EUROPEAN PUBLIC & SOCIAL INNOVATION REVIEW

VOLUME 1, ISSUE 2

EUROPEAN PUBLIC & SOCIAL INNOVATION REVIEW
http://pub.sinnergiak.org/index.php/esir/index

Published in 2016 in San Sebastian (Basque Country)
by Sinnergiak Social Innovation
http://www.sinnergiak.org/

ISSN: 2529-9824

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ON THE IMPORTANCE OF POWER STRUGGLES IN THE DIFFUSION OF SOCIAL INNOVATIONS

The case of women suffrage in the Netherlands

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Abstract: Diffusion of social innovations has become a key theme in social innovation research. In this paper I argue that the importance of power relations and opposition against social innovations should receive a more central position in this line of research. Using detours to the related fields of Science and Technology Studies and Transition Studies, the significance of (shifting) power relations in the diffusion of innovations is underlined. Through a historical case study on the institutionalisation/diffusion of women's suffrage in the Netherlands (1883-1919) it is shown that power struggles and shifting power relations are also key for the successful diffusion of a social innovation. With this paper I aim to bring power and empowerment to the agenda of social innovation researchers.

Keywords: Social Innovation, Power, Opposition, Voting Rights, Women's Suffrage, Netherlands

Introduction

An important and emerging theme in innovation research concerns the topic of social innovation, as opposed to technological innovations. Social innovations are becoming more and more recognized as the locus of change towards a more sustainable economy, characterized by more sustainable social practices. One of the main challenges social innovations see themselves confronted with, concerns the issue of diffusion. Although it is not a completely overlooked theme, I will argue in this paper that the role of power relations and opposition as barriers against the diffusion of social innovations, should receive more attention in studies of social innovations. The goal of this paper is to – by means of a historical case study – illustrate the importance of power relations and empowerment for the successful diffusion of social innovations.

In recent years, many authors have engaged themselves with the topic of social innovation and the theoretical as well as practical difficulties of diffusion/ mainstreaming of these innovations (Howaldt et al., 2015; Howaldt et al., 2016; Santos et al., 2013). Howaldt et al. (2015), for instance, point at Tarde and his theories of diffusion through imitation. At the same time, researchers time have become engaged with innovators to see which problems they encounter, and to see how these can be overcome in practice (Hargreaves, 2011).

Building, often, on the works of Rogers (1962/1983), many innovation scholars tend to portray the diffusion of an innovation as an S-curve. The innovation starts with an invention that is slowly taken up by other actors, at some point the innovation gains momentum and spreads rapidly and eventually even the 'laggards' take up the innovation. This S-curve model was originally formulated for technical innovations, but taking a birds-eye perspective with hindsight, it will also fit to most social innovations.

In this linear representation, the focus of the analysis only lays with the users/ consumers who do, or do not, embrace the innovation. This linear and bi-polar view has been criticized; see for

instance Karnowski et al. (2011). Howaldt et al. (2015) stress Tarde's early twentieth century view on diffusion in which imitation (i.e. the uptake and further development of an innovation) not only refers to directly adopting the innovation. The diffusion process involves modification and re-invention of the original idea. Karnowski et al. (2011) also acknowledge the value of Tarde's view on imitation. In the development of their 'Mobile Phone Appropriation Model' (MPA) (first presented in Wirth et al., 2008), they show that adoption and diffusion of an innovation is not a binary Yes/No decision from the side of the consumer/adopter, but involves more complex decision making.

Even though these views allow for some more freedom for the adopters of an innovation and leave room to thinker with the invention so it fits the needs of the adopter, they still focus predominantly on the users/consumers accepting the innovation. Diffusion does not only depend on the uptake of an innovation by increasingly large shares of the population, but also on those forces trying to prevent its spread. Building on literature from related fields, supplemented by a historical case study, I will lay out some groundworks for a research strand on the diffusion of social innovation and its opposition. I argue that, for a proper understanding of the spread of many (social) innovations, and especially for a proper understanding of the problems and barriers social innovations may encounter, we should not only look at the adopters of the innovation. Opposition, and dealing with this opposition, is an at least equally important factor in the diffusion of social innovations.

Although social innovation scholars have recently started to acknowledge the importance of opposition and barriers (see for instance Howaldt et al., 2016), I build predominantly upon literature from the related academic disciplines of science and technology studies and transition studies to elucidate the importance of dealing with opposition and power struggles. These fields of study tend to engage themselves with technological rather than social innovations, but even though some cautiousness is thus in place in translating their findings to social innovations, I will argue that the aspect of competing social groups is also important to understand the diffusion of social innovations. This will be underlined with a historical case study on the diffusion processes of a successful social innovation: the institutionalization of women's suffrage in the Netherlands (1883-1919).[1]

The paper starts by introducing the dispersed topic of social innovations. Subsequently it will make a little detour to related innovation research fields and their appreciation of the importance of power struggles. Next, the diffusion (or institutionalization) of women's suffrage in the Netherlands will be addressed. This section presents a very short history of a topic that has filled complete books, but it will illuminate how the Dutch women's right movement and the 'initiator' of female voting in the Netherlands – Aletta Jacobs – have had to fight for their cause. The paper aims to contribute to the academic debate on social innovation and diffusion; it therefore concludes with a plea to include power relations more prominently in social innovation research.

Social innovations

Social innovations are becoming ever more present in academic and societal/ political debates; especially with an eye on a transition towards sustainability. Social innovations hold great promises as they aim at social change for the better. However, despite the growing momentum, a clear understanding of what social innovation is (and what it is not), is still lacking. The field of social innovation research is still in search of identity, as can be seen by the work of Pelka and Terstriep (2016), who found no less than 17 projects which were funded under FP7 that are still running, or ended less than 12 month ago, and that aim at the mapping of social innovations in Europe and beyond. This illustrates the popularity and relevance of social innovation, but at the same time it shows there is little consensus on what social innovations are and how they can be mapped. Rüede and Lurtz (2012) analysed over 300 publications on social innovation and determined that these could be split up in at least seven different categories, all with a different understanding of the concept and all with a different focus. Without delving into all different categories, the current approach should be seen in line with the category '*To change social practices and/or structures'*; the typical guiding question in this category, following Rüede and Lurtz, is: 'What

[1] To be able to understand the true power of opposition, future studies should overcome the asymmetry caused by the selection of successful innovations, by also studying failed social innovations. As the aim of the current study is also to show how innovators have dealt with the opposition they faced, it was chosen to focus on a successful example.

can we say about changes in how people interact among each other?'

The guiding definition of this kind of social innovations is provided by Howaldt and colleagues. They define social innovation as an intentional new combination or configuration of social practices in certain areas of social action, prompted by certain actors or constellations of actors with the ultimate goal of coping better with needs and problems than is possible by using existing practices (Howaldt and Schwarz, 2010, p. 89).

This definition is still broad. For the current study, one aspect therefore still needs to be specified. Social innovations may refer to changing practices of individuals (i.e. consumption behaviour) or changing social context (i.e. societal change). An example of a social innovation aiming at changing consumer behaviour is, for instance, the German *Stromspar-check*, which helps less fortunate families to save energy and therewith money.[2] The goal in this case is to change the practice of the individual (household), while at the same time contributing to societal challenges of climate change. An example of a social innovation aiming at societal change is the green movement that emerged in the 1960s. This movement, besides raising awareness among individuals, especially aimed at banning unsustainable practices such as the use of toxic weed killers or nuclear energy. It may be clear that there is a wide range of social innovations that fall in between these two extremes, but what is important to note is that social innovations may be directed at individual behaviour or at larger societal changes.

This has important implications for the diffusion of a social innovation. For the first type of innovation, diffusion is mainly dependent on individuals' choices to do, or do not, change their behaviour. Therefore, the spread of this type of social innovation depends above all on consumer behaviour. This is difficult to influence; although interesting work is being done for instance in the fields of (environmental) psychology (Clayton et al., 2016) and behavioural economics (Dogan et al., 2014).

Women's suffrage is an example of the second type of social innovation. It is an intentional new configuration of practices in the area of elections, prompted in the Netherlands by Aletta Jacobs and her fellow feminists, to better cope with the issue of gender inequality. In this case, individual actors are still important as ambassadors of the innovation, however, the diffusion does not depend on whether individuals are willing to change their daily practices, but on changing societal practices or institutions and therefore play at a higher (i.e. more abstract) level. These changing societal practices can be expected to raise opposition among incumbent actors who see their position threatened by the new social practice. Therefore, in order to analyse the diffusion of this kind of innovation, opposition and power relations should be studied.

Innovation research and the importance of power and opposition

The academic field of innovation research is large and encompasses various academic domains, e.g. the systems of innovation approach (cf. Freeman, 1995) or the triple helix approach (cf. Leydesdorff, 2006). Studies in these fields tend to focus on technological, rather than social, innovations. The diffusion of social innovations is distinctly different from technological innovations because social innovations are immaterial and can generally not be patented and are usually not commercial. Nevertheless, insights from the diffusion of technological innovations can contribute important lessons for the study of social innovations. Therefore, a sidestep is made to the fields of science and technology studies (STS) and transition studies as these two strands of innovation research lay particular emphasis on the role of human actors, their interactions, and power relations.

As the field of transition studies partly builds upon science and technology studies, it seems natural to start with the elder discipline. The field of STS emerged in the 1980s with the works in particular of Pinch and Bijker (1984) and Bijker et al. (1987). In his early, and by now almost classic, paper 'The electrification of America', Thomas P. Hughes (1979) discussed the notion of system builders. Hughes described in detail how the diffusion of electricity in the United States was not only the result of an (technological) invention that needed to be adopted by consumers, but of active and effective system building. He focused on three main characters, with different roles, that were the dominant system builders and that made the diffusion possible, each by addressing a different hurdle (Edison as 'Inventor-Entrepreneur', Insull as 'Manager-Entrepreneur' and Mitchell as 'Financier-Entrepreneur'). Although Hughes' analysis was still somewhat linear, he demonstrated the importance of social actors and their interactions for the diffusion of an innovation.

Pinch and Bijker (1984) focused less on the importance of dominant individuals, but on relevant social groups. They criticized the linear view on

[2] http://www.stromspar-check.de/.

technological innovations resulting from hindsight analysis and showed that the development of artefacts depends on social groups that attach a meaning to the artefact. They illustrated that, for instance for the example of the bicycle, various designs existed in the late nineteenth century. Rather than examining only why the safety bicycle – the design as we know it today – proved successful, they also asked why other alternatives 'died' out, i.e. what 'problems' they encountered. "In deciding which problems are relevant, a crucial role is played by the social groups concerned with the artefact, and by the meanings which those groups give to the artefact: a problem is only defined as such, when there is a social group for which it constitutes a 'problem'" (Pinch and Bijker, 1984, p. 414). Relevant social groups comprise of organized or unorganized groups of individuals that share a certain understanding of the artefact in question. These not only include users/consumers, but also groups that do not use the actual artefact, but still share a common understanding of the artefact. For the case of the bicycle this for instance included the 'anti-cyclists', who actively opposed cycling. It would reach too far to reiterate Pinch and Bijker's history of the development of the low safety bike as we know it today (for a more elaborate description see also Bijker (1995)), but what is important to take along from the Social Construction of Technology, and STS literature in general, is that certain social groups often tend to favour different designs, or oppose certain products or services altogether. The eventual outcome, and thus the eventual diffusion of an innovation, is determined by power struggles and social construction and therefore does not only depend in the binary adoption vs. rejection of a new artefact.

The emphasis in STS thus lies with interactions among relevant individuals or social groups and with the struggles among these groups. STS scholars focus on the role of individuals and societal groups in the development of certain technologies. For social innovations, the role of the social groups may even be more important. As Pinch and Bijker's example of the emergence of the safety bicycle illustrates, it is not only about the adoption of the new technology by an ever larger share of society to make an innovation successful; the power struggles between the social groups is equally important in determining the adoption of a certain artefact. There were certain social groups, with relatively a lot of power, who were not in favour of the safety bike. These tried to oppose the introduction and diffusion of the innovation. The increasing (political) power asserted by women in this period – women favoured the low bicycles – coupled with technological innovations – the air tire – that convinced young men of the racing possibilities of the low bikes, eventually led to the general acceptance of the safety bicycle.

While STS by and large focusses more on changing technologies or artefacts, transition studies tend to focus on larger systemic changes. Transition studies build upon the work of Geels (e.g. 2002; 2004; 2005; 2011), who developed a theory on socio-technical change using a multi-level perspective (MLP). Geels has shown, in a plethora of case studies, how large systemic changes are inclined to follow a distinct pattern from niche innovation (or invention) to becoming mainstream by rivalling and eventually replacing the existing regime.

The basic premise of the MLP is that radically new innovations tend to happen outside the existing regime, which is comprised of the main actors that together build the socio-technical system around a certain product or service. These outside innovations can rival the existing regime. However, regime actors, which by definition are interconnected with each other and therefore build a relatively stable entity, will usually try to fight off this outside competition. Although, this has not always been sufficiently recognized in well-intended attempts to manage and support niche innovations, it is therefore import to be aware of the hostile environment these innovations face because they rival existing institutions, actors and practices. Initiatives aiming at the management of transitions through niches (i.e. strategic niche management) generally met limited success (Schot and Geels, 2008). What they oversaw – despite various criticisms (e.g. by Meadowcroft, 2011) – and what was actually already present in the original transitions literature, is politics and the opposition by the existing regime (Avelino & Wittmayer, 2015; Grin, 2010; see also Raven, 2012). Avelino (2011), Turnheim and Geels (2012), Hoffman (2013), Geels (2014), and Avelino and Wittmayer (2015), amongst others in the area of transition research therefore furthered the research on power relations and they emphasize the importance of power and politics again. In these recent works, the importance of power struggles and power relations between the different actors involved in the transition to sustainability are underlined.

The short excursions to the fields of STS and transition studies have illustrated how the diffusion of an innovation not only depends on its adoption by users or consumers (regardless whether with or without mutation in the imitation/adoption phase), but also on active opposition by relevant social groups. It will be shown in the next sections that

these lessons from STS and transition studies can, and should, be transmitted to social innovation research. In the next section I will first address the diffusion of a historical social innovation to underpin the theoretical claims with a concrete example. The social innovation in question is the emergence and institutionalization of women's suffrage in the Netherlands. It will be argued that the diffusion of this social innovation, which emerged with the 'invention' of female voting by Aletta Jacobs in 1883, was determined by struggles among different and often opposing relevant social groups and actors. The diffusion not only relied on increasing shares of the population adopting the notion of voting rights for women, but also on a power struggle.

Women's voting rights in the Netherlands – a very short history

The most important actor in the development of female emancipation in the Netherlands is beyond any doubt Aletta Jacobs, who was one of the main social innovators with regards to the first wave of the women's rights movement. In this short history I rely above all on her memoires, published in 1924. This has the advantage that we can trace back the stumbling blocks and opposition experienced by the social innovator herself. An obvious downside is of course that this can lead to a biased picture. Her story is therefore triangulated with primary research and other secondary literature.

In 1871, Thorbecke, then in his third term as Minister-President of the Netherlands, granted permission to Aletta Jacobs to start with the study medicine at the University of Groningen; initially for just one year, but shortly before his death in 1872 Thorbecke arranged her permanent position as a student. Jacobs wrote in her memoires that, with the support of relatively influential friends such as dr. L. Ali Cohen, the state inspector of medicine in Groningen, her father supported her by writing the liberal Thorbecke to ask for permission to enter medical school (Jacobs, 1924). Strictly spoken it was Aletta's father who received the permission to let his daughter attend the university (Mulder and De Jong, 2002). Jacobs graduated as first female doctor in 1878 and successfully defended her dissertation in 1879.

Although other women had already started taking the exam to become apprentice in a pharmacy, Jacobs' insistence to start a proper study at a university paved the way for female students in the Netherlands. Jacobs was a pioneer in terms of female engagement with social issues in the Netherlands. Engaged especially with her female patients and the inequality she had also experienced in her own life, Jacobs more and more developed into a protagonist for the female rights movement. Although Jacobs was not the first to address the issue – John Stuart Mill, for instance engaged himself with the English debate that had started some years before, in his *The subjection of women* (Mill, 1869) – she was the first woman to actually register as voter in the Netherlands (De Wilde, 2007).[3]

In this period voting rights in the Netherlands were still restricted and based on income – or rather on the amount of tax paid.[4] With her job as GP, Jacobs earned reasonably well and, not being married, she paid enough tax to be legally entitled to vote, so she thought. In 1883 she tried to register as voter in her city Amsterdam. Her request was denied, because:

> "the addressee may base her claim on the law, but according to the spirit of the State institutions, voting rights are not granted to women. Even if one repeals to the law, it should be questioned whether women should be allowed the full pleasures of citizenship or civil rights. As far as civil rights are concerned women are, with the exception of their children, excluded from guardianship." (Letter by the Amsterdam city council quoted in Jacobs, 1924, pp. 94–95)[5]

Even though no legal restrictions prevented a smooth and quick adoption of the social innovation of equal voting rights for men and women, the powerful social group of elite male politicians blocked it. However, not only politicians objected the female voting rights, not one lawyer of the Court protested against the decision and various newspapers expressed their disapproval about Jacobs' request. The *Algemeen Handelsblad,* for instance, underlined the reasoning of the Court of Amsterdam. The newspaper asserted that Jacobs interpreted the law to her own advantage, but not in spirit of the law, and neither in spirit of womankind. It added that there was "such a wide area of work for women (…) that it is not necessary for women to also get involved in politics."[6] Jacobs took the case to the Dutch Supreme Court, but the Court ruled that only men were considered 'Dutch and resident'; if that were to include women, it

[3] Shortly after graduating, Jacobs spent some time in London where she got acquainted with the English debate (Jacobs, 1924).

[4] http://www.parlement.com/id/vhnnmt7ltkw9/historische_ontwikkeling_kiesstelsels_en.

[5] Freely translated by the author.

[6] *Algemeen Handelsblad*, 24 March 1883

would have been made explicit in the Constitution, so the Court ruled (Jacobs, 1924).

Nevertheless, the issue was also taken up in national politics. Parliamentarian Van Houten, the male feminist who had encouraged Jacobs to register as voter, proposed to make female voting rights explicit during the debates on the revision of the Constitution in 1884. He asserted that the head of a household should be eligible to vote and he saw no reason to restrict this when the head of the household is female.[7] The discussion on the revision of the Constitution that took place at the time could have offered possibilities for female voting rights. At the same time it caused potential pitfalls.

The debate was not simply one of suppressed women against the dominant male elite. Jacobs received support from men as well as opposition from women. One of the members of the Supreme Court – a personal contact of Jacobs – wrote her that the Court's ruling should not necessarily mean the end of things. He advised her to follow the same procedure and try to register again for the next elections, only this time supported by other women who would in theory be legally eligible to vote (i.e. those who paid tax) who would do the same in other municipalities. Jacobs favoured the idea, but was worried this could lead to a change in the Constitution so that it would be made explicit that only male inhabitants were allowed to vote; setting back the entire process. The number of women (theoretically) eligible to vote was limited, but Jacobs tried anyway. However, the disappointing reactions caused her to stop the effort; illustrating that even in the target group most directly affected by the social innovation, opposition existed (Jacobs, 1924). The new Constitution of 1887 cleared the ambiguity on suffrage; it declared that women were not allowed to vote.[8]

The new Constitution closed the door that had until then stood ajar. However, in 1893 seven female board members of the *Vrije Vrouwenbeweging* (Free Women's Movement) decided to establish an organization with the goal to work for female suffrage again. Jacobs was invited to join. At first she rejected a leading position (also because of personal reasons), but in 1902 she became the president of the organization. Jacobs and the organization put a lot of effort in raising awareness through contributions in newspapers and public talks (Jacobs, 1924). Although it is impossible to derive real quantitative conclusions from *www.delpher.nl* (database with digitized historical documents) a quick search for the key words 'vrije vrouwenvereeeniging' results in 583 hits for the period 1890-1899 and 453 hits for the period 1900-1909 in newspapers; 'vrouwenkiesrecht' (women's suffrage) resulted in 1260 and 7778 hits in these decennia.[9] This illustrates the success of the movement to raise public awareness and bring the topic on the national agenda.

In 1905 a new opportunity emerged. The national elections were won by the political left, and although the formation of the government proved difficult and a minority government was eventually put in place, steps were taken to revise the Constitution; especially the article on voting rights was high on the agenda. The *Liberal Union* proposed to make article 80 on voting right blank, leaving it to the regular law to specify who has voting rights. Although the Union was not ready for voting rights for women at that time, it would make future change easier as it wouldn't require a change of the Constitution (Oud and Bosmans, 1997). The organization for female suffrage formulated its own demanded version of article 80. It was presented to Queen Wilhelmina and Rink, Minister of the Interior; exemplifying the active lobbying undertaken by Jacobs and her fellow activists. The movement was still relatively small at this time, but by making use of the opposition, and the possibilities it offered for a rebuttal, the organization could convince more and more people to take their side; even among traditionally conservative social groups such as the Catholics (Jacobs, 1924).

Due to organizational difficulties (centred around the budget for the Ministry of War), the left-wing minority government fell and the right-wing conservative Heemskerk formed a new minority government in 1908 (Oud and Bosmans, 1997). The elections of 1909 were another set-back for the female voting rights movement as the cabinet led by Heemskerk that had been in place since February 1908 managed to reach a majority in parliament. Under the conservative Christian cabinet, possibilities for real change were small. Therefore the focus of the Free Women's Movement was redirected at raising awareness and attracting new members (Jacobs, 1924). By the time of the next elections in 1913, the left-wing parties had the issue of voting rights for *all* men, and the

[7] Voorstel van wet van den heer mr. S. Van Houten, tot herziening der Grondwet: Memorie van toelichting (1884), http://resolver.kb.nl/resolve?urn=sgd%3Ampeg21%3A18831884%3A0001687.

[8] See http://www.parlement.com/id/vh8lnhrqszxn/grondwetherzieningen_1815_heden.

[9] Search executed August 19th, 2016.

removal of prohibition for women, high on their agendas (cf. Van der Horst, 2013). Jacobs wanted more, but was also convinced that the anti-feministic government led by Heemskerk first had to be replaced first. The cabinet fell indeed, and the new cabinet put the revision of the Constitution back on the agenda.

The new Minister-President Cort van der Linden had expressed his will to govern based on the wishes of the people. So even though he had expressed himself to be against female voting rights before, the Free Women's Movement set up a petition and could hand over more than 165,000 autographs in their support, until the War stopped their further efforts. Cort van der Linden had also shown some hesitation regarding the implementation of female suffrage as its effects were unknown. Governments of countries that had already adopted women's suffrage were therefore requested by the Free Women's Movement to explain their experiences to the Dutch government (Jacobs, 1924).

During the War, the female rights movement kept protesting and lobbying. In the revised Constitution of 1917 a moderate success could be celebrated. Women were granted passive voting rights, which meant they were still not allowed to vote, but were eligible to be voted into parliament. Various parties presented female candidates. Although Jacobs writes that it was made sure they could not effectively be chosen she was actually placed high on the list of her own party *VDB* (*Vrijzinnig Democratische Bond* – predecessor of the current labour party); the reason she wasn't elected was that other men were chosen with preference votes.[10] One woman was indeed elected. A new law proposal to grant voting rights to woman was handed in in 1918 by VDN-parliamentarian Marchant. Supported by developments in other countries, the female rights movement had taken their protests to the streets. Fearing more social unrest, the Christian right-wing government of Ruijs de Beerenbrouck, who was actually against the proposed law, eventually gave in.[11] Thirty-six years after Aletta Jacobs had spurred the debate in the Netherlands with her attempt to register as a voter, the social innovation finally met success with the institutionalization of equal voting rights for men and women.

[10] http://www.parlement.com/id/vi6da99jvsh5/90_jaar_vrouwenkiesrecht

[11] Idem.

Power and opposition in social innovation (research)

Judging with hindsight and from some distance, the adoption or diffusion process of an innovation may resemble a linear S-curve. Zooming in on the actual diffusion process it becomes clear that the implementation usually does not happen that smoothly. With this paper I aim to bring the issue of deliberate opposition by certain relevant social groups against social innovations on the agenda of social innovation research. As the detours to the fields of STS and transition studies have shown, (technological) innovations often met, and meet, opposition on their way to diffusion/mainstreaming and the example of suffrage for women in the Netherlands illustrates that this is no different for social innovations.

An innovation often – though not always – challenges an existing regime or existing institutionalized system. The innovation may have advantages to many, and may therefore address social needs present in parts of society, but to others – often a fairly powerful elite – it will be disadvantageous. Schumpeter (1943/1994) already referred to this as the process of creative destruction necessary for the advancement of innovation. For the diffusion of social innovation the 'pain' from creative destruction can be equally severe.

In a paper presented at the *International Sustainability Transitions Conference 2016* Hölsgens et al. (2016) make clear that not all social innovations actually rival an existing regime. In other words, for certain innovations the power struggle may be more central than for others. Many social innovations aim less at large societal changes of the kind of the voting rights addressed in this paper, but more on changing practices of use. In these cases, the most important opposition may not come from vested interests and opposing actors, but from the difficulty of changing individual practices. Nevertheless, also these kinds of social innovations have to deal with a certain kind of opposition.

The topic of opposition and resistance should therefore receive a more central position in social innovation research. The EU-funded research project *SI-DRIVE* identified five key dimensions for the review and mapping of social innovations. One of these, under the overall heading 'Resources – capabilities and constraints' also touches upon the issue of empowerment and conflict (Howaldt et al., 2016). The barriers addressed in this report – based on the mapping of over 1000 social innovations – vary greatly. Political opposition and cultural

barriers are listed among those factors hindering the diffusion of these innovations.

The case of the introduction of female voting rights in the Netherlands has shown that the social invention – although it could be argued this was an imitation of the invention made abroad – by Aletta Jacobs had to overcome a lot of opposition on its way to successful institutionalization. Both support and opposition often came from unexpected sides. Through awareness raising via newspaper contributions, public talks and rebuttals against opponents, Jacobs and her fellow feminists slowly managed to win larger and larger parts of society for their cause. Opposition remained until the end. Enhanced by the wider societal unrest resulting from the First World War, the louder voice of the women's movement, which by now had taken their campaign to the streets and was backed by international momentum, caused the right-wing, Christian, government lead by Ruijs de Beerenbrouck eventually to give in.

With hindsight, the diffusion of this social innovation may seem to have followed an S-curve; starting from Jacobs' first initiative with slowly growing support until the point where a tipping point was reached and the government gave in and the innovation became institutionalized. However, this view does not do justice to the actual barriers and opposition in the implementation phase. Although awareness raising and building up momentum was an important part of the strategy of the women's movement, dealing with the opposition it faced was equally important. Actively engaging in the discussion with opponents and refuting and combatting their arguments were crucial to convince more and more men and women of the need for equal (voting) rights for all.

In this process, Aletta Jacobs was a very important central actor with good connections, not only to her peers, but also to those with power. Having successfully studied at a university, and working as a doctor, Jacobs enjoyed a certain status and she had a wide network including influential individuals. After losing her case at the Supreme Court, one of the judges, who happened to be a personal contact, encouraged her to continue. Even though this road proved a dead-end, it is illustrative of the fact that Jacobs was well connected also among the more powerful elite.

Scholars analysing the diffusion of social innovations, both from a theoretical as well as an empirical perspective, should acknowledge the importance of power imbalances. They should not only ask how can the diffusion of an innovation look, and how can it be strengthened, but also ask why is the innovation hampered? From a theoretical angle the power relations between innovators and other relevant social group deserve more attention. This line of research should be build up upon a theoretical understanding of empowerment and power relations. Subsequently it should than ask how social innovations can be empowered: which empowerment strategies exist? How can the important system builders or relevant social groups be identified? And how can these more powerful groups or individuals be convinced to support the social innovation? The work by Hoffman (2013) and Avelino and Wittmayer (2015) provides an excellent starting point for this line of research to identify power relations among relevant actors. However, the relevant social groups, and therewith the relevant power relations, for social innovations differ from those of (socio-)technological systems. More (theoretical) knowledge of how they differ is still required, but it can be stated that as social innovations aim at societal changes rather than technological changes and that therefore both the innovators and those affected by the innovation differ. Socio-technical transitions tend to impact large market players that provide the main product or service in the relevant regime. Social innovations, on the other hand may also target certain political or cultural institutions and therefore have to deal with a completely different kind of opposition.

Parallel to enhancing the theoretical understandings of power relations in social innovations, empirical studies (historical and contemporary) are required to understand how shifting power relations contribute to the diffusion of innovations in practice. I therefore call upon empirical studies of a pragmatic nature, searching for the actors and actor groups relevant to the case at hand, and for the subsequent analysis of the power relations among these relevant actors. Both theoretical and empirical studies of power relations in social innovations are therefore needed in order to better understand this, for a successful implementation of a social innovation, crucial question.

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ORGANIZATIONAL INNOVATIONS IN THE PUBLIC SCIENCE SECTOR

An International Comparison of Cooperative Research Programs

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Abstract: This research is about the transformation of the organization of R&D activities in the public sector. We conceptualize such changes as intentional organizational innovations aimed to foster the collaboration between science and industry, improving the flexibility of the organizational model and strengthen the connection between research and society. We focus on the case of innovative public programs for cooperative research around the world. Through a brief review of the literature, we discuss a typology that has been proposed for classifying cooperative research programs and organizations based on two dimensions: institutional embeddedness and firm participation. We test the validity of such typology through an international comparison of policies and programs including countries from Asia, Europe, North America and Oceania. Our findings show that, despite many cross-countries differences, there are also some common trends that can be partially captured by the proposed typology. Other implications for studying organizational innovations in public research are discussed.

Keywords: Legitimation of Science, Open Innovation, Public Policy, Sociology of Innovation, Typology.

1. Introduction

The concept of innovation is not fraught exclusively with new technologies, products, or services. Recent studies pay more attention to social, institutional, or organizational features of innovation, showing the existence of "hidden" processes not so easy to see in the economic and social life (Castro Spila et al., 2016). Although such hidden processes usually are not captured by official statistics, they encompass a diverse and relevant social phenomenon. Good examples of such "hidden innovations" are teleworking, new collaboration-based services (crowdfunding, coworking, timebanking, flat sharing, etc.), or the emergence of hybrid political actors between traditional parties and social movements.

Our research focus on the diffusion on new organizational models in the public science and research sector. This is an interesting field for understanding institutional and organizational innovation processes. Such innovations emerge thanks to public programs aimed to foster an organizational change in researchers' workplace through cross-sector collaboration with other institutions such industries and firms. Usually such programs imply the creation of new collaborative arrangements, such as the new research centers or the transformation of existing ones. However, we still need a better understanding about these organizational innovations and related public policies. There is a lack of studies comparing different experiences across the world (Turpin and Fernández-Esquinas, 2011; Lal and Boardman, 2013).

Our aim is to compare the most relevant policies that have been undertaken to create and fund new organizational models for public research based on collaborative purposes and cross-sector institutional participation. The article is structured in the following way. After a brief discussion about the concept of organizational innovation (Section 2), Section 3 describe the organizational change experienced by public research sector, as well as the main forces underlying such change. Section 4

introduces the case of cooperative research programs as an example of organizational innovation in public research. Then, Section 5 shows the main findings of our comparative cross-country documentary review of cooperative research programs. Finally, Section 6 discusses the relevance of such findings for the debate about organizational innovation processes in the public research sector.

2. On Social, Institutional, and Organizational Innovations

From a sociological standpoint, the concept of innovation can have different meanings (Hill, 2010; Fernandez Esquinas, 2012; Menendez Viso, 2016). "Innovation" means the generation or adoption of "something new", implying an improvement. If there is no improvement, it is a change, but not an innovation. If we talk about the "innovation process" we can refer to different processes: the generation of something new, or its diffusion. In addition, there are several types of innovation, depending on the object. For instance, we can talk about a technological innovation to refer to the invention or adoption of a new technology (a machine, an algorithm, a tool, etc.); about an economic innovation to refer to improvements generating positive monetary or competitive benefits. Among these, we differentiate between product innovations (i.e. new tangible goods) or process innovation (i.e. improved services). Depending on the scope or the impact of the innovation, we talk about incremental or radical innovations, too.

Another important difference is about the collective or social nature of innovation (Menendez Viso, 2016). In this sense, we can differentiate between social, institutional, or organizational innovations. First refers to such innovative programs, actions or reforms with a positive effect on the political system or the community (i.e. participatory democracy, cooperative economy). By contrast, institutional innovations can have a double mean: a "new type of institution", or "a new form of organizing an already existing institution", closer to social innovation. Here we use the term "institution" consistently with the sociological standpoint: an ideal or symbolic referent for a real organization, or the symbolic category in which an organization is embedded (Portes, 2006).

Organizational innovations should not be confused with organizational change. The former implies an improvement, not just a change. There are at least two meanings for the term "organizational innovation" (Hage, 1999; Lam, 2005). The first one is about "adopting a new method of organizing work with an already existing organization", or the capability of an organization to adopt or produce innovations, implying greater creativity, adaptability, or resilience. By contrast, the second meaning of organizational innovation is about "a new type of organization or organizational model". Despite its similarity with the meaning of institutional innovation, they are not the same: when some organizational innovations encompass a new population of organizations and they institutionalize their presence, at such point we could talk of an institutional innovation, but not before. In this study, we use the second meaning of organizational innovation: the creation or diffusion of new organizational models that are socially perceived as improvements, and that can progressively become radical ruptures.

3. Organizational Change in R&D Systems

Globally, knowledge and technology are acquiring an increasing relevance within human societies. In the so-called "Knowledge Society", scientific and technological knowledge encompasses an essential resource for progressing. Science as an institution has a high reputation and a privileged position within the Knowledge Society (Böhme and Stehr, 1986; Nowotny et al., 2001). Such recognition is mainly due the practical implications of scientific discoveries and technological innovations. There are no doubts that, in recent history, science and technology radically transformed several aspects of social and political life, although recently we posed greater attention to economic impacts.

A good example of such role for Science is given by new information technologies as they caused a second industry revolution that deeply transformed production systems and corporate structures. In the contemporary economy, information technology-based innovations decentralized and multiplied production workplaces, increased global connections, and minimized transaction times. In sum, they fostered a corporate organization based on information and continuous change (Castells, 2010: Ch. 3). In addition, new information technologies encompass a good example for demonstrating that technological innovation deeply transformed our lifestyle, culture, and behavior.

Change in economic and social organization due to technological innovations fostered changes in knowledge production too. New forms of producing knowledge are needed to provide a better

adaptation to the use of such knowledge within the new economy and society. The diffusion of the scientific paradigm within firms and other social groups (traditionally external to academic institutions) facilitated that such actors undertook their strategies for producing scientific knowledge and, so, the overall level of such knowledge available at the societal level. Scholars usually refer to such transformation as the transition from a "Mode 1" to a "Mode 2" of scientific knowledge production (Gibbons et al., 1994; Nowotny et al., 2001). Nowadays, we can affirm that both modes coexist although they do with a different intensity: Mode 2 is currently prevailing, after decades of predominance of academic science (Mode 1).

This viewpoint has a cultural and a structural implication: both are related with the organizational dynamics of science. First implication is characterized by sociologist Bruno Latour's definition of transition from a "science culture" toward a "research culture": the former refers to a culture based on truth, trustworthiness and replicable demonstration, while the latter is related with an activity plagued by risk, uncertainty, and curiosity (Latour, 1998). Such transition would imply the need for new norms and values to evaluate the activities of scientific organizations. Such uncertainty comes from the characteristics of the "application context" and can be resumed in the following way (Gibbons et al., 1994:6):

- Constant reformulation of organizational structures
- Multiplication of the settings for knowledge production
- Increase of connections between scientific agents
- Increasing separation between specializations, despite their continuous reciprocal recombination through transdisciplinary activities.

In other words: within Mode 2, organizations become more flexible, while the structure of informal relationships between scientific actors becomes the most fixed part thanks to its continuous restructuration.

Besides the Mode 2 paradigm of knowledge production, other frameworks have been proposed to explain recent changes in scientific organizations (Hessels and van Lente, 2008). For instance, philosophy of science proposed several concepts for labelling the new forms of knowledge production, like "strategic research", "post-normal science", or "post-academic science". All these concepts indicate a transformation in scientific practices and the role of science in society, implying greater dependence from the context, collectivization of tasks and collaboration in science and technology production.

A proof of such transformation in scientific activity is the increase of technology-based industries that reduced the traditional boundary between academic institutions (i.e. the University) and other types of organizations (i.e. R&D intensive industries). Such process facilitated the emergence of new organizational forms for research that are more flexible and based on learning processes for increasing human capital, within universities too (Jacob and Hellström, 2003). Examples of such type of organizations can be industrial R&D partnerships, inter-firm networks, or think-tanks and similar research institutes (Nowotny et al., 2001: 15-16).

4. The Case of Cooperative Research Programs

The increasing relevance of science-industry collaborative relationships often implied building new arrangements for facilitating interactions between institutional domains that traditionally have been separated. These innovative initiatives are very different from traditional short-term forms of university-industry collaboration that do not imply creating new infrastructures, such as contract research, student mobility programs, or consulting services that faculties provide to firms. By contrast, public research sector launched new arrangements for science-industry collaboration such as science and technology parks, technology transfer offices, company incubators, university spin-offs, and mixed or collaborative research centers (Jacob et al., 2000; Etzkowitz, 2010).

The last model (mixed or collaborative research centers) is particularly interesting for several reasons. First, such centers are oriented toward activities that are potentially relevant for industry (at least at medium-long range); at the same time, they maintain close relationships with firms and other industrial partners (Ponomariov and Boardman, 2012). The interest toward such organizations showed by governments, innovation agencies, national scientific councils, or industry association have been increasing, consistently with the availability of funds and resources. The strategic role that such structures are acquiring in some innovation systems sometimes caused a reconsideration of their nature: not just science-industry knowledge transfer channels, but also R&D agents stimulating new research and innovation activities.

The diffusion of cooperative research programs and organizations within national science, technology and innovation systems is a quite recent phenomenon. In spite that we can find pioneering experiences in the U.S. during the 30s (Baba, 1988), the most relevant and long-standing initiatives started during the 80s and the 90s in some English-speaking countries. More recently, several European countries, such as Austria, Belgium, Germany, Ireland, Norway, or Sweden, as well as other countries from other parts of the world, like Asia or Southern America, adopted cooperative research models (PREST, 2002; Arnold et al., 2004; 2010; Turpin and Fernandez-Esquinas, 2011; Lal and Boardman, 2013).

Our research deals with such programs oriented toward building and consolidating organizations that (Gray et al., 2013)

- are quite stable and easy to identify within innovation systems
- are aimed by orienting their R&D toward industry as well as public interest
- try to facilitate interactions between science, industry, and other sectors

To do so, such organizations collaborate with several types of institutional actors and they have organizational structures different from traditional institutional domains, such as the public bureaucracy, the academic research organization, or the for-profit company model.

This general definition should be useful for identifying and describing empirical cases. To show its usefulness, we should look at the variation between types of centers. Classifying different programs and experiences for cooperative research and public research institutes recently attracted the interest of scholars because it is a kind of previous step for formulating hypotheses about the functioning of such organizations (Bozeman and Boardman, 2004; Perkmann and Walsh, 2007). Such problem became relevant because of the spreading of cooperative research models external to the context of pioneering English-speaking countries (Australia, Canada, the U.S.), as well as the use of such models of strategic settings for scholar research (Bozeman, 2013; Lal and Boardman, 2013).

The most known (and probably the only) effort to build a typology of cooperative research programs and organizations with the aims of international generalization was recently made by a team of U.S. scholars specialized in such matter (Gray et al., 2013). The typology is defined starting from the professional experience of the authors as evaluators of public programs and an extensive review of bibliography, employing the contributions provided by Bozeman and Boardman (2003) from the U.S., Carayol (2003) from Europe, and Teirlinck and Spithoven (2012) from Belgium. According to Gray et al. (2013), there are at least two relevant dimensions for classifying cooperative research organizations (Table 1):

1. The first dimension is the institutional base of the organization, distinguishing between centers embedded in universities, and centers embedded in governmental or other public structures.
2. The second dimension refers to firm participation, distinguishing between centers participated by only one firm (bilateral relationship, or partnership) and centers that collaborate with two or more firms (consortium, or network)

Crossing these two dimensions we obtain four ideal-types of research centers (Table 1). Such types would show differences according to their basic features as cooperative research organizations: formalization, R&D, and collaboration. For instance, "university-industry consortiums" should exhibit less formal but more decentralized and complex structures; they should specialize in basic research activities, produce generic knowledge, provide benefits in terms of human and social capital, collaborate with big companies, and adopt long-range planning strategies. By contrast, "public-private partnerships" should exhibit more formal and centralized structures (although less complex), collaborate with a small or medium enterprise (SMEs), and be oriented toward the short-term technology development and commercialization.

Table 1 – General Typology of Cooperative Research Arrangements

TYPE OF ARRANGEMENT	**Dimension 2: Industry Participation**		
	Network		**Bilateral**
Dimension 1: Institutional Base	**Public (Governmental, Third Sector, etc.)**	Public-Private Consortium	Public-Private Partnership
	University (both Public and Private)	University-Industry Consortium	University-Industry Partnership

Source: Gray et al. (2013:17)

5. An International Comparison of Cooperative Research Policies and Program

In this Section, we materialize the trends we specified in the previous section, showing relevant examples of organizational innovation found in several countries. We consider different geographical areas, like North America, Asia, and Europe, contrasting similarities and differences between their policies and programs. Among European countries, we give a special focus to the case of Spain. Our review is not exhaustive, but just an illustration of the existing types of experience. We reviewed documents proceeding from different sources, like public science, technology and innovation plans, evaluation reports, the content of institutional webpages, and scholar bibliography. Details about our methodology and the features of each national case we studied can be found in *anonymized* (2016: Ch. 1; Ch. 3).

5.1. Identification and Description of the Programs

Comparing policies from different countries we observed how the heterogeneity existing across the aims and the structures of cooperative research programs reflects a strong diversity in terms of geographical and institutional contexts (Lal and Boardman, 2013). Despite such heterogeneity, we also found converging aims and strategies, as comparative studies about science-industry collaboration policies already highlighted (Turpin and Fernandez-Esquinas, 2011). Table 2 resumes the findings of our review that we discuss in the next paragraphs.

First, we observe that only the U.S. exhibits a high diversity of programs; many of them are long-standing policies with a large scope that influenced the models adopted by other countries. Other long-standing experiences are found in Canada and Australia. Asia-Pacific Regions, such as South Korea and Japan, show some pioneering experiences, although if it is difficult to establish if their recent magnitude and level of development are like the case of English-speaking countries. Empirical evidence shows that such new organizational forms are something relatively new in their innovation system traditional institutions. It seems obvious that both the European Union and China (and Hong Kong) are going to emulate -in some way- the models of English-speaking countries. In this sense the Spanish case is paradigmatic: a several policies with a small scope but with very different aims and structures.

Second, we found similarities in policy strategies, like the relevance of the central (i.e. federal) government, the reciprocal search for collaboration from universities and big companies, creating new virtual infrastructures like networks or physical arrangements like institutes. In all these cases, we observe that the initiative is usually taken by central governments through big funding programs, with some exceptions regarding autonomous initiatives from more "entrepreneurial" universities (i.e. the U.S.) or regional governments (i.e. Spain). By contrast, initiatives from public research institutes and SMEs are less frequent.

Third, we are not sure about the existence of general trends facilitating a stronger participation of SMEs due to the high diversity of participation forms. Many research centers created through these programs is oriented toward excellent basic research, or toward applied research with potential implications for solving economic or social problems. However, there are few programs specifically oriented toward technological developments and innovation services, excepting the U.S. and some European country. Neither is easy determining the impact of the programs, although if in certain countries like Australia or the U.S. payed more attention to this issue.

Fourth, funding policies usually employed public calls where participating institutions and companies must compete. This is essentially different to traditional government technology policies, based on non-competitive public subsidies or tax-free incentives. In addition, the structures created by cooperative research programs usually have an established duration and they are accountable. Therefore, strategic planning of evaluation is a key component of their functioning, although if in many cases governmental investments have a strategic aim, like producing outcomes that firms can exploit as soon as possible.

Fifth (and last), we highlight that we are talking about organizational that are different from public bureaucracies or the consolidated structure of many private companies. Cooperative research organizations have a specific design that is contingent to the achievement of their aim and, therefore, they usually are more flexible and change-adapting. About their external dynamics, they are oriented toward generating an innovative workplace for R&D. Cooperative research organizations usually exhibit a high level of uncertainty and potential conflicts in human resource management.

In conclusion, despite the high level of heterogeneity showed by the programs undertaken between countries and level of government, the

ensemble of experiences reflects common trends. There are some new recent trends too, like the following:

- A stronger attention toward regional policies and local contexts (Garrett-Jones, 2004; 2007);
- The need of solving political and management problems related with a multilevel system of governance, as we observed for the case of Spain (Fernandez-Esquinas and Ramos-Vielba, 2011);
- The problem of durability and transformation of existing programs (Turpin et al., 2011)
- The existence of institutional mechanisms of imitation and diffusion of cooperative research models across countries (Bozeman, 2013)

Table 2. Main Cooperative Research Policies and Programs around the World

Country	Policy/Program	Observations
UNITED STATES	- *Science and Technology Centers* - *Engineering Research Centers* - *Industry-University Cooperative Research Centers* - *Proof of Concept Centers* - *Small Business Innovation Research* - *Small Business Technology Transfer Awards* - *Manufacturing Extension Partnerships* - *University Research Centers*	- Long-standing programs covering almost the whole spectrum of the activities from the innovation cycle - Overall satisfaction and positive impact by both sides (science and industry), with some exceptions - Prominence of Federal Government and more entrepreneurial universities, although if recent trends are oriented toward local SMEs and policies at the State level
AUSTRALIA	- *Cooperative Research Centres* - *Other (local programs)*	- Long-standing and inclusive program with a big scope, although if limited to basic and applied research - Success in terms of greater collaboration - Increasing initiative of local governments
CANADA	- *Network of Centres of Excellence*	- Long-standing and inclusive program with good territorial structuration - Based on human resources and social relevance of research - Limited to excellent research: the impact on industry is not clear
SOUTH KOREA	- *Science Research Centers* - *Engineering Research Centers*	- Long-standing experience - Scope and impact are not clear - Excellent (both basic and applied) research - Prominence of National Government - Oriented toward more entrepreneurial universities
CHINA	- *Centers of Excellence (several institutions)*	- National policies directed toward universities and big companies, with the aim to cover the whole spectrum of innovation cycle - Creation of new physical infrastructures - Competitive funding - Functioning and impact are not clear
JAPÓN	- *Tokyo Institute of Technology* - *Others (excellence programs)*	- Governmental and university initiatives - Basic research oriented - Aim to open universities to firms - Impact is not clear: limitations of the programs
EUROPEAN UNION	- *Competence Research Centres* - *Knowledge and Innovation Communities* - *Other (national and regional programs)*	- (Often virtual) centers oriented toward excellent research where public institutes, universities and big companies cooperate thanks to community funds - High diffusion, but socioeconomic impact is not clear - Interesting national (i.e. Austria, Germany, etc.) and regional (i.e. Belgium, Sweden) experiences, consistently with the multilevel paradigm of European policy
SPAIN	- *Basque Excellence Research Centres* - *Cooperative Research Centres* - *CIBER Networks* - *IMDEA Institutes*	- Quite recent programs - Small number of centers, but big size - Strong initiative of regional governments or specific actors - Different types of companies - Focus on applied research, although centers cover many types of activities - Limited evidence about impacts on industry and applications

Source: Own Elaboration

5.2. Resume of Comparison and International Typology

We can position the main international experience we identified within the typology proposed by Gray et al. (2013) as shown in Table 3. We decided to allocate a program within an ideal-type using the information provided by our bibliographical review. Some programs can be assigned to different types at the same time, depending on their features. This is the case for Australian CRCs or Canadian NCEs because they can be based on both governmental infrastructures and universities. In any case, you should consider that this is a tentative classification and it should not be read in a straightforward way.

Table 3 shows that some types of programs or collaborative research centers are more diffused than others. Consortiums between industry associations and other institutions seem to be more frequent to find than strategic partnerships and those based on a public structure. In addition, we observe the existence of marked national and geographical trends. For instance, we observe that in European countries are more frequent models based on public or governmental action, while English-speaking and Asian countries seem opener to university initiative. We should also highlight that the U.S. are the only country that exhibit the presence of any type of program, due to the high number of programs and to the effort of their government and universities. In this sense, Spain encompasses an interesting exception, due to the diversity of its policies despite their recentness and small amount.

Although if the classification scheme we use is enough general to be applied to different institutional contexts and it is probably a good first step toward the international comparison of organizational innovation in the public science sector across several countries, it is also limited for its application in international scenarios. In our opinion, the separation between university-based and public-based programs comes from a cultural viewpoint excessively close to North America or English-speaking countries context. For instance, such framework caused to us some problem to classify the programs existing in South European countries -such as France, Italy, or Spain- where universities and public research institutes share many features and functions (Mustar and Laredo, 2002; Sebastian and Munoz, 2006). In these countries both types of organizations are public bureaucracies depending on the financial support of the National State in any level; they also are regulated by administrative rules and norms that are very different to the usual we can find in English-speaking or North European countries.

Table 3. Applying the Typology to different Countries

Public-Private Consortium • *Science and Technology Centers* (U.S.) • *Engineering Research Centers* (U.S.) • *Cooperative Research Centres* (Australia) • *Network of Centres of Excellence* (Canada) • *Centers of Excellence (*China*)* • *Centers of Excellence (*Japan*)* • *Competence Research Centres* (Europe) • *Knowledge and Innovation Communities* (Europe) • *Cooperative Research Centres* (Spain) • *CIBER Networks* (Spain)	**Public-Private Partnership** • *Proof of Concept Center* (U.S.) • *Small Business Innovation Research* (U.S.) • *Small Business Technology Transfer Awards* (U.S.) • *IMDEA Institutes* (Spain)
University-Industry Consortium • *Industry-University Cooperative Research Centers* (U.S.) • *University Research Centers* (U.S.) • *Cooperative Research Centres* (Australia) • *Network of Centres of Excellence* (Canada) • *Science Research Centers* (South Korea) • *Engineering Research Centers* (South Korea) • *University of Tokyo Institute of Technology* (Japan) • *Basque Excellence Research Centres* (Spain)	**University-Industry Partnership** • *Manufacturing Extension Partnerships* (U.S.)

Source: Own Elaboration

6. Conclusions

Our research is an advance in the debate about the nature and the diversity of the organizational innovations existing across different institutional sector and countries in the science and R&D fields. We showed which actions have been undertaken from the public sector for increasing collaboration in the organization of R&D, as well as the openness toward industry and society. In the last decades, many governments undertook significant changes in this sense. If we compare across different countries and level of government (federal, State, regional) we observe that this is a common trend, at least, if we consider the case of the most socioeconomically developed countries, like the U.S., Australia, or Canada, as well as a reduced set of European and Asian countries.

However, we also found interesting differences between the types of programs we internationally reviewed. Following the typology proposed by Gray et al. (2013) we observed that these forms of organizational innovations significantly differ according to the number of firms participating in collaboration, as well as to their institutional base. We also observe that such types of organizational innovation (i.e. public-private consortiums) are more frequent than others (i.e. university-industry partnerships). Such diversity does not seem to be related with the national context, because some countries simultaneously host different types of programs, like the U.S., Japan, or Spain.

Therefore, our research outcomes help to shed light on the state of the art of the debate about organizational innovation in public R&D, analyzing the types of innovative programs for cooperative research around the world and the main forces underlying their diffusion, like the social processes of change of scientific work, and the prominence of governments at different levels to foster cooperative research. By contrast, our research analyzes deeply neither the characteristics of the innovative organizational model, nor the innovation processes that took place at micro-level of the public research system. Such analysis is necessary for understanding the dynamics of change, the existence of conflicts, and the transformation or the effects of the informal structure of relationships. So, we suggest that future research in this same topic should focus more on the individual and inter-individual processes of innovation and change in scientific practices. Such approach should be useful for obtaining relevant practical implications and helping politicians, managers, and stakeholders to make decisions based on empirical observation.[1] Our research pretended to be a first step in such direction.[2]

[1] Another limitation of our research is the absence of evidence about countries from other geographical areas of the world, for instance, South America or Africa. It would be appropriate to deepen the knowledge about such countries in future research for testing again the validity of the proposed typology.

[2] By a methodological standpoint, further research on this topic should also consider the opportunity of employing systematic methods for mapping organizational innovation programs, similarly to those techniques developed for identifying social innovation projects (Pelka and Terstriep, 2016). We refer to methods of data collection based on documentary review, qualitative case studies and logic techniques for meta-analysis of content like Qualitative Comparative Analysis (QCA). Such techniques proved their capacity for comparative analysis of national case studies and could be successfully applied to international studies on organizational innovation in public science sector too. This could be an interesting path for developing the second step of our research.

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PEELING THE ONION. AN EXPLORATION OF THE LAYERS OF SOCIAL INNOVATION ECOSYSTEMS

Modelling a context sensitive perspective on driving and hindering factors for social innovation

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Abstract: This article builds on the emerging discourse on "ecosystems of social innovation" and develops a model to identify and analyse driving and hindering factors for social innovation initiatives. Social innovation – especially in the context of social entrepreneurship – is increasingly gaining momentum in the European welfare landscape. That growing importance challenges the scientific discourse as it asks for criteria of how to support, foster and sustain social innovation. This article utilizes two case studies illustrating different levels of drivers and barriers and develops a model for understanding contexts of social innovation. Four interrelated context levels are identified which constitute social innovation ecosystems: actors, structures, functions, and norms. The "onion"-model can be used by social innovators, financiers and policy makers alike in order to better and more strategically support social innovations themselves and to improve the framework conditions promoting or impeding them. The model allows for a better understanding of the diversity of supporting and hindering factors initiatives can face in any given urban or national social innovation ecosystem.

Keywords: Social Innovation, Social Entrepreneurship, Ecosystem, Context Sensitivity, Case Study.

Introduction

> 'Social innovation' is a term that almost everyone likes, but nobody is quite sure of what it means.

This statement by Eduardo Pol and Simon Ville (2009: 12) exemplifies the challenge occurring when dealing with the topic of social innovation: As it appears cumulatively in a variety of different societal sectors, there are many different understandings of the term and its characteristics.

Following practice theory, social innovation can be regarded as a driver of social change. With recourse to Gabriel Tarde, a classic exponent of a sociology of innovation, Jürgen Howaldt, Ralf Kopp and Michael Schwarz (2015) regard social change as a bottom-up process, emerging by the imitation of social practices. Following this perspective, an innovation is understood as an invention which is socially diffused by practices of imitation and adaptation to new contexts:

> an innovation is therefore social to the extent that it, conveyed by the market or "non/without profit", is socially accepted and diffused widely throughout society or in certain societal sub-areas, transformed depending on circumstances and ultimately institutionalized as new social practice or made routine. (Howaldt and Schwarz, 2010: 26)

In consequence, an innovation does not necessarily have to exhibit benevolent characteristics to qualify as a social innovation. However, social

innovation is often associated with solutions to societal challenges when it comes to the practical application and common understanding of the term (Phills et al., 2008). As the outcomes of social innovation are often ambivalent, its scientific exploration requires a preferably non-normative approach of looking at and analysing social innovations throughout their life cycle, since any given social innovation, its direct effects and repercussions may be assessed differently by social groups, strata, or generations.

While this generic approach is well suited to cover and describe the diversity of social innovation in different societal sectors as we see it today (Howaldt et al., 2016), we also see research areas emerging which do not cover social innovation as a whole, but "specific sub-sets of social innovations" (Kaletka and Pelka, 2015: 202), focusing on sectors (public sector innovation, corporate social innovation), geographical levels (urban social innovation), key drivers (digital social innovation, although digitalization can also be an objective), or target groups. The focus of this paper is on those social innovations which aim to contribute to the empowerment of vulnerable groups of society. Hence, we are looking at those social practices that "transcend established institutional contexts with the effect of empowering and (re)engaging vulnerable groups either in the process of the innovation or as a result of it" (Rehfeld et al., 2015: 1). This has also been the focus of SIMPACT, a project funded in the 7th Framework Programme of the European Union, with its main objective to investigate the economic underpinnings for social innovation for vulnerable target groups. It refers to social practices as prerequisites for social change while distinctly emphasizing the relevance of their institutional context.

SIMPACT's preliminary research indicates that social innovation seems to be largely context-dependent: "The high level of dependency of SI on its context indicates that obstacles and resistance to SI are primarily coming from the conflict between the culture of the context and the new culture that SI brings with it" (Terstriep et al., 2015: 92). The authors introduce empirically rich insights into the multiple layers of influence and dependency between a social innovation and its context:

> (…) our empirical research shows that it also includes both a reactive and a proactive dimension: social innovators configure their innovations as remedies to the inefficiencies or the lack in public and private provisions (reactive attitude), but they also strive to find new opportunities and to generate new products, processes, and partnerships (proactive attitude). Their proactive behaviour seems to be tightly connected with the "mission driven" nature of SI: social innovators are extremely motivated and display a strong commitment, corroborating their capacity to face difficulties and overcome obstacles. (75).

The context variables of social innovation Terstriep et al. (2015) reveal include the roles of actors, their objectives and capabilities and skills, their working style and modes of governance, the relation between "new" and "existing" solutions relevant for the social innovation, the influence of local contexts like neighborhoods, social settings and infrastructures, legal frameworks, resources, gatekeepers of societal systems and sub-systems, institutions, and several others. These highly differing framework conditions which, in combination, define the social innovation ecosystem, influence the character of social innovations, their design, actor constellations, scaling pathways and chances for sustainability. Therefore, it is widely accepted that it is impossible to take a social innovation which works in one context and simply replicate it in another. On the contrary, a new solution for the same challenge might look completely different under different circumstances and, in any case, requires thorough context sensitivity. What is needed is a model which describes these different contexts of social innovation ecosystems, a model that is both capable of organizing and analyzing drivers and barriers of social innovations on different layers, and which is thereby instructive also for the actors involved.

A system of drivers and barriers

The policy discourse on social innovation is challenged by the question of how to efficiently develop social innovations in practice fields and how to address supporting and hindering factors (e.g. European Commission, 2013; European Anti-Poverty Network, 2016). In the scientific debate, the social innovation ecosystems approach has already helped to make the notion of environment for social innovations more prominent (e.g. Sgaragli, 2014; Bekkers and Homburg, 2007; Bason, 2010; Osborne and Brown, 2011; Hansson et al., 2014) – strongly linked to the diversity of understandings of 'social innovation' (Rüede and Lurtz, 2012). This is especially important regarding the question of how social innovations diffuse or scale, why one out of one hundred inventions flourishes, and why 99 do not. Concepts of social innovation ecosystems mostly differ in their understanding of said environment. They comprise

different attributes such as the geographical level on which the ecosystem unfolds (Unceta et al., 2016), the notion of ecosystems as "seedbeds" of innovation or an actor constellation perspective expressed in the triple and quadruple helix (see Wallin, 2010; Carayannis and Campbell, 2012).

Following Tarde, we focus on the social embeddedness of inventions in a dense network of imitation streams. This allows for a shift in perspective. While Schumpeter, and many others following in his footsteps, focused on the entrepreneur as the innovator and main element of the process, for Tarde (2009) it is inventions which are the central 'driver' of social development. In this context, the idea of a social innovation ecosystem helps to overcome a strict actor-centred approach and the strong concentration on the social entrepreneur as the key agent of change. The view on the environment in which social innovations are diffused opens up the perspective on different dimensions.

To cover the whole environment of SI, it is hence considered part of an ecosystem rather than part of an organisational framework that only contains competitors, suppliers and customers (Bloom and Dees, 2008). In order to better understand why only few inventions prove to be successful and sustainable and a multitude of inventions perish and disappear, we need to understand the ecosystem as the comprehensive organisational, institutional and cultural setting in which the SI is embedded. In this setting, actors like entrepreneurs and others play specific roles and try to fulfil assigned or self-assigned functions – but they themselves do not act in an entirely independent way, but according to the expectations they are confronted with. In this perspective, and this is the second point to make, it is not only supporting factors that should be regarded as the "ecosystem" (like in early approaches of the "incubator" thinking), but the ecosystems also holds hindering and obstructive influences for an innovation. Here, one of the important factors of support/obstruction is whether the new idea, and with it the supporting initiative, can swim with the tide of a whole stream of similar new ideas and innovations, collectively contributing to changing mind-sets and societal change, or not. This article pleads for a context sensitive understanding of an "ecosystem" that is able to identify, analyse and connect both drivers and barriers social innovation initiatives may encounter, no matter by which societal sector(s) they are promoted.

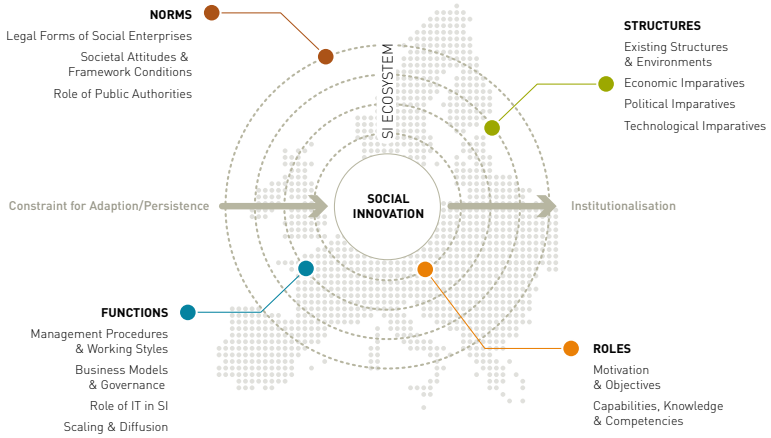
Four layers of social innovation ecosystems

In order to understand the complex environment in which social innovations are created, develop and flourish on the one hand and take effect or perish on the other hand, we have developed the model of an ecosystem with four analytical layers. Each layer describes its one distinct context of drivers and barriers, factors supporting or impeding social innovation. While this model describes the ecosystem of social innovation in general, it can also be applied to social innovations for vulnerable groups.

1. **Context of roles:** On a "role context", socio-demographic factors and roles of social innovation stakeholders and beneficiaries are identified. This includes these actors' political and social attitudes, motivations, socialization, self-concepts, image, capabilities and skills.
2. **Context of functions:** A "context of functions" comprises factors such as management procedures, business and governance models. Questions such as how different actors are interlinked and collaborate, how they adjust their roles in a wider network context and how the network is governed are relevant on this layer.
3. **Context of structures:** This context delivers insights into constraints and path dependencies because of existing institutions, economic, political and technological imperatives. These define factual boundaries or, on a positive notion, the contingency of social innovation. This can be the setup of a city administration, restricting what can be achieved on the role and functional context, or the political orientation of the government. Technological infrastructures (not) available and financial resources to be allocated also build the structural context.
4. **Context of norms:** Here, the societal framework conditions and challenges come into play. The normative context shows professional and ethical standards, historical and legal conditions, codes and other accepted social standards. What social innovation initiatives are legally allowed to do is defined on this layer, as well as which professional standards actors such as politicians, consultants, IT specialists or other parties involved will have.

These contexts, in synopsis, build up an ecosystem of four layers of (digital) social innovation. With this structure and its inherent characteristics of closeness within the contexts and simultaneous permeability, it resembles a model Weischenberg (1990) introduced in communication sciences. He distinguishes different contexts of news production and thereby guides research on the diffusion of news and how and if they make it into mass media. He emphasizes the strong context-sensitivity of the production of "news" and differentiates between four contextual layers, arranging them in form of an "onion" in order to symbolize the interdependency and permeability of those contexts: "Actors" (the innermost layer; assembling socio-demographic features of the media actor, e.g. journalist), "functions" (the second layer; focusing on the process in which media are produced), "structures" (the third layer; collecting economic, political, organizational and technological imperatives) and "norms" (the outer layer; the legal and policy context). The following figure shows a possible model which transfers Weischenberg's approach to social innovation ecosystems.

Figure 1: The "Onion": Four contextual layers of social innovation ecosystems



Source: SIMPACT, 2016.

This onion model, in both perspectives, helps to identify and analyse drivers and barriers both within and between the contexts. Every initiative is operating within – partly visible, partly invisible – framework conditions forming this multi-layered social innovation ecosystem. Some factors are conducive to a good development or scaling of the innovation, some may be influenced and changed for the better, some have to be accepted.

Analysis of SIMPACT case studies

In order to create a fundamental understanding of the „onion"-model of drivers and barriers, it is applied to two case studies conducted within the SIMPACT project. Chapter 4.1 presents the "Discovering Hands" organisation which trains visually impaired women to discover breast cancer. In the following, the "Aspire" company is introduced, a catalogue-delivery company employing people without a permanent residency.

Discovering Hands

Basic Idea and Implementation

Discovering Hands® is an organisation which trains woman with limitations to their visual abilities or blindness to use their tactile sense to perform breast palpation for breast cancer prevention, thus developing the new occupational profile of Medical Tactile Examiners (MTEs). It has been developed by Dr Frank Hoffmann, a resident gynaecologist in the region of Duisburg, North Rhine Westphalia. As a young doctor, he took over his medical office from a colleague and soon started a merger with other gynaecologists in the region resulting in a network of practices with nine medical specialists in four locations (Ashoka, 2010; FASE, 2014). In 2001 he founded the "Quality Circle of Gynaecologists in Duisburg, a round table guaranteeing standardized quality control in the region of Duisburg, and led it until 2009" (Ashoka, 2010). Also in 2009, "Frank set up

a service company to outsource the administrative and IT work of his joint medical practice. This for-profit venture is one of the first of its kind and a pioneering model of how medical practices could become more efficient and fit for future changes in the health care system" (ibid.).

He developed the concept of Discovering Hands after a change in breast cancer prevention policies in Germany. He deemed the medical care for women with the risk of breast cancer as insufficient. In 2004, Hoffmann came up with the idea to utilize the special tactile senses of visually impaired women in medical diagnostics (FASE, 2014). MTEs generate more accurate results because of their especially trained tactile sense and also because they spend more time with patients than a gynaecologist does. In order to enable MTEs to conduct the examinations, Hoffmann developed a standardized system for the women to perform the tests based on braille strips. To qualify for their task, MTEs undergo a nine-months training developed by Discovering Hands. The training is funded by public means as vocational rehabilitation scheme (FASE, 2014). After their training, MTEs can be employed by resident gynaecologists or hospitals or can work for different employers on a freelance basis (Discovering Hands, n.d.a). An increasing number of German health care insurances cover the examinations by MTEs.

Organisational Structure (and support system)

As a hybrid business model, Discovering Hands is based on three pillars:

The **discovering hands gUG** is a non-profit branch of Discovering Hands. It holds the concept's usage and trademark rights. Furthermore, it is responsible for its further development and global penetration, further development of the curriculum, academic validation and education for MTEs and gynaecologists.

The **discovering hands service GmbH** (limited liability company) is the for-profit part and the operative business entity of the organizational structure. This branch is responsible for the production and distribution of the orientation strips and acts as contractual partner of health insurances and doctors (FASE, 2014; Discovering Hands, 2012).

The third part of the organizational structure is the so-called **MTE Forum**, a registered association according to German law which is also a non-profit entity. Its tasks are the representation of interests and the support of the MTEs (FASE, 2014; Discovering Hands, 2012).

Discovering Hands received and receives support by several stakeholders, including BonVenture, a social venture capital fund, the Financing Agency for Social Entrepreneurship (FASE), as well as several foundations, pharmaceutical companies and law firms working on a pro-bono basis, especially when setting up the business structure (FASE, 2014). Discovering Hands was also to a great extent supported by Ashoka[1] as founder Frank Hoffmann was elected Ashoka fellow in 2010.

Whereas the MTE Forum is mainly funded by private donations, the non-profit gUG receives support from several foundations and the profits generated by the GmbH as "the generated profits will be exclusively invested in the expansion of the business or distributed to the non-profit holding company discovering hands® gUG" (FASE, 2014: 16). Also "all further stakeholders (investors) commit to transfer any dividends (if not reinvested) to non-profit entities" (ibid.). The transfer of the profits from the GmbH to the gUG is ensured as the gUG functions as 100 per cent shareholder of the GmbH. This organizational structure ensures the charitable orientation on both sides of the Discovering Hands complex (Discovering Hands, 2012). The goal is for Discovering Hands to become "a self-sustaining financial system" (FASE, 2014: 16).

Scaling

The efforts for scaling Discovering Hands include the goals to incorporate the profession of MTEs as recognized occupation with designated education, a set-up of local centres for breast health and the implementation of the concept in other countries. For that purpose, a social franchising system was developed with professional assistance by a specialized franchise consultancy. The franchisees are selected regarding defined criteria (FASE, 2014). 2014 the expansion to Austria took place, with the school of the Blind- and Visually Impaired People's Association of Austria. This expansion was also supported by several foundations (ibid.). A pilot project in Columbia is currently running (Discovering Hands, 2015).

Aspire

Basic Idea and Implementation

Aspire was a catalogue delivery firm employing homeless people aiming at their rehabilitation. It was founded in the late 1990s by Paul Harrod and Mark Richardson, two recent Oxford graduates.

[1] Ashoka is an organisation fostering the development of social entrepreneurship

During their time in Oxford they had been volunteering "at various charities for the homeless where they concluded that many programs fail because they focus on the symptoms of homelessness rather than on its root causes" (Tracey and Jarvis, 2006) and found that many approaches addressing homelessness failed. Their approach was to tackle the problem at its core by providing employment to homeless people.

"The business model […] was based upon established and successful British for-profit household catalogue delivery firms" (Tracey et al., 2010), as Harrod had been working for such a firm during his studies. Therefore, he was familiar with the catalogue business as well as with the skills required as a door-to-door salesman. The business worked as follows: The employees were recruited from the homeless community in Bristol. They

> were responsible for posting the catalogues through letterboxes and then collecting the resulting orders from around the city. Once the orders had been collected, Harrod and Richardson put the orders together and delivered them to households each weekday evening. Time was also allocated to provide support to employees in the form of literacy and numeracy classes and help with other basic employment skills. (Tracey et al., 2010: 8)

As the founders considered "commission-based pay unfair, they offered employees a flat pay rate, irrespective of sales" (Tracey and Jarvis, 2006: 67). Thus, the employees were given the tools to build capabilities useful for re-building their lives and are also a new perspective on the employment market. The catalogue itself was designed and set up by Harrod and Richardson. As the business was mainly run and supported by volunteers, it was able to work self-sustainingly.

Organisational structure

Aspire was founded with a £5,000 grant from the Prince's Trust as well as donations from local businesses and residents. Promotion by local media helped boosting the sales: "Thirteen months after it was launched, Aspire had attracted 4,000 regular customers, had a turnover of about £150,000, and employed 15 staff. The business began to attract considerable interest from all quarters" (Caulier-Grice, 2008). Due to the success, Harrod and Richardson invited Terrance Roslyn Smith who previously "had been involved in a number of social enterprise projects" (Tracey and Jarvis, 2006: 67) to join the management team by the end of the year 1999 in order to plan Aspire's further development. Early in the year 2000, the three men decided Aspire could expand into other cities in the United Kingdom; they considered franchising to be the quickest and most cost-effective way to do so. Between September 2000 and September 2001, nine franchises were opened throughout the UK (Tracey et al., 2010). The franchises were intended to work the same way as the original venture in Bristol. After having received an investment of £400,000, a new company – Aspire Group – was founded. The Group was in charge of managing the catalogue company, designing the catalogue and sourcing the goods while the franchises were operating locally, distributing the catalogues, delivering orders and supervising and training the homeless employees. Most of the franchises were embedded within existing charitable organisations which had experiences working with homeless people but only four had experience in the field of managing a business or a social enterprise.

"During Harrod's time as CEO, Aspire established 12 franchises, taking 300 homeless people off the streets as sales reached £1.3 million" (Caulier-Grice, 2008). Aspire was praised by press and politics; Prime Minister Tony Blair as well as HRH Prince Charles expressed their appreciation for the business. "The government started to look at Aspire as a potential model to combat social exclusion" (ibid.).

Failure

Soon after the franchises started, the Group as well as the franchises were facing financial difficulties which Tracey and Jarvis (2006) ascribe to the fact that "the narrow range of products attracted only a narrow range of customers" (ibid.: 68). Furthermore, several employees were facing personal problems like drug abuse and poor mental health conditions and were therefore not deemed to be a reliable workforce, which was a danger to the business' success. The franchisees found themselves in a fundamental conflict: Mostly having a background in the field of social work, they were dedicated to the mission of rehabilitating their homeless employees, which were also their clients at the same time. However, when employees were absent and not able to work, the franchisees were not able to maintain their business operations and thus to fulfil their economic goals, while, at the same time having the expenditures of paying the salaries. These difficulties endangered the business success to a great extent and also hurt the franchisees morale when they were forced to dismiss some of their employees against their own convictions. Furthermore, they were lacking

support by their franchisor. Aspire Group did only provide a minimal training and also did not offer guidance regarding the business operations.

As result of the financial struggles, two franchises had to be closed by the end of 2001. Despite the difficulties, Harrod was convinced that the business model would succeed. In the middle of 2002, he managed to gain another loan of £250,000 by a group of investors to stabilise the business. Besides that, Aspire tried changing the business model, focusing on financial survival whereas the franchisees' priorities remained on supporting their homeless employees. The balance between business and social work placed the business in a dilemma, for example when the Group enacted on the investors' insistence to run the catalogue business only during the months before Christmas and Easter, which meant that the franchisees were forced to give up their primary goal of rehabilitating homeless people by a constant employment as the new concept demanded temporary, seasonal employment. To ensure their survival, many franchises tried to establish secondary businesses, like bicycle repair shops, window cleaning services and furniture manufacturing.

The balance between business and social work placed the business in a dilemma. All measures to save the company did not succeed: Harrod stepped down as a CEO in September 2003 and by the end of the year, Aspire was effectively bankrupt (Tracey and Jarvis, 2006).

Applying the model: Drivers and barriers for social innovation

Although the two cases have some characteristics in common (combining non-profit and for-profit elements, diffusion by franchising), they differ in many aspects. Obviously, whereas Discovering Hands succeeded, Aspire failed.[2] While the concrete reasons for success and failure are manifold, complex and difficult to reproduce, some crucial points of their dynamics will be elaborated in the following, highlighting the drivers and barriers of the cases and assigning them to the four contextual layers of the "onion model" of social innovation ecosystems.

Gynaecologist Frank Hoffmann, founder of Discovering Hands, has developed a quality circle in his hometown and has experience in promoting organizational innovation in his company. Being an experienced networker and manager, he was able to use his skills and knowledge to identify a need and to develop and implement a solution. Harrod and Richardson had made some experiences by volunteering to work with homeless people. Harrod had been working as a door-to-door salesman during his studies. Nevertheless, they were relatively unexperienced in social work and management, which in their perspective e.g. had led to the underestimation of the clients' psychological and health problems. However, Harrod convinced potential investors who then provided grants to the start-up business. These are some examples of the two cases' differences in the role context. Again, these findings do not sufficiently explain the developments the two initiatives have taken, but they provide a glimpse of the overall picture. The social innovation is always embedded into the innovators' social reality, his / her objectives motivation, socio-demographic features, competences and opinions. The "context of roles" can be understood as the "opus operatum" aspect of Bourdieu's (1983) notion of "habitus".

Discovering Hands' operation mode is based on different pillars. Beneficiaries are on the one hand women with an increased risk of breast cancer and on the other hand blind women gaining a unique employment opportunity where their limitation of sight is perceived a capability instead. Thus, also the funding is provided by different sources: The trainings for the MTEs are covered by VET funding schemes for people with disabilities and the training centres are paying a license fee to Discovering Hands. The gynaecologists employing METs are buying the orientation strips for the examinations and the examination itself is covered by health care insurances. From the organizational perspective, the SI is operating on a hybrid structure ensuring the economic stability as well as vision and operational orientation. In contrast, Aspire was strictly relying on its own profits. Employees were offered a flat pay rate, which turned out to be problematic when reliability issues with the staff came up. Additionally, there were no therapeutic efforts to meet health problems which have negatively impacted productivity. The work flow of the business was depending to a large extent on volunteers. Despite such potential soft spots in the concept, the business was performing well at first. However, in retrospect, the efforts of scaling this business model by franchising in a relatively early stage of development revealed those soft spots. Management principles of scaling, governance approaches, and the volunteers network Aspire

[2] Regarding Terstriep et al. (2015), failure in the context of SI can be understood not only as business failure but also as mission failure when mission drift is not opposed. Thus, an SI can fail financially while being successful in its mission for the benefit of its target group and vice versa. However, Aspire failed regarding both the sustainability of its business and its mission.

relied upon shape and potentially limit an initiative's development on the ***functional*** layer, which connects to Bourdieu's (1983) notion of "Modus Operandi".

Another promotive aspect for both initiatives can be seen in the support they gained. Discovering Hands was supported in its development by many different stakeholders, among them Ashoka. There was advice from a professional consultancy when it came to scaling the model by franchising. As the franchisees are selected regarding defined quality criteria, the risk of failure is minimized. Furthermore, Discovering Hands utilizes the existing structures in its favour, for example when it comes to funding by different governmental and health care entities. Aspire convinced investors of their business model in order to acquire a sufficient amount of grants. This is not only a driver but a principal prerequisite. Nevertheless, it also turned out to be a barrier when they were approved a loan, although the business model had shown some weaknesses and Aspire was facing its decline. Scepticism on the investors' part could have decelerated the decline or fostered Aspire in adapting its business model. However, the collaboration with its franchisees was not successful: There was no defined and shared set of management knowledge, skills and working principles Aspire could have insisted upon. In addition, the goals were steadily drifting apart, obstructing an efficient collaboration. These examples are part of the ***structural*** context of an initiative. No matter how "new" or "radical" a social innovation may appear, it always faces constraints and path dependencies because of existing solutions, economic, political and technological imperatives which may turn out supportive or hindering.

The foundation of Discovering Hands is rooted in the changing breast cancer prevention policies in Germany. The founder deemed the medical care for women with the risk of breast cancer as insufficient and thus was developing a solution himself. Due to his experience in networking and quality management he was able to estimate the structure of the health care system he was operating in as well as the nature of its underlying norms which enabled him to plan his approach in accordance. Thus, the SI is to a great extent influenced by the political and societal landscape it is operating in. Furthermore, it also takes influence on that landscape in reverse by challenging the medical system, introducing a new profession (blind people with occupational training) and changing the regulations of health care insurances as an increasing number of insurances is willing to cover the costs for the breast examinations. It raises the question of competences and responsibilities between this new and the existing profession of gynaecologists. A promoting factor for Aspire can be seen in the support by the media and politicians, including the then Prime Minister Tony Blair. This can be ascribed to the nature of the British welfare system which is characterized by a high self-responsibility of individuals and a broad deregulation. The concept of Aspire as a self-sustaining, private organisation activating a marginalised group to (re-)enter the employment market and therewith getting included in the society was to a great extent in accordance with the goals and the orientation of the New Labour government. Aspire's initial success was interpreted as a validation of New Labour's social policy and an encouraging signal to comparable organisations. Therefore, political support can be ascribed to the good publicity for the governmental welfare strategy. This support in turn facilitated financial support by investors. The ***normative*** context to which these drivers and barriers belong comprises the "intangible" layer of societal codes - officially codified or unofficially accepted - that influence the initiative. These can be laws, norms, standards, codes of conduct or ethical expectations. As far as the relation of social innovation to social change is concerned (cf. Howaldt, Kopp and Schwarz, 2015), such legal and ethical norms and derived mutual social expectations do not only influence and constrain the development of an initiative. In a medium to long term, social innovations can also affect and alter these societal norms.

Conclusion

These drivers and barriers presented and assigned to the four levels of social innovation ecosystems are surely not the only reasons for the different pathways the two initiatives took. However, in the SIMPACT case studies, they were considered important factors for the overall development of Discovering Hands and Aspire. The four layers of the model can be considered separately, which helps to structure and analyze similar intervening factors in groups. In a following step, these factors can also be analyzed more deeply by elaborating on their interrelations and thereby visualizing the ecosystemic complexity as a whole. The "onion model" describes the multi-layered selection processes within an ecosystem of social innovation. It distinguishes itself by differentiating four levels ("onion layers") of the ecosystem surrounding the SI. Thus, it emphasizes the embeddedness of SI in its societal context. More specifically, by

emphasizing the ambivalence of all social innovations, it sheds light on why drivers and barriers emerge for specific initiatives – again, on different, yet connected layers.

The "onion" metaphor allows for two directions of "cutting" its layers as an interpretative process: As illustrated in the analysis of the case studies, there are several factors on every onion layer influencing the SI in a fostering ("driver") or hindering ("barrier") kind. Thus, as a transversal analytical process the "onion" could be "cut" from the outer layers to the inner core. This perspective reflects the process of constraints and persistence. "Existing" (see above) norms, institutions and social practices strive to prevail themselves against the innovation. This is the force that innovators experience when shaking long established practices: They see laws and norms restraining their innovativeness, institutions rejecting their support and staying in what Terstriep et al. (2015) call "silo thinking" and actors arguing that something has to been done in the "old ways". Constraints and persistences strive to suppress the innovation from macro to micro level and so reflect the process of cutting the onion from outside to the core. The same processes are also valid when it comes to factors promotive for the development of SI.

However, the SI may in turn also have influence on its surrounding ecosystem: If seeing the onion from the inner core to the outward layers (the "growing" process of an onion), the four layers can be understood as a process of growing institutionalisation. The innovation (in its "intangible" form) permeates through persons (the context of roles), through those persons' doing (the context of function) and through organisations (the context of structures). Some innovations even influence the context of norms, for example by influencing what is considered as "ethical" or "right". For example, Discovering Hands takes influence on the layer of norms by challenging the medical system, introducing a new profession (blind people with occupational training) and changing the regulations of health care insurances as an increasing number of insurances is willing to cover the costs for the breast examinations. This "growing" process reflects what Howaldt/Schwarz call "socially accepted and diffused" (2010: 21). In this notion, a social *invention* only becomes a social *innovation* by being actually used, spread and turned into social practice. The onion model therefore offers a model of tracing the transformation from an invention into a social practice through its different layers with a growing institutionalisation and societal diffusion. In reality of course, such growth across different layers is not linear, but characterized by constant feedback loops when objectives are challenged, new competencies are developed or cooperational structures are forged as a result of learning, in order to better sustain and institutionalize the innovation. This observation accredits the insight that innovations spread through people's doing. In other words: "In the realm of the social, everything takes place as invention and imitation, with imitation forming the rivers and inventions the mountains" (Tarde, 2009: 26, cited from: Howaldt et al., 2014: 6).

A social innovation initiative, and especially a bundle of such initiatives in a common practice field, is not only influenced by its surrounding ecosystem, but it may also influence its ecosystem itself. The onion model is capable of illustrating that kind of reciprocal interaction. Another outstanding characteristic of the model can be seen in the missing need for a dualistic classification of drivers and barriers for SI. The assessment of fostering and hindering factors in an SI's ecosystem is often characterized by an uncertainty how to define drivers and barriers and their interconnections. Therefore, a missing driver can be a barrier and vice versa. The onion is not dependent on such a dualistic classification as it only displays influential factors in both directions (cutting the onion from outside to the core or vice versa).

Especially the last characteristic makes the model suitable for counselling in the field of social entrepreneurship as well as on the policy level. In the context of the SIMPACT project, a so-called Context Understanding Guide was developed based on the onion model (Pelka and Markmann, 2015). The guide consists of a structured collection of questions helping social entrepreneurs, policy makers and other stakeholders involved assess the situation and context of the respective SI. The questions cover aspects regarding the different onion layers which can be relevant for the development of the SI in the context of its ecosystem. As drivers and barriers are hard to define and are, to a great extent, dependent on the single respective innovation, the ambition of this guide is not to pinpoint drivers and barriers by itself but to support the actor in identifying possible drivers and barriers (ibid.).

Due to its flexibility and multi-directionality the onion model can be used as an orientation for the application of further instruments or tools or may as well be developed further and evolve into an instrument of assessment and planning itself.

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SOCIAL ENTREPRENEURS

Important Actors within an Ecosystem of Social Innovation

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Abstract: The state of research on social entrepreneurship is unsatisfactory. Social entrepreneurship research has been a key topic of the social innovation debate, contributing a lot to the development of the design, motives and practices to solve social demands and societal challenges mainly in the third sector, focusing at the role, possibilities and constraints of a social entrepreneurs and the social (instead of a market-driven) economy. However, the strong focus on social entrepreneurship fails to recognize other key aspects and the potential of a comprehensive concept of social innovation and its relationship to social change. Since findings from innovation research point out the systemic character of innovations, the strong concentration on social entrepreneurs as individuals responsible for innovations can be challenged. Instead, a differentiated perspective of the role of social entrepreneurs is needed, taking into account the different phases of the social innovation process as well as cross-sector collaborations with the whole diversity of societal actors (private and public actors, universities, and civil society).

Keywords: Social Entrepreneurship, Social Innovation, Social Practice, Social Theory, Social.

Introduction

> The harder task for social innovation research is to understand the place of social innovation in much bigger processes of social change. (Mulgan, 2015: xiii)

As of today, there is a growing consensus among practitioners, policy makers and the research community that technological innovations alone are not capable of overcoming the social and economic challenges modern societies are facing. The importance of social innovation successfully addressing social, economic, political and environmental challenges of the 21st century has been recognized not only within the Europe 2020 strategy but also on a global scale.[1] Recent years have seen this new form of innovation emerging, both as an object of research[2] and development: Social innovations appear in a variety of forms and influence our lives. They change the way we live together, travel, work or handle crises, and they are driven by different societal sectors and cross-sectoral networks.

Though there is widespread recognition of the need for social innovation, there is no clear understanding of how social innovation leads to

[1] See the manifold contributions in Harrisson, Bourque, and Széll (2009); Franz, Hochgerner, and Howaldt (2012) and Moulaert et al. (2013).

[2] In recent years, empirical research on social innovation has increased in the European Union, beside SI-DRIVE (which results are the basis of this article) some of the key international projects have been, e.g. TEPSIE, WILCO, or TRANSIT.

social change.[3] Despite some large-scale international projects on the topic, so far the conceptual weaknesses in the development of a theoretically grounded concept that centres on the relationship between social innovation and social change have not yet been overcome. Thus, in their analysis of European projects of recent years, Jane Jenson and Denis Harrisson come to the following conclusion:

> Although social innovations pop up in many areas and policies and in many disguises, and social innovation is researched from a number of theoretical and methodological angles, the conditions under which social innovations develop, flourish and sustain and finally lead to societal change are not yet fully understood both in political and academic circles. However, in particular in the current times of social, political and economic crises, social innovation has evoked many hopes and further triggered academic and political debates. (European Commission, 2013: 7)

At the same time, the emerging field of social entrepreneurship research is increasingly focusing on a better understanding of the dynamics of design, practices and motives that blend together for effective social change (Davies, 2014). This discussion is based on an understanding which regards social innovations as micro-phenomena, which – following Schumpeter's entrepreneur concept – (may) contribute to the much larger process of social change through diffusion and scaling-up processes via the central figure of the social entrepreneur (Mulgan, 2015: xiii). But if this is the case, it cannot be sufficiently explained where the ideas in question come from, and why some initiatives spread while others fail and perish (ibid.). In her analysis of the debate, Davies refers to the "critical turn in social entrepreneurship scholarship" (Davies, 2014: 72) that is currently taking place, which revolves precisely around the point of the social entrepreneur's contribution to social change and its conceptual foundations.

> Clearly then, there is an important strand of thinking within social entrepreneurship that sees it as intimately connected to processes of social change. But what is the theory of change inherent in social entrepreneurship? (ibid.)

The purpose of our paper is to draw a systematic connection between these two debates. We argue that from the perspective of socio-scientific innovation research, the development, implementation and institutionalization of the concept of social entrepreneurship can be described as a social innovation. Borrowing from Schumpeter (1964), social entrepreneurs create a new type of behaviour, which fulfils an important societal function comparable to the type of business entrepreneur in the economy. Social entrepreneurs become central actors when it comes to initiating and implementing innovations, which explicitly aim at solving social problems. The social phenomenon of social entrepreneurship is subject of innovation research, which describes possibilities, but also limits of the concept in its ambivalence, and analyses relationships with other forms of social innovation. By doing so, innovation research contributes to a scientific analysis, conceptual clarification and realistic perception of this phenomenon. At the same time, it makes the possibilities and limits of the concept visible in a complex overall structure of social innovation processes. In this context, cross-sector dynamics play a special role:

> Increasingly, innovation blossoms where the sectors converge. At these intersections, the exchanges of ideas and values, shifts in roles and relationships, […] generate new and better approaches to creating social value. (Phills, Deiglmeier and Miller, 2008)

Since findings from innovation research point out the systemic character of innovations, a strong focus on social entrepreneurs as individuals responsible for innovations should be viewed critically. Instead, we need a more differentiated perspective of the role of social entrepreneurship.[4]

The paper starts with an overview of the current situation and the perspectives of socio-scientific innovation research elaborating the theoretical foundations of social innovation and investigating the relationship between social innovation and social change (chapter 2). A comprehensive concept of social innovation focusing on cross-sectoral collaborations between actors from state, research, business and the civil society and its relevance for the social entrepreneurship research will be discussed against the background of first results from the global research project SI-DRIVE (Social Innovation – Driving Force of Social Change)[5] in

[3] Sound evidence of this can be found in the key publications in the field of social innovation research in recent years (Howaldt et al., 2010; Howaldt et al., 2014; Nicholls et al., 2015; Klein et al. 2016).

[4] With regard to such a differentiated understanding of the role of social entrepreneurs in the broader process of social innovation Mair suggests for instance that social entrepreneurship should play a key role in the early stages of the social innovation life cycle. (Mair, 2010)

[5] SI-DRIVE (www.si-drive.eu) is funded within the 7th Framework Programme of the European Union. The project is working on the theoretical concepts, areas of empirical research and observable trends in the field of social innovation on both European and global scales.

chapter 3. A special focus will be on the first empirical results of a global mapping conducted in 2015 in which more than 1.000 social innovation cases were collected and analysed. The results shed a light on the diversity of social innovation on different societal levels and stimulate the generic theoretical debate as well as the debate on the role of actors, network of actors and modes of governance. We introduce social innovation ecosystems as an emerging theoretical approach and heuristic model and reflect upon the role of social entrepreneurs in social innovation initiatives and processes.

In the conclusion (chapter 4), the paper discusses the consequences of a comprehensive concept of social innovation for social entrepreneurship, highlighting its multi-sectoral perspective. Subsequently, it analyses social entrepreneurship against the background of findings of innovation research and argues that the type of social entrepreneur itself constitutes a social innovation, i.e. an alternative social practice, which spreads widely through society. For this reason, social entrepreneurs are agents of social innovation by acting entrepreneurially in a new frame of reference and thereby inventing, developing and achieving new social practices in society. Social entrepreneurship and the third sector appear as an essential but not dominant part of a social innovation ecosystem. They are an important component of a broader social innovation concept.

An emerging theory of social innovation grounded in social theory

As a discipline, innovation research widely finds its systematic beginnings and point of reference, valid to this day, in Schumpeter's 1912 publication of "Theorie der wirtschaftlichen Entwicklung" [Theory of economic development] (Schumpeter, 1964), where a definition of innovation was introduced. According to this work, economic development takes place as a permanent process of ‘creative destruction’. What propels this dynamic, the impetus and origin of economic fluctuation, is innovation in the sense of the ‘execution of new combinations’, of ‘establishing a new production function’. Inventions become innovations if they successfully take hold on the market (diffusion). Introducing and realizing innovations is the actual work and function of the entrepreneur. Schumpeter focuses not only on technical innovation, but distinguishes between product-related, procedural and organizational innovations, using new resources, and tapping into new markets. Moreover, he underscores the necessity of social innovation occurring in tandem in the economic arena as well as in culture, politics and a society's way of life guaranteeing economic efficacy of technological innovations.

These two emphases of his work, the entrepreneur as the key figure on the one hand and the extended innovation concept including process and organizational innovations, on the other hand, were the main reasons for Schumpeter posthumously becoming a central figure also in contemporary social innovation discourse – especially in those debates where the boundaries between social entrepreneurship and social innovation remain unclear (for a critical analysis of this boundary problem see Davies, 2014; Howaldt, Domanski, and Schwarz, 2015). Social entrepreneurship, again, is playing a vital role in the promotion of urban development and can be supported by intermediaries such as social innovation labs and centres, even though the social innovation concept exceeds social entrepreneurship considerably (see chapter 3).

Following Schumpeter, the concept of innovation was increasingly reduced to technological innovations. Remarks on social innovation in literature after Schumpeter are scarce and marginal (Moulaert et al., 2005 and 1974). From an economics vantage point, discourses on innovation today are directed primarily at the underlying conditions impeding and fostering innovation, both within a company and outside of it. Necessary or deployable resources, the organization of innovation management in terms of systematic innovation replacing or enhancing the role of the entrepreneur (Blättel-Mink, 2006: 81) as well as the economic impact and effects of innovation are key areas of the debate.

Innovation research in the social sciences is dedicated, by contrast, primarily to the relevance of the social framework conditions and to the process of innovation. Perspectives include the social preconditions and influencing factors for (predominant) technological innovations, the correlation between the technological and the social, between technological and social innovations, between innovations and societal development, the institutional context and the interaction between those involved in the process of innovation.

A new innovation paradigm

Against the background of the findings in innovation research and the clear emergence of paradoxes and confusion in prevailing innovation policies, the question arises whether the technology-oriented innovation paradigm that has been shaped by the industrial society remains functional. A fundamental change process

involving the entire institutional structure and the associated way of thinking and basic assumptions can be interpreted, in our understanding, in terms of the development of a new innovation paradigm[6] (Howaldt and Schwarz, 2010). This kind of approach opens up fundamentally new perspectives on recognized problems and thus simultaneously unlocks new possibilities for action.

International innovation research is providing numerous indications of a fundamental shift in the innovation paradigm (FORA, 2010; Howaldt and Schwarz, 2010). In the center of this new paradigm is the concept of social innovation.

With innovation processes opening up to society the companies, technical schools and research institutes are no longer the only relevant agents in the process of innovation. Citizens and customers no longer serve as suppliers of information about their needs (as in traditional innovation management): instead, they make contributions to product development and problem-solving processes. Terms and concepts such as open innovation, customer integration and networks reflect individual aspects of this development. At the same time, innovation – based on economic development – becomes a general social phenomenon that increasingly influences and permeates every aspect of life.

What makes an innovation a social innovation?

A critical literature review conducted in the SI-DRIVE project reveals that social innovation has many different (and sometimes conflicting) meanings, spanning a variety of areas such as innovation studies, management and organisational research, the field of workplace and quality of working life, as part of the social economy, in sustainable development, or as an aspect of local competitiveness and territorial development (Howaldt et al., 2014). In recent years, the international academic debate has seen a significant upswing in light of increasing political interest in the concept of social innovation (Howaldt and Schwarz, 2010; Franz, Hochgerner and Howaldt, 2012; Moulaert et al., 2013). However, this has not resulted in considerabled conceptual clarity. Thus, to cite one example, the Open Book of Social Innovation (Murray, Caulier-Grice and Mulgan, 2010), which is very influential in the European debate, provides a multitude of examples, methods and concepts of social innovations. Here, the diversity of phenomena which are represented by the concept of social innovation is not the actual problem. What is problematic, particularly for the scientific discourse, is that the term itself remains unclear.[7] Hence, the criticism expressed some years ago by authors such as Pol and Ville (2009) and others, stating that "the term 'social innovation' has entered the discourse of social scientists with particular speed, but there is no consensus regarding the relevance or specific meaning in the social sciences and humanities" (Pol and Ville, 2009: 878), still remains valid.

This lack of consensus mainly has to do with different understandings of the notion of the 'social'. In this regard, we argue that with social innovations, the new does not manifest itself in the medium of technological artefacts, but at the level of social practices. If it is accepted that the invention and diffusion of the steam engine, the computer or the smartphone should be regarded differently from the invention and social spread of a national system of healthcare provision, the concept of corporate social responsibility (CSR) or a system of micro financing, then it stands to reason that there is an inherent difference between technological and social innovations.

In this perspective, we describe social innovation as a new combination[8] and/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 it is possible on the basis of established practices. Therefore an innovation is social to the extent that it, conveyed by the market or "non/without profit", is socially accepted and diffused throughout society or in certain societal sub-areas, transformed, depending on circumstances, and ultimately institutionalized as new social practice or made routine. As with every other innovation 'new' does not necessarily mean 'good' or 'socially desirable' in an extensive and normative sense. According the actors' practical rationale, social attributions for social innovations are generally uncertain (Howaldt and Schwarz, 2010: 26).

> Therefore, 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)

[6] Paradigm means in this sense, borrowing from Kuhn (1996: 10), a "pattern of thought rooted in commonly held basic assumptions that can offer a community of experts considerable problems and solutions for a certain period of time" (Kuhn, 1996: 26).

[7] Social innovations are defined normatively "as new ideas (products, services and models) that simultaneously meet social needs and create new social relationships or collaborations. In other words, they are innovations that are both good for society and enhance society's capacity to act" (Murray, Caulier-Grice and Mulgan, 2010: 3; also Bureau of European Policy Adviser, 2010).

[8] The term relates to the Schumpeterian definition of innovation as a new combination of production factors.

Social innovation and social change

While culminating 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. Whereas – based mainly on Ogburn's theory – a specialised sociology of change has developed (Schäfers, 2002), with few exceptions, social innovation as an analytical category is at best a secondary topic both in the classical and contemporary social theory approaches and concepts of social development, modernisation and transformation. This is even more astonishing given that Ogburn not only makes a 'cultural lag' – the difference in the time it takes for the comparatively 'slow' non-material culture to catch up with the faster-developing material culture – his starting point and systematically differentiates between technological and social innovations (and inventions) as critical factors in social change. He also emphasises that the use of the term 'inventions' is not restricted to technological inventions, but also includes social inventions such as the League of Nations.

> Invention is defined as a combination of existing and known elements of culture, material and/or non-material, or a modification of one to form a new one. […] By inventions we do not mean only the basic or important inventions, but the minor ones and the incremental improvements. Inventions, then, are the evidence on which we base our observations of social evolution. (Ogburn, 1969: 56)

Thus, Ogburn is convinced that in the interplay of invention, accumulation, exchange and adaptation, he has discovered the basic elements of "cultural development" (Ogburn, 1969: 56) and hence – like Darwin for biological evolution – has developed a model to explain social evolution.

However, if transformative social change refers to the reconfiguration of practices from which sociality arises, in this perspective it cannot be perceived as the result of an evolutionary process but a reaction in the shape of processes of reflexive social learning towards existing ways of life and forms of practices becoming obsolete (Jaeggi, 2013). In this sense, social change can be influenced by changing social practices and stimulating social innovations based on continuous new adaptation and configuration anchored in social practices themselves, which means real experiments with the participation of heterogeneous actors, understood as carriers of social practices and in the context of an unequally self-organized co-evolutionary process (Shove, 2010: 1274; Shove, Pantzar and Watson, 2012: 162).

Changing social practices are generally based on drawn-out, contingent and self-managing processes which, as Tarde points out, are subject to their own 'laws' – the laws of imitation. Previous attempts to 'manage' such processes through policy have proven to be decidedly difficult.

One of the key tasks in this regard is a necessary redefinition of the relationship between policy and the "new power of the citizenry" (Marg et al., 2013), the civil society engagement, the many and diverse initiatives and the movements "for the transformation of our type of industrial society" (Welzer, 2013: 187). "A central element here is to enable citizens [in the sense of empowerment – authors' note] to share in responsibility for the future, which should not be equated with personal responsibility in the neoliberal sense" (Rückert-John, 2013: 291).

The manifold world of social innovations – results from a global mapping

For a long time, social entrepreneurship research has been at the center of the social innovation debate, which has contributed considerably to the development of the design, motives and practices to solve social demands and societal challenges mainly in the third sector. Key research interests were the role, possibilities and constraints of a social entrepreneur and the social (instead of a market-driven) economy as well as on "the relevance of local embeddedness and sociocultural context" (Shaw and de Bruin, 2013: 737).

However, the strong focus on social entrepreneurship failed to recognize other key aspects and the potential of a more comprehensive concept of social innovation and its relationship to social change. The discussion concentrated on an understanding which regards social innovations as micro-phenomena - following Schumpeter's entrepreneur concept – (possibly) contributing by diffusion and scaling-up processes. But again, this raises the question how social entrepreneurs contribute to social change and its conceptual foundations (Davies, 2014: 72). Against this background, we share the view expressed by Jessop et al. that the role of "social enterprise as the key agent for social change" is overestimated (Jessop et al., 2013: 111).

Based on the definition of social innovation presented above, the first global mapping of social

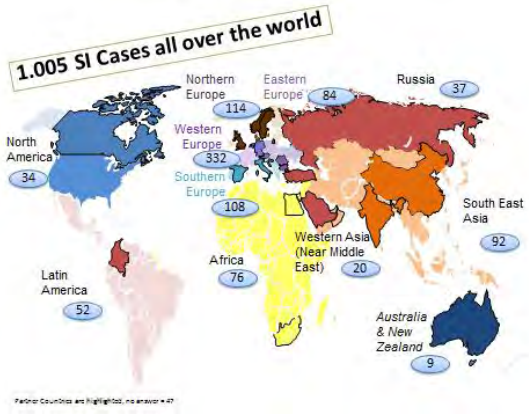
innovation initiatives done within SI-DRIVE[9] reaffirms the assumption that the concept of social innovation cannot be limited to one focus, be it social entrepreneurship or social economy, and demonstrates that widening the perspective is crucial for understanding social innovation. Hence, it makes an important contribution in terms of liberating social innovation from the silo of the third sector and opening up to other areas of society.

In the following, we will present the results of the global mapping of SI-DRIVE with a special focus on the role of social entrepreneurship. The analysis underlines the growing importance and variety of social innovation (including and going beyond social entrepreneurship), its ubiquitous concept across divers and connected practice and policy fields, its response to social needs and societal challenges instead of focusing primarily on economic success and profit, and its broad range of actors and sectors overarching collaboration, including user involvement. It will become evident that social entrepreneurs are a part of the manifold world of social innovation, relevant but not to be overestimated.

Growing importance and variety of social innovation

A variety of diverse social innovations are successfully addressing social, economic, political and environmental challenges of the 21st century on a global scale – driven by cross-sectoral collaboration and networks and changing social practices. This growing importance of social innovation is reflected by the mapping results showing a high number and variety of practice fields[10] and related initiatives (more than 90 practice fields were defined for more than 1.000 social innovation initiatives or projects). The mapping reveals the diversity of social innovation worldwide, the variety of social innovations initiatives and practices, concepts and approaches, innovation processes and actor constellations, and the complex processes and networks through which social innovation occurs. At the same time there is a high number of persons engaged (employees, volunteers, experts and advisers) – including a remarkable user involvement – and a high number and diverse types of participating partners and surprisingly high budgets of some (large scale, national and international) initiatives.

Figure 1: Worldwide mapping of SI-DRIVE (Region, where the social innovation was implemented



Source: SI-DRIVE, 2016.

Concerning Social Entrepreneurship: About half of the mapped initiatives which include social enterprises (all in all 106 cases) were implemented in Western Europe (48%), 16% in Southern, 6% in Eastern and 3% in Northern Europe. Within the non-European countries there are only 21% initiatives implemented with participation of social entrepreneurs, most of them in Africa (13%).[11]

Diverse and connected policy and practice fields - ubiquitous concept

The mapping demonstrates the strong orientation and need for social innovation to overcome societal challenges and social demands and the broad range of practice fields covered by the initiatives. In every policy field of SI-DRIVE (education, employment, environment, energy supply, transport and mobility, health and social care, poverty reduction and sustainable development), we find a growing and highly diversified number of (mainly younger[12] but also established) social innovation initiatives, often not implemented in a single policy field but covering other policy fields as well. Social innovation has become a ubiquitous concept.

Social enterprises[13] are represented in all the policy fields of SI-DRIVE: Mainly in line with the

[9] SI-DRIVE mapped in an explorative way a first global database with more than 1.000 cases, covering about 80 countries from all world continents and addressing seven policy fields (education, employment, environment, mobility and transport, health and social care, poverty reduction and sustainable development). The findings presented in this article are preliminary results, a detailed analysis is ongoing.

[10] To reduce the immense variety of social innovation categories we defined "practice field" as general type or summary of projects expressing general characteristics common to different projects (e.g. micro-credit systems, car sharing) in relation to single "projects/initiatives" with a concrete implementation of a solution responding 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).

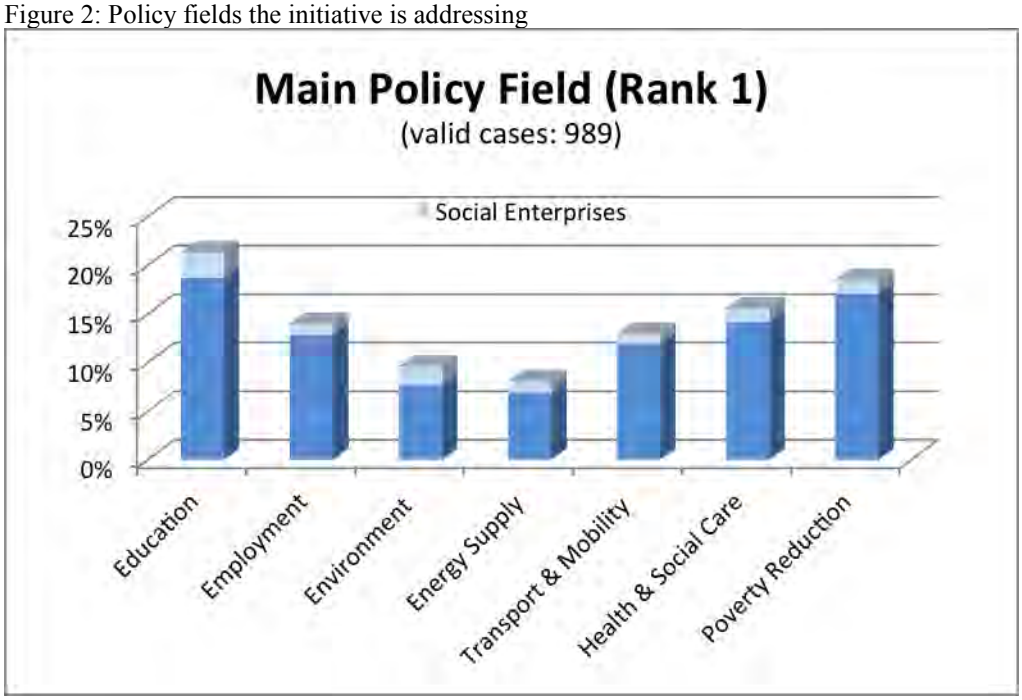
[11] As a European Project, the mapping of SI-DRIVE is focussing mainly on European Initiatives.

[12] About three of four initiatives of the database were founded in the last ten years.

[13] Within the 1.005 social innovation cases in the SI-DRIVE mapping database we identified 106 initiatives with at least 131 social enterprises.

average allocation of social innovation cases in total, with a slightly higher engagement in the field of education, environment, poverty reduction and sustainable development. The main practice fields in which social entrepreneurs are active include new learning arrangements and the reduction of educational disadvantages, training and education, esp. (social) entrepreneurship education, energy collectives, new models of care, and diverse activities in poverty reduction.

Figure 2: Policy fields the initiative is addressing



Source: SI-DRIVE, 2016.

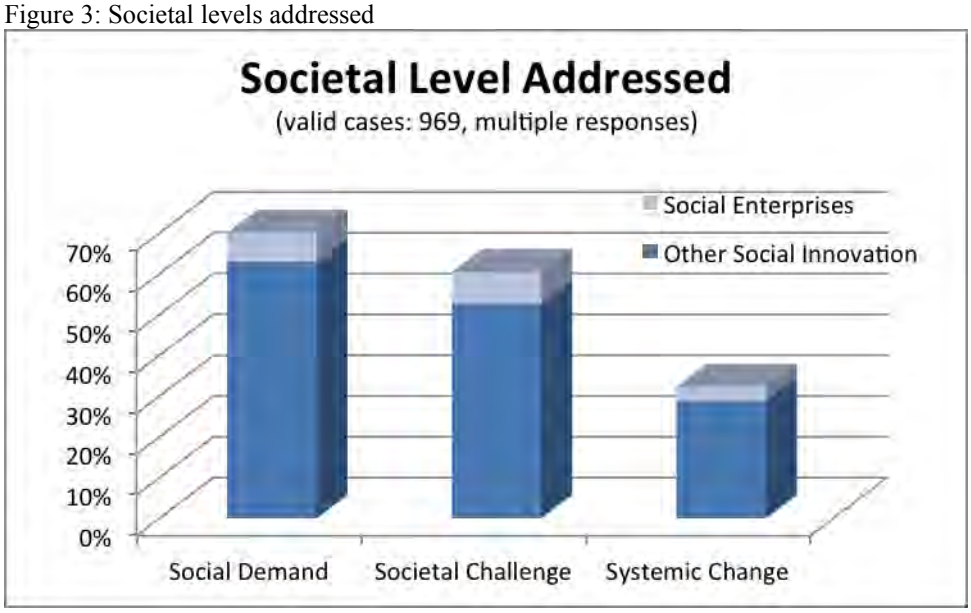
Responding to social needs and societal challenges instead of focusing primarily on economic success and profit

Social innovative projects and initiatives address social needs and societal challenges instead of focusing primarily on economic success and profit. Referring to a distinction introduced by the Bureau of European Policy Advisers suggesting that "the output dimension refers to the kind of value or output that social innovation is expected to deliver: a value that is less concerned with mere profit, and including multiple dimensions of output measurement" (Bureau of European Policy Advisers, 2010: 26). There are three societal levels on which output may take place. In this understanding, social innovations

- "respond to *social demands* that are traditionally not addressed by the market or existing institutions and are directed towards vulnerable groups in society […],
- tackle 'societal challenges' through new forms of relations between social actors, […] respond to those societal challenges in which the boundary between social and economic blurs, and are directed towards society as a whole […],
- or contribute to the reform of society in the direction of a more participative arena where empowerment and learning are both sources and outcomes of well-being" (ibid.: 29).

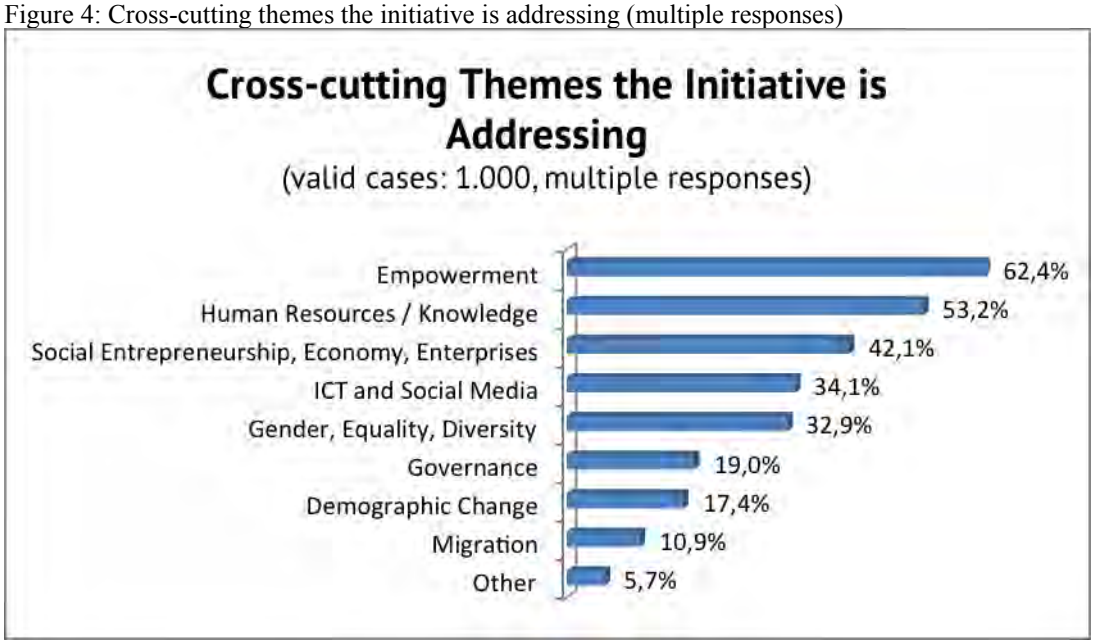
With regard to the SI-DRIVE definition, a high diversity of addressed social needs and societal challenges tackled in the different policy and practice fields appear. 71% of the mapped cases refer to a (local) social demand and 60% are tackling societal challenges. One of three social initiatives is addressing social change. Again social enterprises are represented within a small number of the initiatives, but also focusing on social demands, societal challenges and (to a smaller degree) on social change.

Figure 3: Societal levels addressed



Source: SI-DRIVE, 2016.

Figure 4: Cross-cutting themes the initiative is addressing (multiple responses)



Source: SI-DRIVE, 2016.

Against the background of this result, it can be concluded that social enterprises, like other social innovation partners, are interested in contributing to and fostering far reaching processes of social change and therefore the relevance of their role within a social innovation development and social change is of evidence.

Still, as shown in the policy field reviews[14] and the quantitative mapping of SI-DRIVE, there is a common set of major social needs, challenges and opportunities which are driving social innovation in almost all countries. These contain demographic change and ageing societies, social inclusion and cohesion, tackling poverty, environmental issues including new ways in the fields of energy and transport. Additionally, certain cross-cutting themes appear as well: While empowerment and human resources / knowledge are the main topics "Social Entrepreneurship, Social Economy, and Social Enterprises" is the third important cross-cutting issue of the social innovation initiatives. This is also showing the relevance of social

[14] As part of the SI-DRIVE project, reviews of the different policy fields will be published by the end of the project in 2017. The first summaries of the results can be downloaded under: http://www.si-drive.eu/?p=1899.

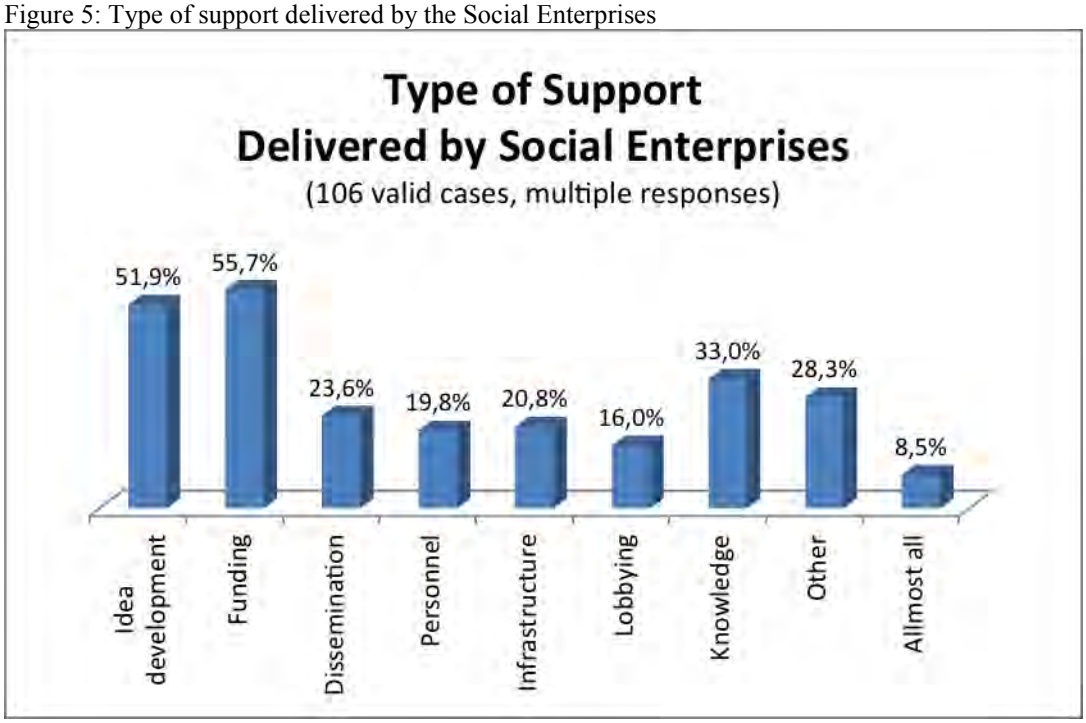
entrepreneurship for a broader approach of social innovation, because only 106 cases have included social enterprises, but 401 cases emphasized social entrepreneurship, social economy or social enterprises as a relevant topic for their initiative.

While NGOs/NPOs are the most frequent type of organizations implementing social innovations, social enterprises are in 7% of all mapped initiatives the main implementing body. Beside the main implementing body we categorized three different types of partners:

- ***central developers*** of social innovation: actors being able to translate knowledge about unsatisfactory circumstances into an innovative idea in order to improve the situation, having the ability to not only invent, but also to develop and implement the idea in order to make it a social innovation
- ***promoters*** of social innovations: providing infrastructural equipment, funding, and connect initiatives to superior policy programs
- ***providers of specialized knowledge:*** in order to spur and enrich the development process.

Based on this differentiation, in 16% of the social innovations social enterprises take over the role as a central developer and in 15% of the cases they are promoting the initiative. This is underlined by the main type of support social enterprises are delivering. More than half of the social enterprises are contributing by idea development and one third is supporting by specific knowledge (providers of specialized knowledge). However, organizing funding sources is done by 56% of the social enterprises. Beside this, dissemination and lobbying activities, delivering personnel and infrastructure (between 16-24% of the social enterprises) are minor but still to be mentioned support activities.

Figure 5: Type of support delivered by the Social Enterprises

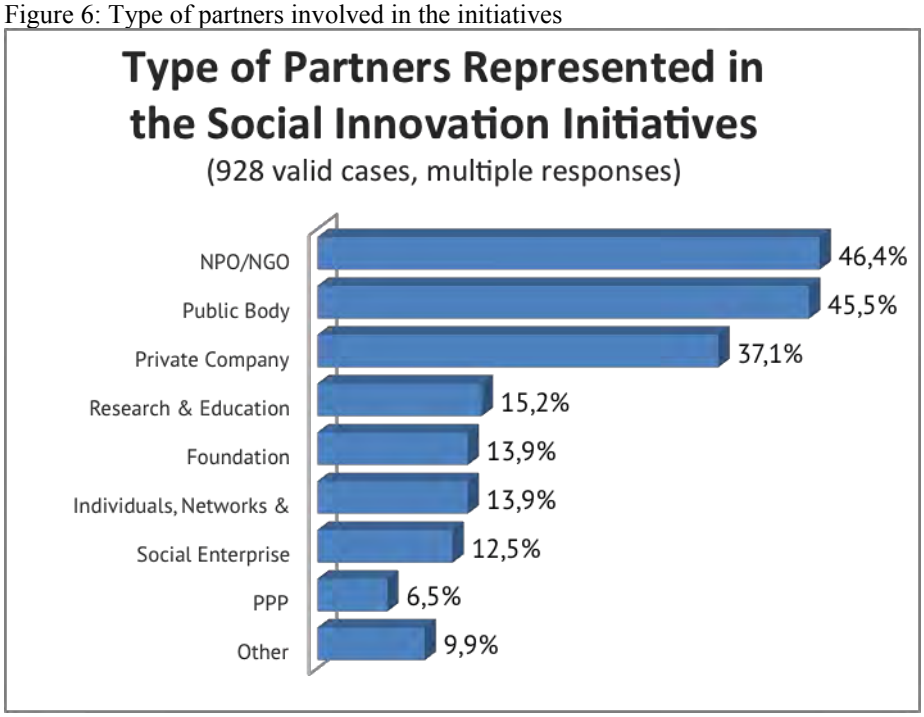


Source: SI-DRIVE, 2016.

Broad range of actors, sectors overarching

The mapping reaffirms the assumption that the concept of social innovation cannot be limited to one focus, be it social entrepreneurship or social economy, and demonstrates that widening the perspective is crucial for understanding social innovation. This is underlined by the already appearing broad range of actors involved in the mapped social innovation initiatives. While private companies, public bodies and NGOs/NPOs are involved in many initiatives, social enterprises surprisingly are engaged only in 13% of the initiatives (and they represent only 4% of all the project partners across the initiatives in total, 3.007 partners).

Figure 6: Type of partners involved in the initiatives



Source: SI-DRIVE, 2016.

The multiple types of partners involved in social innovation initiatives (including social enterprises) are representing also different societal sectors relevant for social innovations on a more or less equal footing.

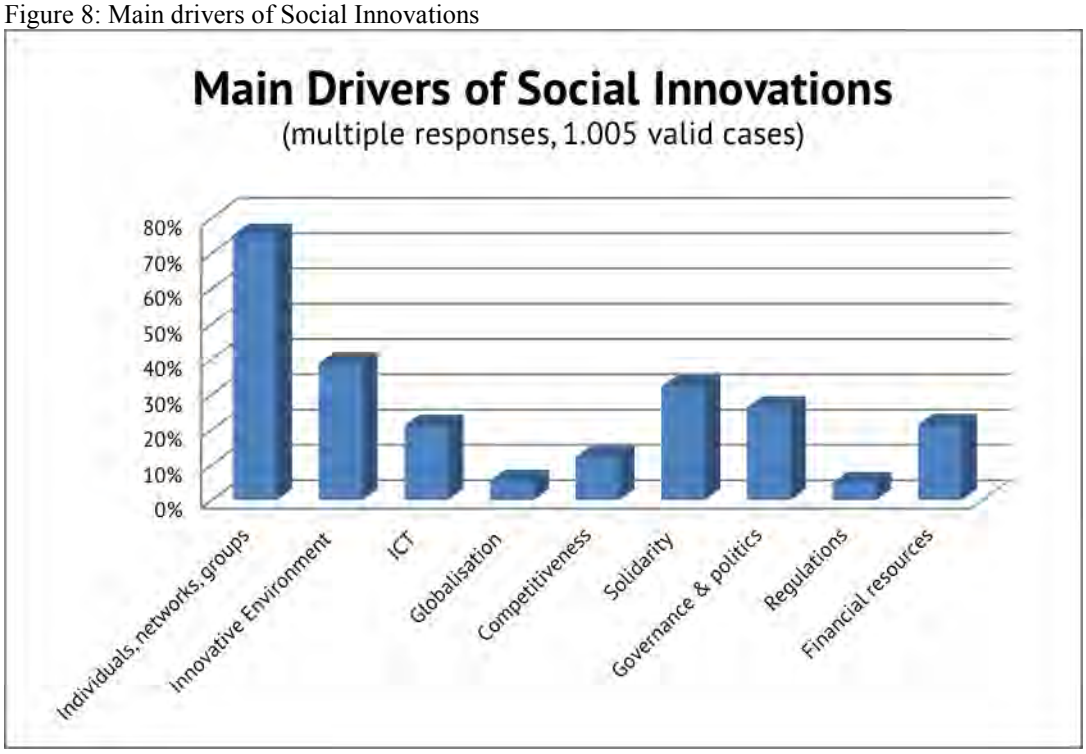
Figure 7: Sectors actively involved in the Practice Field

Source: SI-DRIVE, 2016.

All these actor relevant findings indicate that cross-sectoral collaborations are of great importance, and – in line with the lower presence of social enterprises – a general dominance of the third sector cannot be detected. All three sectors (public, private, civil) are represented to a high degree in all the policy fields and different world regions: Especially cross-sectoral collaboration – including public sector, civil society, and private sector – plays a very important role in many of the initiatives (and becomes even more important on the level of practice fields).

In general, individuals, groups and networks are by far the main important drivers, followed by an innovative environment. In contrast, funding challenges are the main barriers of about 50% of the social innovation initiatives (independent if they are encompassing social enterprises or not), followed by a lack of personnel and knowledge gaps (each about 20%). For social enterprises there is higher orientation at the economic return from own products or services as a funding source than for other social innovations (39% vs. 30%); the same concerns the higher significance of own partner contributions (46% vs. 39%) as well as foundations and philanthropy capital (31% vs. 21%).

Figure 8: Main drivers of Social Innovations



Source: SI-DRIVE, 2016.

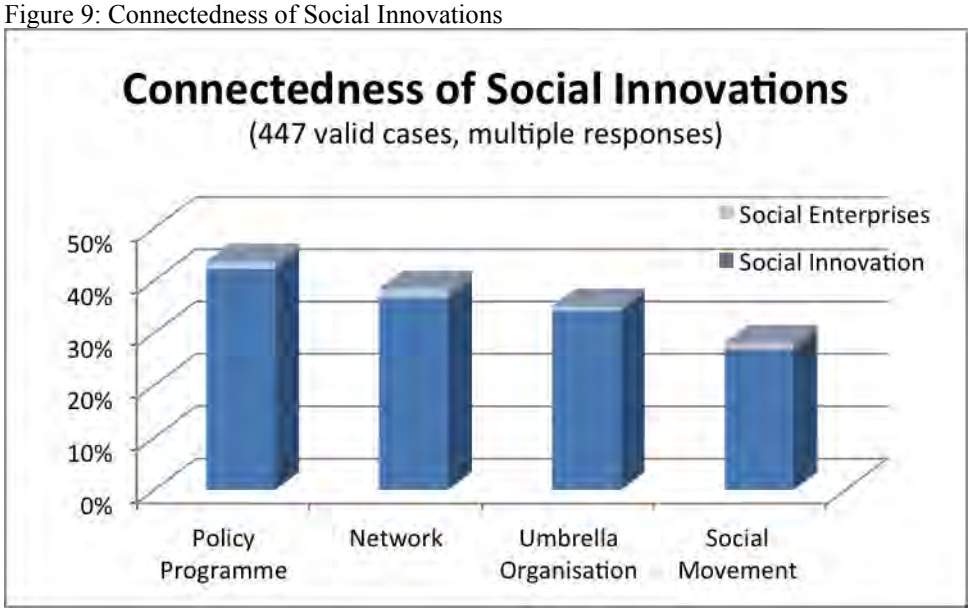
Societal engagement, empowerment and user involvement

As the partner constellations of the SI-DRIVE mapping show, cross-sector collaboration is crucial to overcome social demands and societal challenges, actively involving public, economic and civil society partners. Additionally, attention has to be paid to empowerment and user or beneficiary involvement within in the social innovation concept. This corresponds with the fact that empowerment is mentioned by about two of three initiatives as the most important cross-cutting theme (see figure 4) and the fact that almost half of the initiatives stated a direct user or beneficiary involvement (whereby the rates of involvement differ in the policy fields and world regions).

Social innovations aim at activating, fostering, and utilizing the innovation potential of the whole society, just to name user involvement, co-creation, open innovation, empowerment. Thereby we find various forms of user involvement within the mapping: from the development or improvement of the solution over providing feedback, suggestions and knowledge to the adaptation of the social innovation idea for personalized solution.

At the same time the concept of social innovation has to be integrated in and fostering societal engagement. Therefore, social initiatives are often related to networks, social movements, umbrella organizations, and policy programs. Comparing the social innovation initiatives with social enterprises, it becomes evident that there is a weaker connection of social enterprises with policy programs (in line with their market orientation) and umbrella organizations.

Figure 9: Connectedness of Social Innovations



Source: SI-DRIVE, 2016.

Conclusion: While cross-sector collaboration enhances social innovation ecosystems…

The first results of the global mapping of SI-DRIVE show that most of the initiatives are embedded in a social innovation ecosystem, developing new alliances and guaranteeing cross-sector fertilization. It can be concluded that constructive partnerships between the sectors are key factors in order to reap the full potential of social innovation. Social innovations are first and foremost ensemble performances, requiring interaction between many relevant actors.

Against this background, a systemic approach to social innovation focuses on the interfaces of the so far differentiated and largely separate self-referential societal sectors of state, business, civil society and academia, of their corresponding rationalities of action and regulation mechanisms and at the associated problems and problem-solving capacities (Howaldt, Domanski and Schwarz, 2015). With regard to the question of how these interfaces can be reconfigured in the sense of sustainability oriented governance, established steering and coordination patterns are complemented, extended and shaped by aspects like self-organization, cross-sector cooperation, networks, and new forms of knowledge production (Howaldt, Kopp and Schwarz, 2015). Associated processes of "cross-sector-fertilization" (Phills, Deiglmeier and Miller, 2008) and convergence of sectors (Austin et al., 2007) increasingly make possible "blended value creation" (Emerson, 2003).

Such collaborations are picked up by at least two different heuristic models, the quadruple helix (see Wallin, 2010) on the one hand, where government, industry, academia and civil society work together to co-create the future and drive specific structural changes, and the social innovation ecosystem (see Sgaragli, 2014) on the other hand, which also asks for interactions between the helix actors, adds the notion of systemic complexity and looks at both the serendipity and absorptive capacity of a system as a whole. Still, academic knowledge on social innovation ecosystems is very scarce and the concept remains fuzzy. It is one of the key tasks of social innovation research to work on the theoretical foundations of the concept and to investigate how social innovations are created, introduced into society, diffused and sustained.

Although still emerging as a scientific concept, the social innovation ecosystems approach has already helped to make more prominent the notion of environment for social innovations within the scientific debate. This is especially important regarding the question of how social innovations diffuse, how they are adopted, imitated or scaled. In this context, the idea of a social innovation ecosystem helps to overcome the actor-centred approach and the strong concentration on the social entrepreneur as the key agent of change. The view on the environment in which social innovations are diffused opens up the perspective on different dimensions, such as actors and governance or drivers and barriers. Such an environment with its

properties can be crucial for successful diffusion of social innovations.

The conceptual understanding of social innovation needs further development

At the same time, the mapping reveals an underdeveloped status of conceptualization and institutionalisation of social innovations. There is no shared understanding of social innovation (including a clear differentiation from other concepts such as social entrepreneurship or technology innovation) and no uptake/integration in a comprehensive (social) innovation policy. Policy field related documents of public authorities such as the European Commission, the United Nations, the OECD, the World Bank, etc. often even do not refer to social innovations (exceptions are Horizon 2020 documents as well as publications of other DGs). Up to now, only in a few countries as UK, Columbia, Germany, USA social innovation has been taken up by politics. In most of the countries there are no policy institutions with direct responsibility for Social Innovation. So one of the most important insights of the global mapping of SI-DRIVE is that *a social innovation friendly policy environment (especially mentioned by the initiatives with social enterprises) still has to be developed in Europe as well as globally*. A European (and global) social innovation policy which enables social innovations to overcome societal challenges in a cooperative manner between the actor groups and which is conducive to social change remains to be developed.

In many countries, the promotion of social innovation by the EU has served as a driver and opportunity for various actors to embrace new ways of working, access new funding streams, and promote change at a national level. But even though a lot has been done within the last years, there are still important steps to go in order to move social innovation from the margin to the mainstream of the political agenda.

In search for a differentiated understanding of the role of social entrepreneurs in the process of social innovation

Considering the complexity of innovation processes, we need to focus on the cross-sector dynamics of social innovation and the diversity of actors and their roles and functions within the innovation process (including their interaction in networks, etc.) on the one hand and the framework conditions including governance models, addressed societal needs and challenges, resources, capabilities and constraints on the other hand.[15]

The great challenge for contemporary innovation research lies in analysing its potential in the search for new social practices that enable us to secure the future and allow people to live "a richer and more fulfilled human life" (Rorty, 2008: 191). Recent years have seen increasing efforts to elaborate a sound theoretical understanding of such often complex social innovation processes and their relation to social change.

A sociological theory of innovation, in our view, must examine the multiple and manifold imitation streams and must decode the principles and laws they follow. It is only via social practice that the diverse inventions etc. make their way into society and thus become the object of acts of imitation. Social practice is a central component of a theory of transformative social change, in which the wide variety of everyday inventions constitute stimuli and incentives for reflecting on and possibly changing social practices.

Social innovation ecosystems were described as a theoretical approach and heuristic model especially for social innovation – an approach which is in line with our generic theory, but which needs further theoretical and empirical elaboration, e.g. regarding which governance structures support collaborative action for social innovation and which roles the state and research can play.

The observations made above point out increased attention still has to be paid to social innovation in order to develop the potential for new social practices. A new model for innovation policy is required on the different levels of society (local/regional/national/global) that expands its focus from social entrepreneurship to a comprehensive understanding of social innovations and systemic solutions and to a corresponding empowerment of actors, complementing the new conceptual understanding of social innovation with a consistent social policy. This would help to better unlock the potential of social innovation as a whole, including social entrepreneurship, and contribute to the development of new social practices and ultimately social change.

[15] In their analyses of historic social innovation cases McGowan and Westley emphasize that the "social innovation process is often the result of the interaction of agency and institutional dynamics" (McGowan and Westley 2015, 56). Under this perspective they introduce the roles of the *poet, designer* and *advocate in the social innovation process:* "The poet shapes or expresses the new idea or social phenomenon, the designer converts the phenomenon into an innovation (a policy agenda, a programme, a product, etc.) and the debater advocates either the innovation, the phenomenon, or both" (McGowan and Westley 2015, 56)

The results of the global mapping of SI-DRIVE underline that social entrepreneurship is a relevant but not a dominant part of a comprehensive social innovation approach. The important role of social entrepreneurship is supported by the fact that 42% of the initiatives consider the social economy or social enterprises a relevant cross-cutting issue (independent from the related practice or policy field). The special focus on social enterprises as partners of the mapped social innovation initiatives in SI-DRIVE on the one hand shows the common background and concept of both: We find the same heterogeneity in both entities and the sectors and policy fields addressed, cross-sectoral collaboration and user or beneficiary involvement as well as drivers and barriers do not show remarkable differences. On the other hand, social entrepreneurship is representing the more market related part of social innovation cooperating more often with for and not for profit organisations plus refunding themselves more often by economic return from own products or services and own partner contributions as well as using more often foundations and philanthropy capital instead of public funding.

A comprehensive perspective visualises the possibilities, but also the limits of the concept in its ambivalence, and relationships with other forms of social innovation. At the same time, it helps finding important information about infrastructural, political and qualification prerequisites for the concept's diffusion into the societal practice. In this sense, social entrepreneurship represents a specific form of social innovation, in line and with manifold interactions with other forms of social innovations.

If social entrepreneurs develop a better understanding of their specific role in the overall social innovation process and learn to deal with the collaborative dynamic of any social innovation social enterprises "have the potential to play centre stage rather than offer marginal contributions to global prosperity" (Shaw and de Bruin, 2013: 744).

According to our understanding of social entrepreneurship as an action and management strategy, which uses entrepreneurial principles in order to promote social innovations, we deal with a new form and resource to bundle societal forces by intervention of coordination forms, which so far have seemed incompatible (Vosse, 2009). From that point of view, social entrepreneurship is not a temporary (social) anti-movement against state and institutions failure, but rather a catalyst for an adjustment and "modernization" of existing governance structures. In light of the rising dysfunction in the processes of differentiation in society that is becoming apparent, social innovations are revealing their unique power particularly where different social (sub)rationales intersect.

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ISSN 2529-9824

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