOURCES, CAPABILITIES AND CONSTRAINTS

This section should cover the main factors – both internal (resources, capabilities and capacities etc.) and external (e.g. regulation) – which are enabling and constraining social innovation

3.5.1 Factors enabling social innovation

3.5.2 Factors constraining social innovation

3.6 THE IMPACT OF SOCIAL INNOVATION

What evidence is there that social innovation has led to social change (i.e. improved outcomes, change in social practices etc.)?

6

3.7   EMERGING TRENDS IN SOCIAL INNOVATION

This chapter should be related mainly to impact, the relation of SI to social change, different policy programmes

We are looking to identify those emerging shoots which look like they may become trends in the future that start to shape the direction of social innovation in the region – or new types of social innovation which are not common now but are growing in presence. This analysis should cover all aspects addressed in previous sections (needs/opportunities/challenges, concepts/understanding, strategies/processes, governance/networks, resources)

7

4 CONCLUSIONS

4.1 SOCIAL INNOVATION TODAY IN REGION X

4.2 THE FUTURE OF SOCIAL INNOVATION IN REGION X

8

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8 TABLES AND FIGURES

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