

Social Innovation:

Concepts, research fields and international trends

Autoren: Jürgen Howaldt und Michael Schwarz

Auftragnehmer:

Sozialforschungsstelle Dortmund
ZWE der TU-Dortmund

Evinger Platz 17
D-44339 Dortmund
Tel. +49-(0)231-85 96-261
Fax +49-(0)231-85 96-100
Email: howaldt@sfs-dortmund.de

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Preface: Considering the social relevance of innovations

Innovations open up inroads to shape the future, not to predict the future. In studies *forecasting* the future we often find false prophecies rather than true ones. This does neither take us by surprise, nor will it obliterate the age-old attempt to *prognosticate the future*. Yet even carefully science-based analysis cannot include unknown features of the future that turn out to be most effectual. It is extremely improbable to predict in real terms unpredictable events with alterative impact on societal developments, i.e. changing history. For example: In 1984 Helmar Kruppⁱ published a very accurate study on living and working conditions in Germany anticipating the year 2010. Krupp makes some very precise estimations and argues in favour of realistic co-evolution of technology and society. Yet in spite of all merits of this analysis, of course it falls short of what changed life most since then: The emergence of the internet, and – in particular pertaining to Germany – the tumbling down of the Berlin Wall, with its formative and accelerating impact on forced globalisation. Slightly different, the term *foresight* represents a “softer” concept of dealing with ongoing and anticipated changes. It refers to a bundle of methods and techniques to critically reflect *potential ways of shaping the future*, and to identify the plausibility and likelihood of different developments.

In comparison *innovation* contributes to *moulding part of changes* that will become relevant in future. Any innovation provides a base camp to form new, tiny or strong branches of future changes at any given time with particular social, economic or technological status. *Innovations are deliberate interventions designed to initiate and establish future developments concerning technology, economics, and social practices.*

Currently the term “innovation”, most recently also notions of “social innovation” rank high on the agenda of business, political and scientific bodies. However, many innovations produce little impact, whereas only few innovations affect technology, economy or society on large scale – potent enough to induce measurable impact on emergent transitions. This applies to what usually is called innovation: New products and processes or novel qualities in organisation and marketing to secure and expand market shares, or to enter new markets respectivelyⁱⁱ. Most innovations represent rather modest progress – despite the noise sometimes made of new devices produced by industry and requested by consumers. Many developments just go a consequential step forward with no sensational features, yet they are in

some way superior to previous or competing devices, materials, products or processes (enough to find ways to market), and there are great numbers appearing in fast pace.

Substantially decisive innovations with major impact are fewer in numbers. Such innovations evolve from *breakthrough inventions*. In general these take longer to market penetration than incremental innovations: They meet more resistance and they require more complex adaptation to socio-technological systems, production or service sectors and economic structures, including chains and networks of production, sales and consumption. Established management cultures, relations of collaboration and competition as well as consumer behaviour and life styles may slow down the reception and adoption of breakthroughs and their transformation from the stage of invention to that of a successful innovation. Good examples of such breakthrough inventions with rather long inception phases are solar heaters, photovoltaic and other components to optimise home energy use and to increase home energy production. In contrast, internet, cell phones and other information technologies penetrate markets in shock-wave speed.

Obviously, it is not the novelty and successful operation of technologies alone turning inventions into innovations: The *preparedness of society* to adopt new solutions for needs and challenges comes into play. In addition the uptake of innovations requires more than purchasing power and disposable income, since money is only one factor among other resources to be mobilised and allocated. Social values, ideologies, institutions, power imbalance, other disparities, and – last but not least – *prevailing patterns of innovations* have an effect on the success of different kinds of innovation (“path dependency”). According to societal framework conditions specific types of innovations occur most likely in the wake of rare “basic innovations”,ⁱⁱⁱ of which only five are counted since in the beginning of the industrial age: Steam power and textiles, steel and railroads, chemistry and electric power, petro-chemicals and cars, and information and communication technologies. The latter one of these *long waves of economic cycles* favour numerous major and many more minor innovations in its realm, altogether easy going and dominant as long as no new cycle takes off to pave the way for other arrays of hitherto failed or unknown innovations^{iv}.

The rule of the great many gradual and, over time, large numbers of remarkable innovations instigated by few “basic innovations” (turning points in social change) applies to social innovations as well. Society develops and breeds social innovations in forms of new practices, institutions, “rites, techniques, customs, manners and mores”^v, plus technology and

technological innovations. Any of these varied innovations is socially relevant, and all are created and produced by societal actors from many walks of life, not only in science and business – even though these areas of human activity are most crucial for innovation on the one hand, yet also eminently dependent on innovation on the other hand.

Innovations are embedded in society, effecting its development and in need of scientific support. There are similarities yet also differences between social innovations concerning societal issues, and innovations based on technologies aiming at business purposes. To pinpoint social innovation, as the study presented here does, is essential because times and paradigms are changing. One of the key conclusions leads to the necessity of diversification of social sciences in research and facilitation of social innovations. Adequate adjustment of self organisation in social sciences is pertinent to enable deliberate relations with users of knowledge generated by social science (“trans-disciplinary research”). Even though there are different approaches, concepts and methods, such intentions resemble customary features of advanced research in natural science and economics concerning innovation in business and technology.

The current debate on social innovation necessitates a broader generic concept of innovation, in order to render possible the identification of similarities and differences between the existing and shifting variety of innovations taking place throughout society. Social innovations are distinct from technological innovations inasmuch intended purpose and objectives differ, notwithstanding outcomes (e.g. improving economic performance) may overlap. A notable affinity with significance in theory and practice alike is the fact that every innovation has an “expiry date”: As soon as a new technology or effective social practice becomes integrated in everyday life of the majority of people, groupings or institutions concerned, its specific character of novelty and innovativeness ceases. It has got its market share, it has been implemented to address challenges, resulting in more or less impact. In many cases new challenges appear, circumstances of using innovative products, processes and practices vary, thus calling for further efforts to create innovations and, as one of the rising future research topics in social sciences: Life cycle analysis of innovations ranging from new technologies, marketing and organisational innovation in business, on to social innovations in private, public and civil society sectors.

Josef Hochgerner, Leiter des Zentrums für soziale Innovation in Wien

ⁱ Krupp, Helmar, 1984: Werden wir's erleben? Ein technisch-wirtschaftliches Zukunftspanorama. In: Mitteilungen aus der Arbeitsmarkt- und Berufsforschung (MittAB), Vol. 17/1, pp. 5-18. IAB (Institut für Arbeitsmarkt- und Berufsforschung, Institute for Labour Research), Nuremberg.

ⁱⁱ OECD/EUROSTAT, ed., 2005: Oslo Manual. Guidelines for Collecting and Interpreting Innovation Data. OECD, Paris.

ⁱⁱⁱ Mensch, Gerhard, 1975: Das technologische Patt. Innovationen überwinden die Depression. Fischer, Frankfurt/M.

^{iv} Nefiodow, Leo, 2001: Der sechste Kondratieff. Wege zur Produktivität und Vollbeschäftigung im Zeitalter der Information. Rhein-Sieg Verlag, St. Augustin.

^v Kallen, Horace, 1949: Innovation. In: Encyclopedia of the Social Sciences, Vol. 8, p. 58.

Abstract

In light of the increasing importance of social innovation, this study looks at the theoretical concepts, areas of empirical research and observable trends in the field of social innovation. This trend study starts with an overview of the current situation and the perspectives of socio-scientific innovation research that have greatly contributed to the development and spread of an enlightened socio-scientific understanding of innovation. Against the backdrop of clear paradoxes and confusion in prevailing politics of innovation, the contours of a new innovation paradigm are becoming visible and causing social innovation to grow in importance. This is accompanied by an exploration of the question of what (new) roles social sciences can play in analyzing *and* shaping social innovation. The study looks at the future fields of research and research questions and explores the possible contribution that social innovation can make in working through global dilemmas.

At the same time, the theoretical concept of social innovation outlined in the study is a precondition for the development of an integrated theory of socio-technological innovation in which social innovation is more than a mere requirement, side effect and result of technical innovation. Only by taking into account the unique properties and specifics of social innovation is it possible to make the systemic connection and interdependence of social and technological innovation processes comprehensible.

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Social innovation: Concepts, research fields and international trends

JÜRGEN HOWALDT AND MICHAEL SCHWARZ

1. INTRODUCTION

Certainly since the publication of the oft-cited Meadows report on the state of humanity at the Club of Rome (Meadows 1972), if not earlier, there has been discussion on the limits of permanent and exponential growth in a confined system and the considerable role technological development has played in this context. Explicitly assuming a non-oppositional stance towards technology,¹ Meadows suggested that the use of technological measures did not resolve the world's central problems and instead tended to intensify them, that unforeseeable social side effects and new social problems were

¹ "Our intention is neither to brand technology as useless nor to demonize it" (Meadows 1972, p. 139). "We are just as vehemently opposed to an unthinking denial of the fruitful effects of technology as we are to an unthinking belief in them" (Ibid., p. 140).

generally associated with even very useful new technologies and that no technical answers existed whatsoever for the most significant problems in the modern world. For these, extensive "social changes", or rather "non-technological measures", were needed (Ibid., p. 140)².

This prompted a discussion regarding the necessity of a different way of life and a different economy, particularly in affluent industrial economies. Many governmental and nongovernmental organizations from around the world participated in this discussion in Rio de Janeiro at the 1992 UN Conference on Environment and Development. The key document that was adopted, Agenda 21, laid out an agenda for a departure from a purely technology-driven growth dynamic and also stated objectives for an alternative form of development that was ecologically, social and economically sustainable. The central issue lay in promoting a "targeted, fast and far-reaching," even "radical transformation in social perspectives, routines and interest constellations" (Lange 2008, p. 21). "The answer to social problems cannot be found in the paradigm of an industrial society; what we need are social innovations equal in caliber to prior technical innovations." (Danielmeyer³, quoted in Rößler 1998: n. pag.) "While technology and productivity alone can create the preconditions for resolving the problems confronting the entire world, they apparently are not sufficient to achieve the millennium objectives set at the UNO millennium summit in September 2000. The same applies for the Kyoto objectives for environmental and climate change. What is missing, and what will become more important in the 21st century, are fundamental social innovations" (ZSI 2008, p. 28). "Numerous small and large social sub-segments that influence not only the lives of individual people but also the development of society globally need the stimulus of social innovation" (Ibid.).

In this context, the term social innovation consciously extends beyond the term reform that focuses primarily on action undertaken by the state. The latter are components of

2 All quotations are own translations

3 Prof. H. G. Danielmeyer is a technical physicist, was the founding rector of the Technische Universität Hamburg-Harburg and worked on subjects including "Predicting the industrial society's development".

social innovations that can be seen on a political level as well as every other social arena where they are also increasingly called for and realized.

Even in reaction to the extensive fixation on technology in innovation policy that continues to this day, social innovations have been increasingly perceived and called for as an important subject in discourse in civil institutions since 2000. Problems have in part changed radically and intensified in conjunction with the drastic acceleration of change in the economy, society and culture, and awareness has clearly grown regarding the limited potential that technological innovations and established management and problem-solving routines have to resolve issues.

As a result, and in light of the vastly overlapping nature manifest in crises, the need for strategies for "recovery through innovation" (The Young Foundation 2009) with significantly broader scopes has been increasingly identified and articulated. Over the course of these developments, social innovations have been edging ever closer from the outer realms to the central focal point of attention. "Social innovation moves from the margins to the mainstream" (Ibid.). The further that society, the economy, culture, the natural environment and the realms of work and life are permeated with technical innovations and "reconfigured at such a fast pace as is currently the case" (ZSI 2008, p. 28) the more important social innovations become and the more public attention they elicit.⁴ They are not only becoming more necessary in the wake of the accelerated dynamics and penetration of change and the wide-reaching crisis in responding to the associated problems. This is the reason that the Vienna-based Zentrum für soziale Innovationen has undertaken a agenda for action⁵ to help "effectively anchor concepts for social innovation in public discourse and realize a growing number of effective social innovations in major sectors in society including the economy, education and politics" by

4 Publications including the business magazine brand *eins* have been covering this area since the beginning of 2006 under a series entitled social innovations. The 19 installments released thus far have explored a diverse array of topics including basic income, participatory society, integration, foundations, schools and universities, labor, tax reform, the welfare state, bartering, financial services and urban planning.

5 Entitled "Social Innovation 2015".

2015 and contribute to establishing "a level of importance that has previously been reserved for economically usable technical innovations" for them (Ibid., p. 30).

While the foundation of the Vienna-based Zentrum für soziale Innovation in 1990 or the Canadian inter-university Centre de recherche sur les innovations sociales (CRISES)⁶ in 1986 were still exceptional cases rather than the norm, the growing significance of social innovations has been reflected with increasing clarity in multiple respects since the beginning of the century, including the rising number of centers devoted to promoting social innovation as well as corresponding political initiatives: at Stanford University in the US (2000), Toronto Canada (2004), London (2005), Netherlands (2006), Australia (2008). Meanwhile a whole host of other research and consultancy institutes dedicated to special topics and initiatives directed towards social innovation now exist, such as the Soziale Innovationen GmbH (consultancy) founded in Dortmund in 1995, the Institut für soziale Innovationen founded in Berlin in 2004, the Institut für soziale Innovationen (focusing on consulting community, social and religious institutes) founded in Solingen in 2005 or the Genossenschaft self eG created in 2006. "The business of the Social Entrepreneurship & Leadership Foundation is social innovation". (<http://www.self-germany.de>)

At the start of 2009, the newly elected president of the United States, Barack Obama, announced the establishment of a new office for social innovation at the White House and allocated USD 50 million to a fund for social innovation in the 2010 budget. It was dedicated to socio-political priorities, namely education and health care as well as economic questions and problems. At nearly the same time, the European Commission issued recommendations on how social innovations could be fostered and expanded to a greater extent for the amended European social agenda. "Creativity and innovation in general and social innovation in particular are essential factors for fostering sustainable growth, securing jobs and increasing competitive abilities, especially in the midst of

⁶ For more on history, organization and missions see <http://www.crisis.uqam.ca/pages/en/>.

the economic and financial markets crisis" (Barroso 2009). The articulation of these sorts of messages can be seen as a key factor in increasing the importance of social innovation in terms of both (innovation) politics as well as public awareness.

With the transition from an industrial society to a knowledge and service economy, according to our thesis, an "innovation system paradigm shift" is taking place (Bullinger 2006, p. 14) that in turn is changing the relationship between technological and social innovation. Where innovation was previously directed at advancements in the natural sciences and mechanical engineering to create new products and processes, social innovation will gain importance in the future in conjunction with accelerating change (cf. Howaldt et al. 2008). However, this area has been virtually ignored as an independent phenomenon in socio-economic research on innovation, which has been predominantly fixated on the social preconditions, effects and processes relating to technical innovations (cf. among others Rammert 2010). Social innovation rarely appears as a specific and defined term with a clearly delineated scope but usually is used as a sort of descriptive metaphor in the context of social and technical change.

Against this background, this study presents theoretical concepts, empirical fields of research and observable trends in the area of social innovation. We begin with the perception that the topic has experienced a surge in the western world over the last 20 years yet has remained very unclear with regard to terminology, concept and content.⁷ A plethora of vastly diverging issues, subject matters and problem dimensions as well as expectations for resolving them are subsumed under the heading "social innovation" without making distinctions between its different social and economic meanings, the conditions governing its inception, its genesis and dissemination, and clearly demarcating it from other forms of innovation.

7 "The Guardian" alluded to this uncertainty in international discourse in society in its issue dated 11 August 2008 strikingly: "Social innovation is the new global obsession. It might be a nebulous idea but it has huge potential." "The language around social innovation easily slides into smoke and mirrors." (Roberts 2008)

This work starts with an overview of the current situation and the perspectives in innovation research in the social sciences that have greatly contributed to the development and spread of a clarified social science understanding of innovation. Against the backdrop of clear paradoxes and confusion in prevailing innovation policies, the contours of a new innovation paradigm are becoming visible and causing social innovation to grow in importance (chapter 2). This is followed by a trend study that begins with a review of concepts, topics and dimensions in the exploration of social innovation (chapter 3) before detailing applicable research fields with an international comparison (chapter 4). Special attention is paid to labor and management research. This is proceeded with an exploration of the question of what (new) roles the social sciences can play in analyzing *and* shaping social innovation (chapter 5). The next chapter (6) looks at future research fields and questions. In particular, it explores the possible contribution that social innovation can make in working through global dilemmas

This trend study thus provides an overview of the current state of national and international research on social innovation and discusses its contribution to obtaining and expanding the innovative capabilities of modern societies⁸ as well as resolving central problems facing society. At the same time, the theoretical concept of social innovation outlined in the study is a precondition for the development of an integrated theory of socio-technological innovation in which social innovation is more than a mere requirement, side effect and result of technical innovation. Only by taking into account the unique properties and specifics of social innovation is it possible to make the systemic connection and interdependence of social and technological innovation processes comprehensible.

8 The trend study also makes a contribution to the goal of the BMBF-sponsored project "International Monitoring" (IMO) to use continuous monitoring to expand upon how national and international opinion is shaped about the topic of innovation capability that sustains the competitive position of both Germany and Europe for the long term (cf. http://www.internationalmonitoring.com/de/projekt/ziele_und_nutzen.html, accessed 03.05.2010)

2. CURRENT STATUS AND PERSPECTIVES OF INTERNATIONAL INNOVATION RESEARCH: DYNAMICS AND UNCERTAINTIES IN A NEW INNOVATION PARADIGM

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) and the definition of innovation it 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 entrepreneurship. Beyond the day-to-day responsibilities of running a company, the entrepreneur as a personality is defined by virtue of this social role, by breaking from conventional paths in initiating a course of action (cf. Blättel-Mink 2006, p. 69). Schumpeter focuses not only on technical innovation, but also distinguishes between product-related, procedural and organizational innovations, using new resources, and tapping new markets. He also addresses the process of innovation. Moreover, he underscores the necessity of social innovation occurring in tandem in both the economic arena as well as in culture, politics and a society's way of life in order to guarantee the economic efficacy of technical innovations.

Following Schumpeter, innovations are increasingly reduced to technical innovations. The mention of social

innovation in literature after Schumpeter is rare and only marginal (cf. Moulaert et al. 2005, p. 1974). From an economics vantage point, involvement with innovation today is directed primarily at the issue of what the underlying conditions are that stymie and foster innovation, both within a company and outside of it, the necessary or deployable resources, organization of innovation management in terms systematizing innovation to replace or enhance the role of the entrepreneur (Blättel-Mink 2006, p. 81) as well as the economic impact and effects of innovation.

Innovation research in the social sciences is dedicated, by contrast, primarily to the relevance of the social in and for the process of innovation, looking at innovation from different perspectives and with different emphases. The central focus is on the social preconditions and influencing factors for (predominantly) technical 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, the organization of innovation in and between companies, the problem of planning and manageability and the uncertainty of the outcome given the unavoidable paradox "that innovation rests on conditions that cannot be fulfilled at the time the innovation takes place precisely because the very nature is to produce something new – conditions that really must be discovered, created and tested over the course of the innovation itself" (Sauer/Lang 1999, p. 14; cf. also Nowotny 2005). Innovation research in the social sciences is heavily shaped by a focus on the technical change and the genesis of technology as dependent on path and context; it has been given new momentum by the theory of reflexive modernization that emphasizes confronting the unintended repercussions and side effects of technical development under the conditions of the industrial society that have yet to be processed or treated (cf. Beck 1986, 1993, 1999). Controlling unintended repercussions requires an ongoing process of reflection that an increasing number of actors are taking part in and harbors a heightened degree of complexity and defies the development of linear techniques (cf. Rammert 1997; Blättel-Mink 2006, p. 124). New

intra-organizational and inter-organizational negotiation systems, regulatory structures, intermediary arrangements and governance structures, regarded as necessary social innovations (cf. Heidenreich 1997), are becoming the focus of attention. Or, to put it in the language of risk society theory, the existing "institutions are set in motion", "the circumstances of the modern era" become recognized as contingent, nebulous and mutable as a result of their "undesired self-questioning". "The cage of the modern era is opened" (Beck 1999, p. 319).

While innovation research in the social sciences has remained peripheral in Germany, its development has verged on explosive internationally over the last several decades. The focus of international innovation research in the social sciences has been directed at the complexity and systematic character of the process of innovation, asking the question "how innovations occur" and "how innovation differs" (cf. Fagerberg et al. 2005, p. 9). One significant distinguishing factor is the widening identification of the variety and heterogeneity of the actors, organizations and institutions that are involved in the process of innovation, the associated change in focus to networks and (national, regional, local) innovation systems, onto new forms of innovation, such as open innovation and open source (cf. Chesbrough 2003; Reichwald/Piller 2005), that are rooted in communication with experts in economics, education and politics and the active role of users or end consumers in the process of innovation. New subjects are coming to the fore, such as network management, new forms of knowledge production and logistics, processes involved in interactive, inter-organization and intra-organizational co-evolutionary learning as well as trans-disciplinary communication and cooperation relationships as fields of research (cf. Fagerberg et al. 2005).

While the idea of a clearly defined, linear process beginning with science and research and ending with marketable products and services may have been in the foreground into the 1980s, (cf. Hack 1988), research findings in the 1990s made it increasingly clear that innovations involve a complex social process in which the network-like interaction between multiple parties in the process of innovation plays a central role. Networks qualify as being superior to other coordination and

management mechanisms for the processes of innovation (cf. e.g. Rammert 1997) and seem to become an elementary building block of a new innovation paradigm (Bullinger 2006, p. 14 as well as Howaldt et al. 2008, p. 63).

Proceeding from a network model of innovation (Lundvall 1985, 1992), Freeman (1987) defined the national innovation system (NIS) as "a network of institutions in the private and public sector whose activities and interactions engender, modify and spread new technologies" (Freeman quoted in Schienstock/Hämäläinen 2001, p. 81)⁹. NIS has since become the categorical framework for analyzing innovations and the theoretical foundation for governmental innovation policy (Welsch 2005, p. 67). In light of the numerous open and contested questions, it has taken on a character that is akin to a heuristic concept rather than a certain scientific finding. NIS are systems of forming knowledge, spreading knowledge and the combination of knowledge, be it internal, implicit, or external, they are "structures for dealing with knowledge" (Ibid., 69). Knowledge is seen here as the most important input factor for innovation. In terms of a functional consideration of NIS, functions that are relevant in dealing with knowledge (across institutions) are in the foreground (generating, acquiring, spreading, regulating, applying, using knowledge). In institutional terms, the social system of agents and institutions relevant for innovation and their interaction are central.¹⁰ From a systemic viewpoint, NIS is a component in an economic and social system and spans multiple sub-systems, including a production system, a system of industrial relationships, the financial system, the labor market, the legal system, and education. NIS are not planned systematically, are highly historico-cultural, primarily shaped by a given economic and social system and therefore path dependent¹¹, and so can not be manipulated at will and can only be reconstructed ex post.

9 An overview of the state of research on the topic of innovation systems can be found in Blättel-Mink/Ebner 2009.

10 In a stricter sense they are: R&D departments of companies, technical schools, extra-university research institutes, technology infrastructure institutions, ministries; in a broader sense these include: education, the school system and professional development institutes, banks, industry associations.

11 The term introduced by David (1985) of path-dependency describes the state in which the developmental past of a country, organization, product,

The objective of systematic comparisons of different NIS (cf. Nelson 1993) that began in the 1980s to give clear recommendations for courses of action by conducting more policy research was never achieved. Quite to the contrary: "Greater research plagued the construct of national innovation systems more and more" (Krücken 2006, p. 6). Realistically, the variety of variables that needed to be taken into account make a clear assessment and evaluation of the overall system an impossibility. Furthermore, an assessment of the specific strengths and weaknesses of an NIS is subject to constant semantic flux, or rather is the result of a process of social construction. If, for example, the social partnership in the system of industrial relationships in Germany stood as a specific strength of the German innovation system into the 1990s, it stands today as a cause and the central problem for the lack of flexibility.

Numerous empirical investigations suggest that "Regional Governance Structures in a Globalized World" (Braczyk et al. 1998), that establish relationships with the spatial grouping of companies and forms of *regional cooperation* that have emerged in certain regions, and systematically use these entities and develop them to foster innovation are strategically better than the nation's underlying system (cf. e.g., Renn/Kastenholz 1996, p. 97). In an international comparative analysis of fourteen regions, Braczyk et al. (1998) identified three different coordination mechanisms of regional innovation systems: coordination via the market and informal relationships, network coordination and central coordination. In every case, the cooperation (quality) of heterogeneous actors and the existence of intermediary arrangements regarding the organization of processes of collective learning, knowledge transfer, the exchange of explicit and implicit knowledge and at regional and/or local level seem critical for success.

A critical objection raised against concepts like "innovation systems" and "triple helix"¹² is that they are not sufficiently

technology, etc., influences what developments are possible (cf. also Blättel-Mink 2006, p. 98).

12 With "triple helix" Etzkowitz (2002) – taking the USA for example – describes a tight linkage between the government, academia and the economy,

complex measured on the basis of the practical requirements associated with enabling high-caliber and complex interactive processes between companies, research and politics. "A central weakness in the work on national innovation systems lies in the lack of a theoretically tenable concept of institutions" (Werle 2005, p. 315). For the individual components of the institutional structure of a society and their relationships to one another must first be identified before statements can be made about their influence on the ability to innovate (cf. Hollingsworth 2000, p. 596 et seq.).

Insofar as innovation research proceeds from the assumption that innovations always originate before and in (institutional) contexts, it is precisely this context that is usually deemed the dominant influence in which the relevant control variables for the emergence of innovation or the dimensions and variables governing the ability to innovate are located and can be adjusted or changed, largely from the perspective of resources. Consequently a "one-sided paradigmatic definition of either the structural or individual factors of innovation generation" generally occurs (Vordank 2005, p. 34).

Innovation research in the social sciences has made great contributions to the development and spread of an enlightened sociological understanding of innovation. Its interpretative possibilities have become widely and "successfully" practical. "From deviation from the norm, from agent to system: this describes the central scientific discourses on innovation characterizing the last 100 years – always in reaction to the innovation that has actually taken place, seldom, as was the case with Schumpeter, on a proactive basis" (Blättel-Mink 2006, p. 12).

The central elements of a sociologically enlightened understanding of innovation could be summarized thus: the systematic and social character of innovation that can be reduced to technical and organizational innovation; aspects of complexity, risk and reflexion; incompatibility with planning and limited manageability; an increasing variety and heterogeneity of involved agents; non-linear trajectory as well

particularly industry, as a necessary precondition for successful economic growth.

as a high degree of context and interaction contingency. So too are technical and social innovations seen as closely intertwined and can only be completely captured in their interaction with one another (cf. Braun-Thürmann 2005, p. 27 et seq. and Rammert 1997, p. 3).

A new innovation paradigm

Against the background of the findings in innovation research in the social sciences and the clear emergence of paradoxes and confusion in prevailing innovation policies (Sauer/Lang 1999) that have been described, the question arises whether the technology-oriented innovation paradigm that has been shaped by the industrial society is not becoming increasingly less functional. In light of the weaknesses of the German innovation system that are becoming recognizable, Rammert calls for an "innovation in innovation" in terms of a "post-Schumpeterian innovation regime" (Rammert 2000, p. 2).

This sort of fundamental change process involving the entire institutional structure and the associated way of thinking and basic assumptions can be interpreted, in our opinion, in terms of the development of a new innovation paradigm¹³ (cf. also Bullinger 2006, p. 14). This approach opens up fundamentally new perspectives on recognized problems and thus simultaneously unlocks new possibilities for action. Especially in light of the basic confusions and paradoxes in innovation policy at present, this sort of interpretation of the current changes may open up new perspectives on innovation¹⁴.

International innovation research is also providing numerous indications of a fundamental shift in the innovation paradigm. In his introduction to the "Oxford Handbook of Innovation", which compiles the key development trajectories of international innovation research, Fagerberg describes the

13 Paradigm means in this sense, borrowing from Kuhn (1996, p. 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" (cf. Kuhn 1996, p. 26).

14 The authors of a current study relating to the OECD Committee for Industry, Innovation, and Entrepreneurship (CIIE) advance this thesis: "A new nature of innovation is emerging and reshaping public policy" (cf. FORA 2010).

variability of innovation as one of its central characteristics: "One of the striking facts about innovation is its variability over time and space. It seems, as Schumpeter (...) pointed out, to 'cluster' not only in certain sectors but also in certain areas and time periods." (2005, p. 14) Individual analyses each provide descriptions of specific innovation systems in different *economic sectors and industries* (Malerba 2005; Tunzelmann/Acha 2005). At the same time, a vast heterogeneity in innovation can be perceived in terms of the historical development of the process of innovation (Bruland/Mowery 2005, p. 374 et seq.).

The argument for the thesis of the emergence of a new innovation paradigm is supported by the work of Bruland and Mowery. The authors believe that fundamental changes occur in the structures of innovation systems in different time periods (2005, p. 374). These changes are described as an expression of different phases of the industrial revolution. When a new innovation system takes hold, it leads to far-reaching changes in the entire structure of the institution. "But both of these episodes highlight the importance of broad institutional change, rather than the 'strategic importance' of any single industry or technology" (Ibid., p. 375). As such the "leading industries" (Ibid., p. 374) have tremendous influence on the prevailing innovation modi¹⁵.

In the face of the social shift from an industrial society to a knowledge and service economy and the profound change this entails in the economic and social structures of modern society, there are many indications signaling a fundamental shift in the innovation paradigm that can be detected. New economic sectors and industries are increasingly determining the look of the economy and society and are changing the modes of

15 At the same time, they pose the question whether greater attention should be paid to the investigation of sectors that are not among the leading industries in order to truly capture innovation in a given era. In his criticism of the German government's extensive support of leading technologies in its research and innovation policies, Hirsch-Kreinsen also refers to the heterogeneous "industry-shaped" structures of the German innovation system. Vast swaths of sectors that are not research intensive and are very pertinent to economic and employment structures are ignored. As a result, important potential for innovation is neglected (cf. Hirsch-Kreinsen 2008, n. pag.). In the same vein, this applies to the wide areas of the service sector; its increasing importance for existing stimulus programs for economic development is not receiving enough attention (services impulse circle 2005).

production and innovation. As such new forms of production and innovation cultures on a global scale have developed in the IT industry that center on "partner management as a strategic function of the company" (Boes/Trinks 2007, p. 86). The new "leading industries" offer a good arena to investigate the central questions in modern innovation management for companies as well as the innovation policies in developed economies at a relatively early stage (cf. Ibid., as well as Howaldt/Beerheide 2010).

The opening of the innovation process to society is a key characteristic of these changes (cf. FORA 2010, p. 15 et seq.). Other companies, technical schools and research institutes are not the only relevant agents in the process of innovation. Citizens and customers no longer serve as suppliers for information about their needs (as in traditional innovation management); they make contributions to the process of developing new products to resolve problems. Terms and concepts such as "open innovation" (Chesbrough 2003; Reichwald/Piller 2005), customer integration (Jacobsen 2005; Dunkel/Rieder 2007) and networks (Kühlmann/Haas 2009; Howaldt et al. 2001) reflect individual aspects of this development. This enables the discovery of clear parallels to fundamental changes in the production system, particularly in the area of the production of services, that have been discussed in this area for several years (cf. Jacobsen 2005), and gives them new momentum via the technological possibilities of the internet (cf. Hanekop/Wittke 2008). At the same time, innovation – based on economic development – becomes a general social phenomenon that increasingly influences and permeates every aspect of life (cf. Rosa 2005).

Social innovation

With the development of a new innovation paradigm, so too a change in the subject matter of innovation occurs. At the heart of the industrial society innovation paradigm are technical innovations relating to products and processes that "are regarded as (almost) the only hope of societal development" (Gillwald 2000: n. pag.). Non-technical and "social innovations, however, although they exist constantly and widely in social

systems, are largely ignored as a topic and are a little-recognized phenomenon" (Ibid.), though this offers them no protection from enormous expectations of providing answers to problems given that issues such as massive unemployment, the erosion of the social security system or the intensification of ecological risks cannot be overcome without implementing social innovation. And in light of the current and extensive financial and economic crisis, it is becoming increasingly clear that social innovations, as they relate to extensive change in both the leading cultures that influence behavior and the social practices in the economy and consumption, determine "in what sort of world the next generation of the citizens of free societies will be living" (Dahrendorf 2009).

This is why it is all the more amazing that social innovation as an independent phenomenon has garnered so little attention in research funding and research practice (cf. Zapf 1989; Gillwald 2000). "Innovation-related thinking is asymmetrical. The emphasis is on technical innovation" (Rammert 1997, p. 3).

The sociologist Ogburn is among the few authors who make an explicit distinction between technical and social innovation. "The use of the term invention does not apply merely to technical inventions in our context, but instead comprises social inventions such as the League of Nations; it is also used to denote innovations in other cultural areas, such as the invention of a religious ritual or an alphabet. In the following we understand invention as referring to the combination or modification of previously existing and known and/or intangible cultural elements to create a new element" (1969, p. 56) But even Ogburn proceeds from the assumption of primarily technical inventions. For him, technical advancement is a driver of social development. He connects this with the thesis of a "cultural lag" (Ogburn 1957), namely a distance between a culture and technical developments that creates a pressure to "catch up" in the material facets of life. "His reports on trends for the US government that started appearing on a regular basis starting in 1936 (...) laid out the conceptual and institutional foundation for assessing the effects of technology and evaluating it" (Rammert 2008, p. 11). But only in the 1980s could German research in the social sciences develop a lasting interest in exploring innovation theory and the effects of

technology and research in the genesis of technology (cf. Häußling 2007, p. 381).

An initial conclusion can be made that phenomena of social change are consistently looked at in connection with technological innovation in techno-sociology and technical research in the prevailing paradigm of a social-technical system but not from the perspective of an independent type of innovation that can be demarcated from technical innovations. From the perspective of techno-sociology and its central field, this is not only possible but necessary. The conflation of innovation as a term becomes problematic when the concepts for innovation developed in techno-sociology and technical research are universalized into a comprehensive theory of innovation. This is inadequate in light of the declining functionality of the technology-oriented paradigm shaped by the industrial society.

While the changed and intensified social and economic problems identified in public discourse are increasingly prompting a call for extensive social innovation, the topic continues to remain a largely under-explored area in the social sciences as well as government innovation policies. "The field of social innovation remains relatively undeveloped" (Mulgan et al. 2007, p. 3).

3. SOCIAL INNOVATION: CONCEPTS, DIMENSIONS, TOPICS

3.1 What makes an innovation into a social innovation?

The substantive distinction between social and technical innovations can be found in their immaterial intangible structure. The innovation does not occur in the medium of technical artifact but at the level of social practice. A social innovation is new combination¹⁶ 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 is possible on the basis of established practices. 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. As with every other innovation, "new" does not necessarily mean "good" but in this case is "socially desirable" in an extensive and normative sense. According to the actors' practical rationale, social attributions for social innovations are generally uncertain.

In this sense, social innovation (borrowing from Crozier/Friedberg) 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,

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

rational and organizational skills" (Crozier/Friedberg 1993, p. 19)¹⁷. Social innovations, understood as innovations of social practices, are (examined in terms of their substantive aspect) an elementary part of sociology, and therefore – in contrast to technical innovations – can be not only analyzed, but also engendered and (co-)shaped; they are oriented toward social practice and require reflection on the social relationship structure.

In the face of the depth and development of change in modern societies and the rising dysfunction in established practice, social innovations are gaining greater importance, also in terms of economic factors, over technical innovations. They are not only necessary, but also can contribute proactively with regard to anticipated developments, such as demographic developments or the effects of climate change "to modify, or even transform, existing ways of life should it become necessary so to do" (Giddens 2009, p. 163; cf. also Hochgerner 2009a).

3.2 The specific subject matter of social innovations

Within his innovation typology, Brooks (1982) distinguishes between innovations that are almost purely technical (such as new materials), socio-technical innovations (such as transportation infrastructure) and social innovations. These are further classified and separated within the larger and unspecific definition. Brooks makes distinctions between the following types of social innovations: market innovations (such as leasing), management innovations (such as new working hour arrangements), political innovations (such as summit meetings) and institutional innovations (such as self-help groups). On the relationship between social and technical innovation, he states: "The supermarket has resulted in the invention of new types of check-out counters, stackable grocery carts, optical labeling of cans for automatic check-out, etc. McDonald's developed a

17 This process of the development of a new social practice is always about the interests of the given actors, and hence also about power and the distribution of social opportunities (cf. among others Dörre/Röttger 2003).

whole host of minor but important inventions such as a special scoop and bag of French fries. The thrust however, comes from the market, and the technology is usually incidental and rather mundane in technical terms though no less ingenious. The organizational invention comes first, and technical innovations are gradually introduced to improve it, rather than the reverse." (Brooks 1982, p. 10)

Hochgerner (2009) identifies social innovations in businesses, civil society, government and social milieus whose content relates to participation, procedural rules and behavior as a special type of innovation to be distinguished from technological and non-technological business innovations (products, processes, organization, marketing) (cf. OECD/Eurostat 2005). Just like technological innovations, they are integrated into innovation cultures or social-cultural formations of innovation, each with their own specific character, and influence these in turn; they are a "component of social change" but not identical to it. "Social innovations are new concepts and measures that are accepted by impacted social groups and are applied to overcome social challenges." (Hochgerner 2009) This may concern a new solution for a previously identified problem, a recognized solution that has not yet been applied in a certain spatial social context or a solution responding to problems arising in the wake of social change (cf. Ibid., and www.zsi.at).

The "working definition" from Kesselring and Leitner (2008, p. 28) states: "Social innovations are elements of social change that create new social facts, namely impacting the behavior of individual people or certain social groups in a recognizable way with an orientation towards recognized objects that are not primarily economically motivated." Its substance rests in a "targeted and new type of organization of social practice" (Ibid., p. 9). This subject matter and area of application that can be separated from technical innovation also marks a relevant unique characteristic regarding the role and potential of the social sciences: Social innovation is "to be regarded as the interface point between sociological reflection and social action because it requires reflection on societal problems and targeted action" (Ibid., p. 14 et seq.). This holds opportunities for the social sciences – which have hardly been tapped so far – to "be

visibly involved in public debate and practical societal contexts" and to act "as a supporter of social innovation" (Ibid., p. 15).

In the context of their literary research on the diffusion of innovation in health care-related service organizations, Greenhalgh et al. define innovation in this area as "a novel set of behaviors, routines, and ways of working that are directed at improving health outcomes, administrative efficiency, cost effectiveness or users' experience and that are implemented by planned and coordinated actions" (Greenhalgh et al. 2004, p. 1).

Collectively this definition and others (cf. also Zapf 1989; Lindhult 2008; Moulaert et al. 2005) indicate that social innovations are distinct from technical innovations and are an independent and different type of innovation. What is in essence innovation occurs on the level of social behavioral patterns, routines, practices and settings. This, and not on the level of material production, is where the decisive new combination of (social) factors and the pursuit of socially recognized goals with different means occurs where social innovation is concerned (Merton 1968). The innovation of social interaction, forms of transportation and behavioral patterns as the true subject matter, purpose and "decisive/competitive" factor demarcates social innovation from technical innovation.

In assessing their overview on the use of the concept of social innovation in different fields of research, Moulaert et. al. come to the conclusion: "In all above approaches, the definitions of social innovation are both analytical and normative. (...) We especially stress three dimensions, preferably occurring in interaction with each other.

- Satisfaction of human needs that are not currently satisfied, either because 'not yet' or because 'no longer' perceived as important by either the market or the state (...)
- Chances in social relations, especially with regard to governance, that enable the above satisfaction, but also increase the level of participation of all but especially deprived groups in society
- Increasing the socio-political capability and access to resources needed to enhance rights to satisfaction of human needs and participation (empowerment dimension)" (Moulaert et al. 2005, p. 1976).

This dual determination in scientific conceptions of social innovation as being equally analytical and normative prompts us to investigate the value aspect of social innovation.

3.3 The value aspect of social innovation

For many authors, the value aspect of a social innovation is one of its central characteristics. Borrowing from Zapf (1989), social innovations are components of social change that are "explicitly oriented towards socially esteemed goals" (Gillwald 2000, p. 7). They should accordingly be regarded as an appropriate way to confront social challenges (cf. *Ibid.*, p. 8).

Mulgan et al. (2007, p. 9) define "social innovations as the development and implementation of new ideas (products, services and models) to meet social needs." A distinction is made between social needs and "merely personal needs or demands". At the same time, the authors assert that social innovations become more important precisely in the areas where commercial and existing public sector organizations have failed. In this perspective the things they evidence include: an information and news portal based on the web 2.0 created by internet users in South Korea; an internet forum Australia established for youths to combat depression; a social company in London that produces a magazine commercially run by the homeless; an initiative that offers a broad range of services and activities related to the regular school day; a partnership between health care authorities and the Institute for the Deaf in England to distribute new digital hearing aids. Most of the social innovations evidenced distinguish themselves by virtue of their orientation towards social goals and needs and that they have also succeeded in establishing themselves commercially.

However, Kesselring/Leitner underscore that social innovation "by definition" should *not* be judged on the basis of economic criteria (2008, p. 21). Unlike technical innovations, they are based much more on values and are not oriented primarily towards economic utility (*Ibid.*, p. 22). And like Gillwald, they state that: "Only when an idea for resolving a social problem (in the sense of regulating social affairs) is

practiced and recognized can one speak of social innovation" (Ibid., p. 25).

In this understanding, "social" is not defined by being substantively differentiated from technical innovation in the analytical sense ("as relates to the relationships of the actors and their behavioral practices"). Instead the term "social" is really used in the normative sense of a concept aimed at the common good. However, we believe that attempting to provide a distinct definition of social innovation normatively is problematic. After all, even technical innovations can contribute to solving social needs and meeting social challenges. The history of the twentieth century and the development of a society based on mass consumption in industrialized nations offers countless examples for this. Satisfying individual and social needs via the consumption of industrially manufactured products (and thus the end product of technical innovations) with all of its repercussions and side effects can be described as a central characteristic of developed industrialized nations in the twentieth century (cf. König 2008).¹⁸

"The parameters and processes of mechanization comprise generalized social expectations, such as simplification, relief, replacement, enhancement or stabilization. Mechanization in the narrower sense means, without any other sense in mind – economic gain, military strength, etc. – that is, by deliberately renouncing meaning, to create methods and means of effectiveness and to increase their efficiency." (Rammert 2008, p. 4). The evaluation of the social impact of this "efficiency increase" is in turn dependent on the given perspectives of the involved or affected actors and takes place in social discourse. In this process, developments are subjected to a new evaluation against the backdrop of an expanded scale and socially desired goals (humanization, participation, civilization, sustainability). According to Groys (1992, p. 14), it is precisely the social reassessment of values that makes an innovation what it is. Regardless of its specific subject matter, material or intangible structure, innovation does not consist "in something appearing

18 A central thesis of our work is that this social form of production and consumption has reached its limits.

that was once hidden but in the revaluation of something that had long been seen and known." (Ibid.)

The commonly found normative link between social innovation and socially esteemed values overlooks the fact that different purposes and interests can indeed be pursued with a social innovation depending on the related utility and prevailing rationale and that these accordingly by no means have to be regarded as "good" per se in the sense of being socially desirable depending on interests and social attribution in order to be called *social* innovation, "there is no inherent goodness in social innovation" (Lindhult 2008, p. 44), their utility or effects can also be ambivalent depending on a point of view, just as with technical innovations. Expanded assessment criteria are also needed in evaluating social innovation and a social discussion process must be initiated enabling an exchange of different perspectives and rationales.¹⁹

3.4 Social innovation and social change

Unlike the reform term, social innovation is not limited to governmental action and engagement in the overarching social regulatory and institutional structure. "In this sense, reforms can be seen as components of social innovations, or namely those components that proceed from the political administrative system" (Gillwald 2000, p. 7). Social innovations in turn are a component of the processes of social change or societal modernization (cf. Ibid. 2000, p. 6) according to Ogburn (1937), they are the most important general cause of social change.

Social innovations are therefore (possible) prerequisites or components of social change, like technical innovations, but are not identical to it. Social change is that which precedes technical innovations from a socio-technological perspective, accompanies or follows them. In contrast, the actual strategic objective, subject matter and "business segment" of social innovation is shaping sub-processes and elements of social

¹⁹ In the BMBF program for innovative the capacity this means, for example, that innovation should be measured by the contribution it makes to social progress and economic success (cf. BMBF 2005).

change on the micro, meso and macro levels. In their diffusion, they may use technical artifacts or existing technologies (such as the internet) without losing their character as social innovations. It should be noted that social innovations also are also "accompanied by side effects in addition to targeted, intentional, planned and foreseeable effects and that unintentional, unplanned and unforeseeable repercussions are possible" (Gillwald 2000, p. 21).

The widely practiced terminological and/or functional connection between social change and social innovation is not only associated with an "overly high demand" on the latter (Kesselring/Leitner 2008). Above all, the relationship with social change should not be seen as the sole defining predicate of social innovation, but does plainly correlate in some respect or another. If however social innovations cannot sufficiently be separated in terms of substance and functionality from aspects social change and innovations in general or specific innovations, they are not compatible for use as an analytical term and as the subject of empirical research.²⁰ The material difference between social change and social innovation rests in the latter being associated with "planned and coordinated actions" (Greenhalgh et al. 2004, p. 1). While (unintentional) social change is described as "the process of change in the social structure of a society in its underlying institutions, cultural patterns, corresponding social actions and conscious awareness" (Zapf 2003, p. 427), social innovations are the result of intentional and goal-oriented action to establish new social practices in certain arenas (cf. Kesselring/Leitner 2008; Hochgerner 2009); or, to put it differently, of "collective actions in pursuit of a goal" to "rearrange how things are accomplished" or permanently establish a new "default practice" by "user acceptance" (Gerber 2006, p. 12 et seq.). The "systemization of trend-setting innovations" (Ibid., p. 5) as well as "path-enhancing social changes" (Ibid., p. 13) is, however, an extremely difficult process with many requirements (Ibid., p. 5).

²⁰ For more on the diversity of a "society's innovations" and the necessity of a correlated comprehensive innovation concept, see also Rammert 2010.

3.5 The diffusion of social innovation

With regard to their invention, development and spread, social innovations are clearly distinct from technical innovations. Due to their specific process and product dimensions (cf. Moulaert et al. 2005, p. 1972), social innovations generally arise outside the realms of corporate and academic research divisions. They "do not admittedly come primarily from science; transdisciplinary concepts from science, research and innovation (...) can however play a large supporting role" (ZSI 2008, p. 28).²¹ If the new social practices involve the product dimension instead of technical artifacts, the process dimension of social innovations concerns the "social construction of new realities", the creation and structuring of institutions as well as behavioral change (Hoffmann-Riem 2008, p. 591 et seq.) and thus the empowerment of actors in a specific collective to have the necessary cognitive, relational and organizational skills (Crozier/Friedberg 1993, p. 19). Accordingly, market use and market-induced incentives are not relevant for social innovations. Their genesis and diffusion really occurs primarily through the medium of "living experiences" and change-oriented "capacity-building" (Moulaert et al. 2005, p. 1972).

It applies for every invention that these can only be an innovation when they have achieved a notable and comprehensible level of dissemination. Technical innovations are described as such by virtue of their market success. The invention of the electrical engine for cars, for example, has been around as long as the combustion engine that has established itself largely without rival on the market over decades. Only with the entry of the electric motor in production vehicle manufacturing has it become an innovative engine technology.

²¹ In this sense, Volker Hauff recently provided a reminder regarding sustainable development and regaining a leading role for science. "Science", said former Minister for Research and Technology, "[is] no longer the driver" of sustainability. Though it does have "the best chances" to regain this position. In Hauff's view, science is practically predestined for it. "Sustainability has a lot to do with science," Hauff said, for a central function of science is "to identify consequences". Sustainability is thereby a "crisis term" that reflects knowledge and action and simultaneously represents "dynamics and the future". (Rat für Nachhaltige Entwicklung 2010)

For social inventions, it can be said that these only become social innovations "when introduced into a new setting" (Conger 2003), when they are widely accepted and used and so become practically effective as a "successful introduction of an innovation in a social system" (Gerber 2006, p. 13). "When in the process of the implementation and dissemination of a social idea it becomes a social innovation, it contributes to overcoming concrete problems and satisfying existing needs in a society" (ZSI 2008, p. 7). It can also shape new and marketable services or service concepts, for example. The decisive criterion in a social invention becoming a social innovation is its institutionalization or its transformation into a social fact through planned and coordinated actions, "active dissemination", or the successful implementation and dissemination of a new social fact or social state of affairs (Durkheim 1984) occurring through unplanned diffusion (Greenhalgh et al. 2004).²² Over the course of the discussion process that, in the case of both technical and social innovations typically undergoes multiple distinct phases, from agenda setting to matching, redefining, clarifying and routinizing (cf. Rogers 2003) every innovation is transformed in a context-specific manner.

In the case of social innovation, social groups and/or actors take on more of the role that market plays for technical innovations.²³ "The 'social acceptance' of an innovation leads to its spread, institutionalization and ultimately to the loss of its character of being something new." "The diffusion, acceptance

22 "Diffusion, in which the spread of innovation is unplanned, and active dissemination, in which the spread is planned, formal, etc." (Greenhalgh et al. 2004, p. 15).

23 In their study "In and out of sync. The challenge of growing social innovations", Mulgan et al. investigated the conditions for successful diffusions of social innovations and used this as the basis for their recommendations on what action should be taken. "There are frequently strong pulls from politics, public agencies, civil societies and the public for specific social innovations, and strong pushes from people with creative ideas. However there is a striking absence of institutions that link the two. (...) Their weakness makes it difficult for promising social innovations to get through periods of difficulty and underperformance that characterise even the most successful ideas." (Mulgan 2007, p. 5) In this respect, organizations are necessary actors in the diffusion of social innovation for the authors (cf. Ibid., p. 9).

and adaptation of social innovations by definition do not occur in individual environments but always in socially formed environments" or figurations (Hochgerner 2009). The institutionalization of social innovations "cannot be [achieved] by a societal agent acting alone" (Gerber 2006, p. 12), but requires its diffusion or dissemination which in turn are rooted in the evaluation and acceptance of the effects of the new social practice by target groups and those affected. In this regard, social innovations are much more context-dependent and more specific than technology in type. As they can be neither patented nor copy written, they must be considerably more attuned to the specific social context or field and gain social acceptance (cf. Hoffmann-Riem 2008, p. 604). The diffusion chances of social innovation are usually the greatest where established institutions are not active or are only marginally active, failing with regard to solving a certain problem, including problems in the areas of domestic upkeep, environmental awareness in behavior, sustainable consumption, active aging, socially responsible business.

In this sense they, as Kesselring and Leitner (2008) claim, – just like technical innovations – cannot be initially evaluated by criteria for economic success. A social innovation is initially nothing other than an intended change in social practices that in some way or another contribute to overcoming concrete social problems and/or to satisfying the needs of specific societal actors. Only through being embedded in a specific social context do the other assessment criteria come into play that often decide whether a social invention becomes a social innovation. These vary naturally with the tangential societal function systems (such as politics, law, science and the economy), subject areas (social security, family, education, etc.) as well as substantive reference areas (sustainable development environmental protection, gender mainstreaming, etc.) (cf. Hoffmann-Riem 2008, p. 592 and 596 et seq.).

Social inventions (in contrast to technological) can have different yet usually closely linked paths of diffusion and/or dissemination. They can assume their form and be disseminated via the market (such as new services, business models, logistics and application concepts) as well as technological infrastructure ("web-based social networking"),

social networking and social movements (gender mainstreaming), via governmental guidelines and support, via intermediary and self-organized institutions such as foundations, in inter and intra organizational processes, via the affect of charismatic individuals or social entrepreneurs (Mumford 2002; Illouz 2008; Dees 2007), through "living experiences" and a diverse array of forms of communication and cooperation as well as change-oriented "capacity-building" (Moulaert et al. 2005, p. 1972). In the process of diffusion, social innovations often come into conflict with prior practices and routines through their "creative destruction" (Schumpeter).

Decisive for successful diffusion, namely the process through which the social ideas and inventions spread through existing communication paths in a social system, is lastly their compatibility with the practical rationale in certain fields and their "utility" in terms of their (future) adopters. This process occurs outside the controlling mechanism of the market analogously to the adoption rate used in marketing research that tracks the market introduction and penetration of a product. The "early adopters", the opinion leaders for the innovation-ready mainstream, follow the handful of "innovators" who believe and are willing to experiment and assume risk. The "late majority" that is reluctant with regard to the innovation and finally the group of conservative "stragglers" then follow. This marks the completion of the diffusion process and the innovation has taken hold. With regard to both the diffusion process of technical material innovations and institutional and social innovations, network relationships play a decisive role (cf. Okruch 1999; Valente 1994).

In connection with the transformation from an industrial society to a knowledge and service economy and the associated rise in the market relevance of the new service products as well as the increasing degree of connection between social and technological innovations following the developments surrounding "web 2.0", diffusion as regards market introduction and penetration is gaining in significance.

Even if diffusion does not concern market-induced incentives (exclusively), the affiliated new forms of cooperation and communication can always be on the path to "being

integrated into the process of marketing", such as selling successfully implemented platforms and their subsequent operation by commercially oriented companies (Hoffmann-Riem 2008, p. 592) or through processes of "interactive value creation" (Reichwald/Piller 2006).

4. SOCIAL INNOVATION AS RESEARCH TOPIC AND SUBJECT MATTER

In her overview of the concepts of social innovation, Gillwald referred to the diversity of the ways and areas in which it manifests itself (Gillwald 2000, p. 5). She categorized selected examples of social innovations into three large functional distinctions, namely civil society, the economy and the state. For Gillwald, social innovations in the area of civil society include the increasing significance of non-marital partnerships or the environmental movement. In the economy category, she included the introduction of the production line, quality management and fast food chains. State undertakings comprise the introduction of social security and the regional reform instituted in Germany in the 1970s (Gillwald 2000, p. 3 et seq.).

Kesselring and Leitner also propose relating social innovation more explicitly to a concrete social context, as found in Zapf (1989) (cf. Kesselring/Leitner 2008, p. 21). Their suggested possible application areas of social innovation in their work included the divisions services, politics, life styles (cf. *Ibid.*, p. 10).

With an eye to the international debate, chapter 4.1 outlines the application fields where more recent empirical research on social innovation is concentrated. The connection between service and social innovations, which was initially marginalized but has become more important, is then explored in greater detail (4.2) before proceeding to a depiction of the pronounced surge in the discussion on the topic in the German social sciences propelled by the discourse concerning strategies for sustainable development in the last several years (4.3).

4.1 Research subjects in social innovation in the international debate

The first research area approaches are crystallizing in the international debate to treat social innovation as a separate type of innovation and make it more accessible as the subject of empirical investigations. Moulaert et al. (2005, p. 1973 et seq.) identified four research fields in which the concept of social innovation is increasingly becoming the subject of research in the social sciences: management and organizational research, in investigations relating to competition and social responsibility, in research on creativity and in connection with the processes of local and regional development.

(1) In *management and organizational research* in the 1990s "emphasis is put on the role of 'improvements' in social capital which can subsequently lead to better-working (more effective or efficient) organizations in the economy and thereby generate positive effects in terms of social innovation across the sector." The authors regard studies on social innovation in the non-profit sector (see, for example, the Stanford Social Innovation Review, <http://www.ssireview.org/>) as an interesting spin-off. In this research field, there a lot of connections that can be made in the long tradition of *labor research* in Germany. The topic of social innovation has implicitly been playing an important role for many years. While humanizing work, and subsequently the social contract aspect shaping technology, was the focus of research in the 1970s, the issue of the innovative capacity of a society or company has been the center of attention since the early 1990s.²⁴ The term innovative capacity is multifaceted and has many reference points. When the term innovative capacity is used, it usually refers to the social and institutional prerequisites for successful (usually technological) innovations. While the debate about regional and national innovation systems has predominantly centered around the structural, political and institutional prerequisites for innovative capacity on a national and regional level, management and work-related

24 Development is expressed in the sequence of central funding programs from "humanizing work", "work and technology" to the program "innovative work design and the future of labor".

aspects of innovative capacity are the focus in the program "Working – Learning – Developing Skills – Potential for Innovation in a Modern Working Environment". The terms organization, qualification, technology, and health care are of central importance.

It can be ascertained that labor research was guided by the idea of an all-encompassing conception of innovation at a very early stage. Specifically in labor research's analysis of the complex inter-relations between social and technological innovation processes in companies, it championed a comprehensive understanding of innovation in its field.²⁵ It highlighted the social and "human side of innovation" and emphasized the great importance of human labor in innovation. The dream of a factory devoid of humans that dominated many discussions through the end of the 1980s has largely disappeared (Schmauder 2007, p. 22). Successful innovation processes are no longer first and foremost the result of action undertaken by an individual within a corporation, but instead tend to be "collective achievements" (Volkholz 2007, p. 48).

The emphasis on the social preconditions of innovation processes in a company and networks as well as the focus on labor as a central resource make it possible to list connection points to international organization research (cf. Moldaschl 2006).²⁶ Precisely with the example of labor and management-related change processes in companies can the consequences and significance of the concept of social innovation prove itself in successfully shaping these processes (cf. Kesselring/Leitner 2008; Howaldt et al. 2007). They require deep penetration of value creation and innovation processes to the levels of labor organization, communication and cooperation structures, corporate culture and management, demands for skills and a well-considered use of technology. It no longer makes sense to

25 Cf. also articles in Ludwig et al. 2007, Streich/Wahl 2007 and Gatermann/Fleck 2010 that present current findings in labor research.

26 With regard to labor and management-related innovation research, important connection points arise in international management research and its shift towards organization capacities, skills and resources. Terms such as "absorptive capacity" (Cohen/Levinthal 1990), "dynamic capabilities" (Teece et al. 1997), "strategic change capabilities" (Pettigrew/Whipp 1993) describe central concepts of this research direction. Moldaschl 2006 and Beinholcker/Bertheau 2007 provide a good overview of this debate and its internal distinctions.

split functionalities and work responsibilities into hierarchical patterns of management (central) and execution (peripheral), but they are to be seen as a dual unit that reorganizes itself in specific combinations of innovative responsibilities and day-to-day tasks (cf. Wohland/Wiemeyer 2006). This opens up an investigation direction that serves as the basis for future demands and skills for management as well as "simple" employees in innovation, not only in terms of an organizational interior structure, but also in incorporating interactions with external specialists. Putting new innovation management into effect and the resulting changes and adjustments in companies signify a far-reaching social innovation (cf. Howaldt/Beerheide 2010).

A cross-research perspective arises in conjunction with current developments in the area of management research at the junction between new technological developments and changed management concepts. Research work on knowledge management (Howaldt 2010), "open innovation" (Piller 2004) or "Company 2.0" examines the development of new management concepts in connection with web 2.0 technologies (cf. Tapscott/Williams 2009; Klotz 2008; Howaldt/Beerheide 2010 and Pelka/Kaletka 2010). "A trend-setting social innovation of global proportions" emerges from the associated "interactive value creation" (Hoffmann-Riem 2008, p. 602). On the one hand, social networks and communities are recognized as the drivers behind the development (cf. Schenk 2008, p. 28). On the other hand, the new technological possibilities change well-established communications routines on every social level, and with wide-reaching social consequences. In this respect it is not surprising that the authors of the study "Future and future ability of German information and communication technology" emphasize: "The positive drivers and levers supporting further diffusion of internet usage in Germany can be found first and foremost in the area of education. (...) Here corresponding financial, infrastructural and especially didactic tools need to be made available across Germany in a uniform manner" (Münchner Kreis et al. 2008, p. 12).

(2) A second research area identified by Moulaert et al. presents interdisciplinary research concepts that, almost overlapping, examine the connection of "*Business success and*

social/environmental progress". The discussion surrounding the social economy and its connection to the market economy is of particular importance in line of research (Moulaert et al. 2005, p. 1974). Important reference points on the European level also include the debate on corporate social responsibility (CSR). From a cultural perspective, attention is paid to the relationship between skills and social responsibility (cf. Antoni-Komar/Pfriem 2009) posing the question: What skills do economic actors have for social development and the implementation of social innovations for an independent responsible examination of certain social problems and the associated approaches to resolve them, for perception, for reflection and reinterpretation of entrenched routines and the development of creative products? Relatedly, the question arises how these skills can be developed and enhanced.

The debate concerning *local and regional governance* (cf. Holtkamp 2007; Fürst 2007) proceeds from the point of promoting developments on a local and regional level with the help of more flexible and innovative ways to find solutions for the benefit of the greater good. The heart of this comprises network-like forms of social self-direction with actors from politics, administration, the economy and civil society, the learning processes and the generation and offering of knowledge for community-related problem solving or furthering social innovations.

(3) A third line of research related to *creativity research* examines social innovation that, like the core of the Schumpeterian understanding of innovation²⁷ – relates to the impact of charismatic individuals (cf. for example Mumford (2002) in his studies on Benjamin Franklin).

(4) The fourth and final line of research described by the authors is devoted to *local and regional development projects*. In Europe, research on the topic of social innovation has been being conducted from a regional perspective since the end of the 1980s, particularly by Louis Laville and Frank Moulaert. The ideas were seized upon in Canada, particularly by CRISES and have since lead to a large number of research projects.

²⁷ "The process is (...) generally that the ideas coming from strong personalities are seized upon and enacted due to their influence" (Schumpeter 1912/2006, p. 543).

Another publication, entitled "Social Innovation, the Social Economy and World Economic Development" (Harrisson et al. 2009), that presents and summarizes the results of a RLDLW conference headed up by CRISES in Montreal in 2008 also focuses on the junction between social economics and regional development. "Social economy has become one of the most dynamic sectors of the world economy. There are some 800 million people active within it on all continents." (Széll 2009, p. 1) The event organizers assume that "the concept of social innovation has been rapidly thrown out of anonymity over the last twenty years in Western Societies. Indeed it started from rare use for the designation of new trends with society to a common application of a new social phenomenon. Its sources are numerous and various. Social Innovation has spread out through wide-ranging organizations and associations in communities, territories and societies" (Harrisson et al. 2009, p. 7). The career of the concept is regarded as being a reaction to growing social economic crisis and the problems of the welfare states, making new social arrangement necessary (cf. Ibid., p. 12). "Civil society takes the lead through economic and social initiatives. Social innovations result from a strain in the institutions and systems that support the development of individuals and communities" (Ibid.). It is precisely this increased importance that makes work on the concept of social innovation an important task for the future. "Accordingly it acquires broadened significations that need some new interpretations. But what is 'social innovation' all about?" (Ibid., p. 7). Organizations consciously assume a global perspective and purposefully incorporate development trends in emerging nations into the conceptual discussion: "(...) social innovations have huge impacts on national and regional economies as their sources come from the citizen living in specific locations. Many initiatives presented in this volume are a social response by civil society to poverty, precarious employment, job losses, long-term unemployment, delocalization and de-industrialization. The economic dimension of social innovation and social economy is hard hitting. The latter is also connected with new issues in the economic development such as renewable energy and microfinance" (Harrisson et al. 2009, p. 15 et seq.). In the

authors' view, social values are a major driving force of social innovation (Ibid., p. 11).

Against the background of the experiences documented and the articles collected here, the issue of the spread and financing of social innovations proves to be a central problem. The research work of Mulgan et al. (2007) under NESTA (National Endowment for Science, Technology and the Arts) examines the specific conditions for the diffusion and dissemination of social innovations. They come to the conclusion that social innovations also require professional innovation management. Social innovations generally spread not merely through "lifestyle choices" (Ibid., p. 9) nor do they diffuse in a controlled way. Instead, organizations tend to play a decisive role in the dissemination of social innovation. The authors develop an action guideline based on their empirical case studies regarding the professionalization of the work of social innovators and investors (cf. Ibid., p. 25).

4.2 Social innovation in service research

For more than ten years, the Ministry for Education and Research (Bundesministerium für Bildung und Forschung, or BMBF) has been funding service research and service development. In doing so, it has assumed a pioneering role in international development. The BMBF laid a cornerstone for the extensive development and promotion of services with its 1995 initiative "Services for the 21st Century". "The impetus for this expansion in research funding was the discussion about the "German service desert" and the finding that there were "service gaps" in Germany in comparison with other leading economies. What was even more important was the conviction that the service economy still harbors a high degree of innovative capacity and untapped innovation potential, which makes it a driver for growth and employment in a dynamic economy" (cf. <http://pt-ad.pt-dlr.de/de/707.php>, accessed 03.05.2010). Targeted research and development funding in strategically significant areas for action must make a contribution to a

deeper understanding of the specific conditions of the service sector to unlock the "service" factor of innovation.²⁸

The topic of social innovation in service research is also increasingly gaining in importance. However it is still debated whether the specific character of increasingly important service innovations with a stronger focus on social innovations can be adequately captured. Bienzeisler et al. are critical of an independent analysis of social innovations in service research with reference to the systematic character of innovations (cf. Bienzeisler et al. 2010, p. 12). Simply because innovations in a cooperative service system can "hardly be precisely subdivided into technological social innovations" (Ibid., p. 250) does not, however, rule out an analytical differentiation between technological and social innovations. To the contrary, these represent, as described above, the first prerequisite for creating a comprehensive understanding of innovation (cf. also Rammert 2010). This is all the more important, Bienzeisler et al. concur, "to present the relationship between technological and social innovation today in a new form" (Bienzeisler et al. 2010, p. 250). These changes and the associated development of cooperative service systems also present "challenges to service research because the focus on form and optimization of a clearly distinguishable customer-provider situation shifts into the distributed interaction and communication processes in the service system" (Ibid.).

Even today there are numerous examples of social innovations that can be named in the area of services that are similarly incorporated in economic marketing processes as technical innovations. Gillwald (2000) cites fast food chains as an example in her examination.²⁹ A whole host of other instances for the economic significance of social innovation can also be found in the interim report of the service impulse circle (2005). Greenhalgh et al. (2004) provide a systematic overview of the state of scientific discussion on innovation in the area of

28 Over the course of extensive research work, a series of high caliber publications came into existence (cf. <http://pt-ad.pt-dlr.de/de/119.php>, accessed 03.05.2010).

29 "The major innovation of McDonald's lay in the technically undemanding combination of ready made food, self-service and marketing, and yet this fast food company changed the world" (Fischermann/Heuser 2009).

health care-related services. They define service innovations in this context "as a novel set of behaviors, routines, and ways of working that are directed at improving health outcomes, administrative efficiency, cost effectiveness or user's experience and that are implemented by planned and coordinated action" (Greenhalgh et al. 2004, p. 1).

Heinze and Naegele (2010) work in current trends in the area of social services with an expanded understanding of innovation in which social innovations have their own value. Their central thesis states: "The growing importance of the service sector and the social services in our context demand an expanding meaning of the term innovation to include the reconfiguration of social arrangements." As such, the authors assume that social innovations "are continuing to gain importance not only in the field of solving social problems but also from the perspective of the whole society". A crucial factor for success for social innovation here is the emergence of innovation networks "in which the different groups of actors – focused on one subject (such as the integrated logistics discussed here) – strike out new paths in social change in an interactive process." Furthermore, social innovations will take hold when "new areas of growth for the economy and (non-precarious) employment can be created in *socially useful* areas" (Heinze/Naegele 2010, p. 298).

With regard to users, Jacobsen and Jostmeier (2010) define service innovations as a "new option for acting" (p. 220). In an understanding of social innovation with this focus, which can also be "related to commercial services where the actioning of corresponding service innovations is not based companies broadly and unidirectionally reaching into the users' environments", the authors see "new possibilities to better understand the process of tertiarization and processes of service innovation" (Jacobsen/Jostmeier 2010, p. 232).

The growing economic importance of the service sector, just like the growth of the social economy, could also contribute to the dissolution of what may be the primary cause for the shadow existence of social innovations in comparison to technical developments in the natural sciences. Braun-Thürmann's asserted that social innovations can "hardly realize economic gain which in turn leads to them to tend to stay in the periphery of public and political interest in a society that often

describes itself in categories of economic success or failure" (2005, p. 25), and this could soon be a thing of the past. With its mounting importance in expanding the economic production capabilities of companies and regions and their potential to "move from a responsive filling of the gaps left by the private market, to generate an economic dynamic of it's own" (Murray et al. 2008, p. 9), the interest in social innovation will rise significantly in the coming years.

If technical innovations as new products represent the central aim of the innovation process in the area of the manufacturing industry and process innovations are a means to more efficiently produce these products, then social innovations are the very new "products" in the service sector and are therefore the aim of the innovation process. In this respect production and consumption, particularly of services related to people but also of those relating to companies tend to occur at the same time (uno-actu principle) and the corresponding degree of consumer integration, their (changed) living conditions, behaviors, norms and values is higher than in the production of material goods, social and service innovation are closely intertwined with one another. This is especially apparent in the establishment of new use routines and the changed behavioral patterns associated with it as well as the new service products (cf. Hirschel et al. 2001; Konrad/Nill 2001; Fichter 2010). These types of complex system innovations and transformation processes require, and at the same time are, social innovations and the intelligent use of new technologies (cf. Bierter 2001, p. 11).

4.3 Social innovation and sustainable development

In connection with what has ceased to be seriously contested directional shift to sustainable development, recognition is taking hold that the issue is a cultural or societal challenge in the sense that it cannot be successfully overcome theoretically by simple employing methods from the natural sciences, nor practically through the use of new technologies (cf. Pfriem 2006). Instead social structures and active practices, "nuanced

change in social environmental practice" (Leggewie/Welzer 2009, p. 203) are central in the search for possible solutions. Hence this centrally concerns the ability of societies to think long-term, be willing to reevaluate central values and seriously revise their own life styles (Diamond 2008, p. 646 et seq.).

In addition to the thesis of the necessity of extensive cultural change, attention in the sustainability discourse in the social sciences and multidisciplinary fields has increasingly shifted to necessary social innovations in the areas of

- governance structures (e.g., Heidenreich 1997; Newig et al. 2008), politics (e.g., Lange 2008; Giddens 2009), regulation (cf. Bauriedl/Wissen 2002), institutions (e.g., Minsch et al. 1998; Voß et al. 2002),
- the economy and labor (cf. Linne/Schwarz 2003; Burschel et al. 2004; BMBF 2002; DIW et al. 2000),
- consumer behavior, the style and level of consumption (e.g., Fichter et al. 2006),
- use regimes and systems and the associated user-oriented and efficient service and complex system innovations (e.g., Konrad/Nill 2001; Kiper/Schütte 1998; Fichter 2009).

The term sustainable development necessitates a targeted, fast and far-reaching change "of consumption habits in industry, the state, trade and individuals" (BMU 1992, chapter 4.15) that explicitly addresses radical changes that reach far beyond (necessary) technical innovations at the level of political direction as well as social practices. The interdisciplinary and international discussion that has been carried out intensely since the early 1990s calls for the need of a multi-dimensional plan of action that focuses especially on the necessary social innovations relating to the junctions between different rationales (economic, ecological, social) with the aim of finding better and alternative ways to meet existing needs and to more effectively work through unintentional repercussions and side effects of industrial development in society (as relates to climate change, for example) than before. It is precisely in this context that service innovations coordinated to changed "consumer habits" and use concepts play a central role (such as in the areas of mobility, construction and habitation, energy and water sector).

"Socio-ecological research", a funding focus of the BMBF, drew attention at quite an early stage to the connection between sustainable development and social innovations in terms of being an independent topic and subject area (such as car sharing, mobility consulting) as well as from the perspective of interactions and linkages and interconnections with technical innovations ("system innovations"). Here the aspect of a targeted intentional shift towards sustainability in the sense of "path changing" (Nill et al. 2002) and the related directional perspective are central. The 1999 framework program for the new research focus outlined the topic, research and practice area of "socio-ecological transformations and societal innovations" (Becker et al. 1999, p. 27 et seq.). Here "social and institutional innovations for societal searching, learning and decision-making processes" (Ibid., p. 32) are in the foreground, namely civil society self-organization, networking, process management, participation processes, as well as "new cultural practices" in diverse, especially ecologically relevant areas of needs such as nutrition, mobility and residential issues, etc. The sociological research proceeds from the assumption that technical economical potential (in the field of energy use for example) relating to sustainability can only be tapped if social practices change accordingly. In this sense, the respective institutional, habitual, and other impediments must be identified and the applied innovations with the corresponding directional impact must be initiated in social practices. Accordingly the central issue is "the targeted change and formation of systems of social rules as a condition for the sustainable resolution of problems" (Voß et al. 2002, p. 82).

The necessity of tenable alternative social options becomes quite clear given the growth pitfalls qua rebound effects associated with increased efficiency (Voß et al. 2002, 251 et seq.). Brought to bear by lower costs on the one hand and reduced time requirements on the other hand, increased efficiency is in part more than offset by the effects of growth³⁰ – a classic problem of unintentional side effects and an important starting point to approach social innovation in terms of social

30 As can be observed in cases such as energy-saving light bulbs, combustion engines, industrial production, the paradox of communication in conjunction with new the sense I&C technologies, the illusion of the "paperless office".

practices. As long as the technology-driven growth spiral manifested by rebound effects of this kind is further exacerbated, a risk exists that technology-induced increases in efficiency and path changes (such as renewable forms of energy) in the sum of their sustainability effects will be gambled away.

It is very apparent that the scope of the topics that social innovations and sustainability intersect has expanded in conjunction with the rising acceptance of the need for sustainability and has also become more socio-politically relevant (cf. Schwarz et al. 2010). The topics are no longer simply missions and visions, but also the political, institutional and social requirements and innovations necessary to realize them. If non-sustainable development is the result of an extensive institutional, systematic and management crisis, then the transition to sustainable development can only occur with social innovation and governance structures that foster sustainability. The subsequent demand in research on the way social and sustainable innovation interact will primarily concern: To what extent social innovations themselves can expand on sustainability innovations, what social innovations conflict with what sustainability criteria and what sustainability criteria are critical for the success of social innovations?

This overview of the central application fields for a (theoretically and conceptually developed) concept of "social innovation" makes it clear that the topic has gained traction in a series of research fields and social contexts and has provided proof of its explanatory faculty in the emergence, establishment and mutability of social practices and routines. However there has only been a rudimentary level of synergistic penetration and cross-pollination in different fields of research. If a theoretically feasible concept of social innovation is to be developed, a discussion that spans every field of research is paramount. In the literature presented, points of contact and junctions can be identified that can be expanded upon in this respect. Examples include bridging the separation between technology-oriented research in the areas of the internet and web 2.0 applications and management research that were mentioned earlier. The discussion at the meeting point between company-related innovation research and social economy

and/or the concept of a sustainable and socially responsible economy shows potential in approaches of a theory for social innovation that exist in the systematic exchange of different social rationales.

5. ON THE ROLE OF THE SOCIAL SCIENCES IN RESEARCHING AND SHAPING SOCIAL INNOVATIONS

As we can see, criticism of a one-sided innovation paradigm limited to technology is the central starting point for the discussion of the topic of social innovation in the greater public as well as in the social sciences. In many concepts, this also connects to a critical look at the role of the social sciences in innovations. The "division of labor" between natural science and mechanical engineering on the one hand and social sciences and the humanities on the other hand that is integrated into the current debate on innovation is described by Blättel-Mink (2006) as follows: "Natural and engineering sciences are different than social sciences and the arts primarily in that the former produce innovations or the prerequisites for innovations while the latter reflects on the emergence, the implementation and the success of innovation or also seek to explain the process (by means of compression)" (Ibid., p. 31).

Specifically in its analytical function, research in the social sciences can contribute greatly to conceptually processing the social prerequisites for innovation and the social character of innovation processes. Its strengths rest in the analysis of innovation processes and their contextual circumstances. The findings gleaned here have permeated social consciousness deeply, have determined the thinking and action of social actors and have contributed significantly to establishing a new "sociologically enlightened" innovation paradigm.³¹

31 The theses of Beck and Bonß in innovation research from the 1980s on the process of diffusing findings in the social sciences into practice seem to have been confirmed. The social sciences in this sense have proven to be an important supplier of findings that have penetrated social consciousness deeply and have lastingly shaped the related concepts in politics and the

The social sciences have reinterpreted the process of innovation, but other disciplines continue to dominate this field, primarily technological natural sciences. If the vantage point were shifted from technical innovations to social innovation as an independent type of innovation, the storable self-limitation of the social sciences to the concomitant research associated with a reference to the complexity and paradoxically loaded nature of innovation proves to be insufficient. For it is here that the subject matter of innovation itself rests immediately in the disciplinary perspective and the affiliated capacity for action and formation.

Purely analytical concepts fall short precisely in relation to the specific content of social innovations. After all, as mentioned previously, social innovations (in contrast to technological innovations) are an elementary component of the social sciences (especially sociology) in terms of content, and as such social innovation can be not only analyzed and indicated from a level of comprehension, but also be engendered and (co)shaped in terms of its (social and societal) preconditions, repercussion, etc. Thus it is hardly surprising that the role of the social sciences in examining *and* shaping social innovation is an important issue in the international scientific discussion on social innovation.

5.1 Social innovation as the topic and subject matter of the social sciences

Wolfgang Zapf connected the analysis of the meaning and specifics of social innovations with the question about the role and possibilities of the social sciences in researching social innovations (Zapf 1989, p. 182 et seq.). Up to now these ideas have not lead to increasing the social sciences' responsibility to play a role nor has it enhanced its capacity to do so (cf. Howaldt 2004). It is worth noting in this regard that the action research appreciated by Zapf as social innovation in German social sciences has become less influential. This can only be partially

economy for directing and managing innovation processes of this sort without, however, having profited from this as a discipline (cf. Beck/Bonß 1989).

explained by the weaknesses of action research itself which aims at merging both the scientific demands and the problem-solving processes practiced on a day-to-day basis, which is quite problematic in light of the differentiation of societal subsystems (cf. Howaldt 2004, p. 28). However, it is not a satisfactory solution to forgo large portions of research in the social sciences to some sort of defined practical efficacy and to return to a natural science-oriented self-conception as "pure" science with the function of scientific analysis and describing society (cf. for example Kühl 2003) in light of society's changed demands.

These one-sided analysis-oriented approaches in research in the social sciences prove to be curiously innovation-resistant in terms of both functional expansion and routines for generating knowledge and thus give up important opportunities to assume a key role in innovation research as well as the shaping of innovation processes. It seemed apparent to Wolfgang Zapf that "a greater emphasis on application and innovation (...) would give (social science) disciplines a better status, better career opportunities and greater relevance" (Zapf 1989, p. 183). However, the social sciences need appropriate and context adequate concepts in this regard (cf. Kesselring/Leitner 2008). An orientation on nature and engineering sciences cannot be a solution due to the specific character of the social sciences as well as the particularities of social innovation. In contrast to the natural sciences, social sciences and particularly sociology are, as Giddens highlights, "deeply entangled in their subject matter" (Giddens 1992, p. 412) and the divide between the practical and the scientific is therefore considerably smaller. It is precisely this structural integration in the area of its subject matter that is a source for the discipline's difficulties to credibly claim its "expert status" in a direct comparison to the natural sciences. "Looking at it from a technological stand point" (Ibid., p. 411) the practical relevance is rather limited. In contrast to the natural sciences that guarantee the category of causality in relation to an area of application *ex ante*, the social sciences lack "an equivalent that functions equally well for the meantime (Luhmann 2005, p. 375).

To resolve the specific problems of sociology and to re-describe the specific roles of the social sciences beyond the

science-centered understanding of the practice of science, the discussion on the topic of social innovation offers important inspiration. Key references to the specific potential of the social sciences can be found in Zapf. "Social scientists search for, develop and select new ways to do certain things and solve problems" (Zapf 1989, p. 183). In this sense, Zapf believes that they could be helpful in building new institutions. In the previously mentioned positive reference to action research, Zapf emphasizes that it is precisely the application-oriented "tools for making decisions [delivered by the social sciences] – forecasts, incremental planning, social experiments, evaluation, practices for mobilization and motivation – (...) that [can] indeed enhance the ability of modern societies to solve problems and direct themselves" (Ibid., p. 183). Zapf distinguishes between potential contributions the social sciences can make to social innovation:

- Decision-making help (survey research, personality tests, advisors risks and technology repercussions, human resources planning, etc.)
- Sources of social technologies (quality compass, co-determination model, group therapy),
- Approaches for general theory in order to better understand innovation and productivity (1989, p. 182 et seq.).

However, recognizing that social innovations are increasingly building on "the knowledge, skill and toughness of politicians, managers and professionals (...) and the day-to-day practices (pratiques) of subcultures and social movements from the bottom-up" (Ibid., p. 182) as technical innovation is of great importance in developing appropriate concepts in a version of the social sciences that is oriented towards shaping social innovation.

This sort of understanding of innovation processes requires developing appropriate forms of cooperation between science and practice that are not centrally focused on the transfer of expert knowledge into social practice. In this context, contributions from the social sciences to shaping innovation cannot be exhausted in "consumption products", but forms of generating knowledge must be developed that do not feature potential users or customers as what will adopt the innovation

in the end but are instead incorporated into complex communication networks as equal co-producers (cf. Howaldt 2004 and 2005). The aim of the conception of cooperation is to organize the process of change itself as a learning process that fosters the development and skills of every actor involved and enhances their ability to determine and reflect.

In this context, interest in the subject of consulting in the social sciences has been increasing since the mid-1990s. This interest touches not only on the growing importance of the consulting sector in the wake of establishing a knowledge-based society. It also involves the question regarding appropriate concepts that increase the practical efficacy of research in the social sciences in the context of organization-related or regional innovation processes and could arise in coming transfer models³². Consultancy concepts inspired by systems theory were of particular interest in this regard (cf. also Howaldt/Kopp 1998). New formats for design-oriented social sciences thus emerged on the intersection between consulting and research.³³

5.2 Conceptual design and research in the context of social innovation

The way that these new roles for the social sciences are perceived and the research designs and methods that are applied vary across the different fields of research in social innovation.

The Zentrum für soziale Innovationen (ZSI) that was founded in 1990 in Vienna with a consistent transdisciplinary approach has been concentrating successfully on the researching, development and dissemination of social innovations in different action areas for over two decades and thus affirms Zapf's assessment that tools in the social sciences are well-suited for this in a unique way. Transdisciplinarity

³² In this sense, the research concept connected with the "Developing learning - working - skills" seizes upon important aspects of modern innovation research and it is trend-setting in terms of the structural connection of partners in science and practice (cf. Howaldt 2004; Nowotny et al. 2001).

³³ Cf. also articles in Franz et al. 2003.

means in this context both the collaboration in the practical application and use of knowledge in non-scientific fields of work as well as the integration of findings from practical settings into the process of teaching, developing methods and constructing theories in the sciences (cf. Hochgerner 2008, p. 5). As such it combines the processes of research, consulting, network coordination and education into an integrated overall concept.

In a similar way, the Sozialforschungsstelle Dortmund has been developing a new type of research in operational and regional innovation processes since the mid-1990s that focuses centrally on the production of scientific findings in connection with solving practical problems to master social innovation processes in companies, regions and politics (cf. also Franz et al. 2003; Howaldt 2004). For instance, this involves the development of new forms of working and organization in companies, the creation of inter-organizational cooperation and learning networks, the support of international transformation processes in regional networks as well as the interdisciplinary and transdisciplinary development and implementation of technical and social innovations with regard to proactively and dynamically adapting regions to the effects of climate change.

The work of Geoff Mulgan et al. also concerns practical matters. "Together, these would contribute to a more social innovation system, analogous to the many and diverse systems which exist around the world to promote technological innovation" (Mulgan et al. 2007, p. 5). In a collaborative research report by Mulgan's Young Foundation and NESTA (National Endowment for Science, Technology and the Arts), the focus is thus on clear recommendations for social innovations for politics and financing as well as an action guideline for innovators.

With projects like ALMOLIN and SINGOCOM in the field of local and regional development, Moulaert et al. aim at the promoting developments that propel social integration in different social spheres from the labor market to the educational system and socio-cultural developments (Moulaert et al. 2005, p. 1970).

As an interdisciplinary and inter-university research center for social innovation, the Centre de recherche sur les

innovations sociales (CRISES) also aims to examine and spread social innovation in the areas of regional development as well as life and job quality. It also collaborates systematically with partners in the economy, politics and society (<http://www.crisis.uqam.ca/pages/en/>).

One example of how politics and science can promote social innovations can be found at the Sozialforschungsstelle Dortmund that has been commissioned by the Economic Ministry of North-Rhine Westphalia to carry out a "service competition for the Ruhr region". The objective of the competition was to develop innovations and marketable service products with the intention of unlocking new areas for growth and employment opportunities in the Ruhr region as one of the largest European service markets. Project ideas were awarded that were aiming to improve the housing conditions and quality of life for the elderly, integrate mentally ill migrants, establish daycares, etc. These ideas involve social innovations that are translated into concrete business ideas and marketed as innovative services (cf. Kutzner 2010).

In conclusion, it can be maintained that the underlying field and area of application for social innovation can be separated from technical innovation and that it simultaneously seems to mark a relevant unique characteristic regarding the role and potential of the social sciences. The approaches described here are closely connected with scientific reflection and practical creative drive. As Kesselring and Leitner (2008, p. 14 et seq.) explain, social innovation is to be "regarded as the interface point between sociological reflection and social action as it requires reflecting on social problems and intentional action."

6. TRENDS AND FUTURE RESEARCH AREAS: THE CONTRIBUTION OF SOCIAL INNOVATIONS IN WORKING THROUGH GLOBAL DILEMMAS

A look at innovation politics in Europe supports our thesis that there is a paradigm shift to which innovation research in the social sciences has made an important contribution. On a program level, European research and innovation has been developing a new perspective on innovation since 1992 at the very latest. The social gained considerable ground on the technical in terms of value in the EU's research framework program. The fourth research framework program's assessment report mentioned a division "that is as deep-reaching and fundamental as the original creation of the framework program itself. (...) There should be a transition from research that has been predominantly oriented towards technical achievements to an emphasis on efficient research that can contribute to fulfilling the basic social and economic needs of citizens" (Caracostas/Muldur 1998, p. 15).³⁴ This marks a conception of innovation as a social phenomenon: "Innovation is not only an economic mechanism or a technical process. It is first and foremost a social phenomenon (...). The purpose, impact and framework conditions of innovation are closely connected to the social climate in which they arise" (European Commission: Green Book on innovation, 1995, quoted in Caracostas/Muldur 1998, p. 16) At the same time the European understanding of innovation is being increasingly enriched by the mission for sustainable development.

34 The report set the course for shaping the subsequent framework programs visible today. The value of the social dimension in the innovation process is becoming increasingly acknowledged. The "Science in Society" focus within the seventh framework program indicates that science and society are also being forced closer together to establish science "in" society.

These developments have been shaped heavily by the study by the European Commission mentioned earlier. The study represents the greatest mile stone on the path to the social science foundation of the concept of innovation in European innovation and research policies. Briefly summarized, we are currently in the midst of a phase in which innovation is no longer shaped by industrial and key technologies but is instead informed by a "science-based society" wherein markets are determined by the "demand for products, systems and services focused on knowledge and learning" (Ibid., p. 151).

The cornerstone of an adequate understanding of innovation is therefore (cf. Ibid., p. 143 et seq.):

- the particular meaning of the role of a coordinator in conveying the different innovations of pertinent groups of actors;
- interdisciplinarity, heterogeneity, recursivity and reflexivity of the creative process;³⁵
- the emphasis of historical, cultural and organization requirements;
- greater inclusion of the users/citizens in processes of "co-creating" founded in "social pull" and "public policy drive";
- the use of new concepts and instruments that are personally developed to analyze the dynamic of heterogeneous actors and the dynamic of exploration;
- a systemic perspective on innovation in the sense of "national innovation systems" with research, development, production and marketing being simultaneously optimized in an interactive process;
- the "hybridization" at the cusps of both society (practitioners/users) and science (experts/developers) as well as (soft) social sciences and (hard) mechanical engineering and natural sciences.

In an internationally constructed study (FORA 2010) designed as an input for the new OECD innovation strategy to be presented in 2010, an approach for a new nature of innovation has been placed at the center of the analysis and the

35 These considerations draw from the criticism of technological determinism of a linear sequential understanding of innovation and by contrast refer explicitly to Gibbon's explanations of "mode 2".

necessity for new innovation policies is considered. In addition to the previously mentioned indicators for a growing transformation of the principles and drivers of innovation from technology and science to processes of "co-creating" and "user-driven innovation" (Ibid., p. 9), there are other issues at play, namely the challenges facing the global society and the welfare state explicitly as well as how these can be sustainably solved in a socially responsible way in the sense of "Corporate Social Innovation" (Ibid., p. 43 et seq.) as a central driver of innovation. "Public demand is considerable and remains important to economic activity and could be used in a strategic way to stimulate corporate social innovation" (Ibid., p. 11). Against this background, the extensive transformation of amended innovation policies focused on science and technology is being recognized internationally as one of the state's central responsibilities (Ibid., p. 62). In this context, three political arenas are identified as central: generating new knowledge and skills, smoother regulation and dealing with public demand intelligently. "New knowledge is required to deal with new forms of innovation. Knowledge about co-creation of value and exploring user understanding are necessary, and skills for working in multidisciplinary innovation teams will be crucial. If governments can design and implement standards and regulation in smarter ways, smart regulation can be an engine for innovation. And if public demand can be used more intelligently it can be another strong engine for new forms of innovation" (Ibid., p. 65).

In German innovation and research policies a "phase of expanding increasing the efficiency of national innovation and education systems" inspired in no small part by the social sciences is beginning (cf. Welsch 2005, p. 207 and 221 et seq.). The program in more recent German innovation policies is guided by the concept of the national innovation system and has also departed from its explicitly professed notion of a linear and sequential innovation process that spans basic research to market penetration and can be rationally planned, managed and realized: "Innovation cannot be prescribed" (BMBF 2006, p. 2). Government policy is instead understood as a relevant component of a national innovation system that is responsible for creating the basic conditions necessary and a favorable

environment for innovation with diverse incentives and instruments as well as inspiring the necessary dialog and critical examination that every actor needs to take part in.

A broader conception of innovation that spans the promotion of science and technology has established itself in the stricter sense in the rhetoric and program of actors in innovation policy and the governmental promotion of innovation. In addition to technological innovation, it also comprises "social, organizational or other forms of innovation". Organizational innovations aim primarily at developing and introducing more efficient processes. In the broadest sense, social innovations extend across improving working conditions and "investing in human capital" as "the most valuable resource in the innovation process" (BMWi/BMBF 2002, p. 16) to the wide-reaching complex (of mastering) social change and reforming the welfare state. From the perspective of government innovation policies, social innovations understood this way primarily are means for the purpose of: "creating and ensuring growth for the long term by putting our faith in the best that thing that we have in this country: The people who work here live, teach, learn and work" (BMBF 2006, p. 3).

Overall, the program in German innovation and research policies has had a more forward-looking approach instead of a more defensive and reactive strategy and has been more location-oriented instead of a "picking the winner" over the last few decades. In terms of agenda, innovation policies are directed at diffusion over mission and contain approaches that are increasingly need-oriented as well as product-oriented in addition to hardware and orgware strategies (such as "Innovative capacity in a modern working world" (BMBF 2005). These policies also comprise participatory approaches to innovation (such as the support program for "humanizing the working world" and "socially responsible technical design"). At the program level there are more and more approaches for "innovation policies for a knowledge society" (Welsch 2005, p. 314 et seq.) that primarily rest on initiating and supporting learning processes as well as supporting the processes of exchange that are related to knowledge and promoting human resources. There are echoes of context management concepts in

the program emphasis on creating framework conditions that promote innovation and increasing innovative capacity.³⁶

However, the directional motivation for action in innovation policies in Western industrialized countries from the end of the Second World War to today has essentially remained in an innovation and growth paradigm resting in funding for the economy and technology in each division of the respective policy or welfare state model (cf. Münch 2007). 1998 began with a criticism of what was already an outmoded understanding of innovation and a hopeful statement "that the active involvement of economists and social scientists in scientific technical research projects is still something new, both in Europe and elsewhere" (Caracostas/Muldur 1998, p. 157). In 2004 the Fraunhofer Gesellschaft, a committed member of the "Partners for Innovation" and (in its own words) "the driver in the innovation process in Germany" (Fraunhofer Gesellschaft 2004a), attested to serious structural weaknesses in Germany's current innovation policies, reviving amongst other things criticism of the dominance of the linear model and pleading that the existing findings be heeded (cf. Fraunhofer Gesellschaft 2004, p. 75 et seq.). They claim what is needed, not only in terms of program but also as regards implementation, is primarily a new flexibility and learning capacity in politics, society, the economy and science regarding "systemic innovation policy". "What is required for this is that communication and exchanges are strengthened, interface points are managed, user-manufacturer collaboration is enhanced, the creation of new networks (new combinations) are supported and there is a dissolution of the entrenched (creative destruction). This makes learning processes possible, attention and interest for innovative concepts is generated and it becomes easier to articulate societal needs and market demands" (Ibid., p. 77)

The high tech strategy (BMBF 2006), the greater framework for current research and innovation policies, signifies the German government's attempt to constructively respond to criticism of previous innovation policies. This "comprehensive

36 Cf. Fichter 2003 from a management theory and systematic terminology perspective.

national innovation strategy" explicitly responds to the issue of "the greatest challenges society is currently facing". "It is precisely in difficult times that demand concentrates on innovation in health care, protecting resources and the environment, energy, mobility and security. Key technologies such as nanotechnology, microsystems technology or biotechnology are also important drivers for innovation" (<http://www.hightech-strategie.de/de/77.php>, accessed 22.02.2010).

As the name suggests, the high tech strategy prioritizes promoting technical and technological innovations. The potential significance of social innovation does not enter the focus of this line of thought. This is reflected in issues such as the disciplinary divide in the promotion of innovation: "Technological transformation is changing our world view at a previously unknown pace. While the natural sciences create the conditions for this transformation as well as the knowledge about its direction and the side effects of technology, the humanities are responsible for reflecting on this shift culturally and socially and providing it with an orientation" (BMBF 2006, p. 10).

Against the background of the findings in innovation research summarized in this trend study, this concentration in research funding on advanced technology can be described as problematic because this sort of focus does not satisfy the complexity of innovation processes nor the growing importance of social innovation and thus neglects major potential for innovation. "Innovation policies that are exclusively confined to R&D funding but overlook the relevance of practical experiences and processes of technological linkages between the different sectors contract their stated aims" (Hirsch-Kreinsen 2008, n. pag.).

There are many indicators that social innovations will become more important in the futures as a new innovation paradigm is established. It can therefore be assumed that social innovations will assume central importance in the context of the Europe2020 strategy in light of growing social challenges. "In order for innovation to be a critical tool to address challenges covering many societal dimensions, a broader definition of innovation needs to be adopted. It is now widely agreed that

this definition should include social innovation" (INNOGRIPS 2010, n. pag.). The evaluation of the Lisbon strategy also makes it clear that the existing strategy needs to be expanded. Against the background of the recognition that the great challenges facing modern society, such as rising unemployment, demographic and climate change that are inherently social in nature, the Bureau of European Policy Advisers (BEPA) for the European Commission formulated in its memorandum entitled "Social innovation as part of the Europe 2020 strategy" that "social innovation can offer one way forward to cope with the societal challenges and the crisis the EU Member States are facing" (BEPA 2009, p. 2).

As described in chapter 4, research in management and labor play a greater role with their strong orientation toward increasing companies' innovative capacity. The heightened focus on the issue of innovative capacity and its well-established research tradition provides labor research with important starting points to place new emphases in international innovation research teams and make a specific contribution to international debate. It can assume the role of functioning as a motor for innovation nationally. Precisely with the example of labor and management-related change processes in companies can the consequences and significance of the concept of social innovation prove itself in successfully shaping these processes (cf. Kesselring/Leitner 2008; Howaldt et al. 2007).

The increased inclusion of social innovation in research areas creates an important condition to effectively confront the central dilemmas of globalization. With the emphasis on human labor and the reference to the technological and social requirements for preserving and expanding companies' innovative capacities, labor research contributes not only to minimizing the tension between human resources and financial pressures but also to dissolving the conflict between business and the individual. The exploration and development of new innovation management concepts that aim to open up the innovation process to society will be able to contribute to reducing the tension between customer orientation and innovation.

In this respect, intentionally combining the program "Working – Learning – Developing Skills – Potential for Innovation in a Modern Working Environment" with the German government's high tech strategy will prove to be fruitful. This also applies in a thematic sense as topics and concepts from the high tech sector have been intentionally adopted ("network", "open innovation"...). But this also applies to incorporating projects that are expressly researching current development trends in high tech industries and are looking at new modes of production and innovation as well as their impact on human labor and new management challenges. Even looking at new "leading industries" brings with it important findings about central development trends and the resulting challenges for the preservation and expansion of innovative capacity. At the same time these findings also afford new perspectives on typically more traditional industries that reposition themselves in response to changing demands.

However the program's efforts alone are not enough to promote innovative capacity in the German economy and society and further advance research in innovative capacity. The central challenge lies in translating the program's findings and the broader understanding of innovation this is based on (as well as the associated research concept) to other high tech strategy programs. The questions relating to the social prerequisites for successful innovation processes, including the significance of employment as a crucially important driver of innovation need to be integrated into other programs and plans which are often one-sided and technology-oriented.

For instance, the study "Future and future ability of German information and communications industries" points out the close connection between social and technological innovation. The first recommendation for the future of IC technologies in Germany relates to funding to overcome the digital divides in society. "This expert survey clearly confirms there is not an insufficient technical availability of broad band internet access or economic barriers or an anti-technology society standing in the way of overcoming the 'digital divide' in Germany. The positive drivers and levers supporting greater diffusion of internet usage in Germany can be found first and foremost in

the area of education" (Münchener Kreis et al. 2008, p. 12).³⁷ A chapter has also been dedicated to the meaning of social innovation, particularly as regards the use of web 2.0.

With the focus on social innovation, the directional view over the economy and society is expanding, or as Schumpeter wrote as early as 1911, over "the overall picture of the political economy" and "social cultural development" (Schumpeter 1912/2006, p. 463 et seq. and 545). For Schumpeter, the entrepreneurial function, which he describes as the "actual basic phenomenon of economic development" (Schumpeter 1964, p. 119) is an expression of a specific type of *human behavior* (Ibid., 119, Fn. 20) which signifies a "step away from the routine" (Ibid., p. 126) and can indeed also be found in other historical contexts and social areas, such as science (Ibid.).

The shift in focus towards social innovation means more than just taking new or other phenomena into account. To the extent that something new occurs at the level of social practices and not in the medium of technical artifact, a fundamental conceptual realignment in innovation research is necessary (cf. also Rammert 2010 as well as MacCallum et al. 2009). A social innovation is a new configuration of social practices in certain areas of action or social contexts prompted by certain actors or constellation of actors in an intentional, targeted manner with the goal of better satisfying or answering needs and problems than is possible on the basis of established practices. It relates "to living together in communities and society" and concretely means "new forms of participation and social integration, of reconciling interest and social justice as well as individuality and solidarity" (Rammert 2010, p. 43). The challenges arising in conjunction with globalization and the relevant dilemmas in action and direction that accompany them require first and foremost responding by initiating and organizing fundamental transformation processes in central areas of society as well as carrying out and spreading extensive social innovations. In light of the rising dysfunction in the processes of differentiation

37 We were able to make similar findings with respect to the growing importance of social innovation in our research on corporate knowledge management. The studies especially provided insight into the dysfunctionality of knowledge management that is heavily reliant on technology in a business setting (Howaldt et al. 2004 as well as BMWi 2007).

in society that is becoming apparent and the related dilemmas, social innovations are revealing their unique power particularly where different social (sub)rationalities intersect. "In this context, social innovations can be seen as intentional action to solve problems that lead to a shift in social orientation, such the combining economic and social objectives in a business's approach" (Kesselring/Leitner 2008, p. 7). In this respect they play a pivotal role in the crucial resolution of the contention that tends to arise between the reference points of³⁸ human resources and fiscal pressure, cooperation and competition as well as sustainability and maximizing profits. At the heart of this is realizing transitions, or in other words "to create something new with the reflexive and strategic action that breaks rules and path developments and enact this with power and networks" (Rammert 2010, p. 39). This cannot be achieved with an innovation perspective that is focused solely on technology and the economy.

38 Rammert (2010) points out that the "introduction of technical and economic innovation (...) does not live up to the variety of innovation in society and the diversity in the respective reference systems." "A conception of innovation is required (...) that comprises other societal references in addition to an economic reference" (Ibid., p. 21 et seq.).

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