4. A multiple case study design for understanding innovation projects

To identify standards of collaborative innovation, the author of this book re-analyses six innovation projects covered by the COLLIN research project (see below). The cases provide rich empirical descriptions of unintended outcomes, allowing the social process of creating work standards to be linked to theoretical constructs like knowledge integration (Yin, 2009).

A disadvantage of qualitative case study data is the small sample size. This limits the generalizability of the findings. The relationship between the data and theoretical constructs cannot be tested using statistical methods such as regression analysis because a qualitative case study design does not rely on a representative sample and operationalized variables.[31]

An embedded multiple case study design (Yin, 2009, p. 46) was used in this book to address these drawbacks. This section is an explanation of how this design was constructed. The basic idea behind a multiple case study design is to increase the generalizability of the findings by understanding each case as an opportunity to compare the findings with those of previous cases. The aim of the researcher is then to replicate the previous findings in a stepwise manner, to eliminate results that are idiosyncratic to a particular case, to rule out alternative explanations and to develop a theory (Eisenhardt & Graebner, 2007).

The cases studied are grouped into three pairs (cf. Gerring & Cojocaru, 2016). For each pair of cases, two innovation projects were selected that were similar to each other in terms of the type of innovation: incremental innovation, radical innovation and emerging technologies (the most similar design within the pair and the most different design between the pairs). In doing so, an attempt was made to keep the processes of technology development and knowledge integration somewhat constant for each pair of cases, while allowing for differences in the impact of standards on the outcome of technology development between the pairs of cases.

31 A theory test based on statistical estimations is not possible due to the small number of cases and, more importantly, the difficulty of measuring the idiosyncratic social processes involved in knowledge integration across organizations (Bitektine, 2007; Emirbayer, 1997). The quantification of knowledge integration processes has been the subject of only a few attempts by scholars. For example, focusing on recent contributions, Herstad et al. (2015) merge data from innovation surveys with employer and employee registers.

It is plausible to assume that innovation projects that resemble each other in terms of the nature of the innovation will also resemble each other in terms of the practices of knowledge integration, as well as in terms of applying standards, which are more or less institutionalized in a given social context. For example, it was argued in Sect. 3.3 argued that the incremental improvement of an existing technology relies more on regulated processes of knowledge integration than a radical innovation process, which by definition deviates from established standards, so that reliable practices of knowledge integration as well as a common innovation praxis have to be established by the project partners themselves. Similarly, innovation projects operating in an emerging field will find it difficult to draw on either established procedures for knowledge integration or established standards within the field, so it is assumed that focal firms will look for suitable solutions in adjacent fields.

Such a *most similar design*, which is as similar as possible for each pair of cases representing the same type of innovation, increases the validity of the findings for each pair of cases. The *most different design* was realized by contrasting three different pairs of technology projects. This allows us to compare the results. This increases the generalizability of the conclusions that are drawn from the analysis in comparison to a single case study design (cf. Lijphart, 1971).

4.1 The process of "casing"

Casing is the process by which the organizational objectives under study is isolated and the data material that is to be analyzed in detail is defined. Casing requires the researcher to reduce the complexity of the empirical data collected in the course of the investigation, since a case study design aims to illustrate the totality of an organizational phenomenon. The researcher has to decide which organizational objective is to be studied in detail within a social context that is delimited in terms of space and time (Fiss, 2009). In other words, the researcher has to draw a boundary around the empirical observations and focus on certain processes while leaving others to one side.

The authors of this book focus on two activities involved in innovation projects: (1) integrating knowledge from different organizations and disciplines, as well as (2) establishing working standards for developing technology. Unintended outcomes are then the observable outcome. Their social 'production' can be traced back to practices of knowledge integration and the establishment of working standards (cf. Eisenhardt, 1989). Table 7 summarizes the processes and outcomes that have been observed and that have been further evaluated.

Six cases were included in the evaluation. An overview of the organizations and interviews is given at the end of this section. Each pair of cases represents one type of innovation: either an incremental innovation, a radical innovation or an emerging technology.

Cases A and B were chosen as examples of incremental innovation contexts. In both cases, the introduction of a new technology is mainly the result of a collaboration between a component supplier and a large European WTM. The first component is part of the drive train of wind turbines (Case A). The second component is much smaller and is installed in the rotor (case B).

Table 7: The processes and outcomes observed and evaluated

	Integrating heterogeneous knowledge	**Creating shared standards of technology development**	**Institutional barriers to collaborative innovation projects**
Definition	"*process of collaborative and purposeful combination of complementary knowledge*" (Berggren et al., 2011b, p. 7)	"*regulatory process [that] involve[s] the capacity to establish rules, inspect others' conformity to them*" Scott (2008, p. 52)	"*Shifting and ultimately failing the basic social safeguards for success (...), namely (...) organizational rules, standards and routines.*" (Ortmann, 2014, p. 32)
Empirical examples	*"[W]e now receive vast amounts of load information (...) that we have to process computationally. (...)."*	"*It takes a certain lead time for a supplier to really fulfil our high quality requirements. It takes time for them to achieve a certain level of process capability.*"	"*[The customer] may have planned additional costs for one component that he wanted to compensate for in the other. But he won't let us talk to the manufacturer of the other components to find the optimum solution.*"
Measures	A technical concept or design of a new technology that includes technical information from at least three different organizations	Examples, models, levels or norms applied in the daily praxis of organizing the designing, building and testing of a new technology	An ascribed, significant deviation from performance criteria (e.g. excessive time-delays, severe quality defects)

Cases C and D were selected as examples of contexts in which radical innovation is taking place. In case C, a German rotor blade manufacturing site of a large European WTM introduced a robotic coating line. This was mainly done in cooperation with a system supplier specializing in the automotive industry. In case D, an innovative start-up company in Germany introduced a "wind turbine made of wood" and worked with a number of partners to get its innovation approved for construction.

Finally, two offshore wind energy technology cases (Cases E & F) cover a field of technology development in the offshore wind energy sector which arose following new environmental regulations designed to protect marine life during construction in the German North Sea. In Case E, an entrepreneur invented a technical solution that aimed to establish his company as a new system supplier to wind farm planning companies. In case F, a professional offshore engineer, specialized in the offshore oil and gas industry, attempted to transfer an existing technical standard for a relatively quiet foundation method to the offshore wind energy industry.

A number of methodological concerns need to be raised when looking back at the data collection. In each case, the researcher's aim was the inclusion of all partners which were most relevant to the introduction of the new technologies. However, this was not always possible. For example, no interviewee from the system developer could be found in case C, despite several attempts. Similarly, no representative of two large WTMs could be interviewed in the cases of component development (cases A & B), mainly for reasons of confidentiality. These gaps in the empirical data weaken the internal validity of the findings, which is a strict criterion for assessing the extent to which the researcher has been careful to extract causal relationships from the empirical data and whether the inferences drawn from the data are correct based on the underlying theoretical assumptions and empirical evidence (Gibbert & Ruigrok, 2010; Yin, 2009, pp. 40–45).

4.2 The structure of the empirical chapters

Chapters 5–7 of this book are an evaluation of the empirical cases and a summary of the findings. Each of the empirical chapters has a similar structure to the others. That is, the first section analyses practices of knowledge integration. To identify the social processes involved, it is first necessary to collect empirical data on the main actors involved and how they interact. For this reason, an overview of the organizational field in which the innovation project under study was embedded is provided at the beginning of each case description.

How an innovation project was coordinated is discussed in the second section of each chapter. In order to understand the impact of the social process of establishing an innovation praxis, it is particularly important to take into account conditions such as incentives, benefits or legal rights that shape interactions at the level of individuals cooperating in the development of a new technology.

The third part of each chapter traces the institutional barriers. Chapter 8 summarizes the empirical findings of the research, presents the social processes of technology development that could be found in the empirical cases, and answers the research question in the form of three testable hypotheses (cf. Eisenhardt, 1989).

4.3 Discussing rigor criteria

This section reflects on the quality of the analysis. Apart from disclosing how the research was planned and conducted (see below), the quality of a case study design in organizational research should also be assessed on the basis of the following rigor criteria (Gibbert & Ruigrok, 2010; Gibbert et al., 2008): (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability (cf. Easterby-Smith et al., 2007; Yin, 2009, p. 24). Below, these rigor criteria are critically reflected upon for the research design chosen for this book.

Construct validity assesses how the researcher identified a set of operational measures and the extent to which he/she was able to refrain from subjective judgements (Gibbert & Ruigrok, 2010; Yin, 2009, pp. 40–45). Based on multiple interviews for each case, data could be triangulated by drawing on multiple sources of evidence, which is a strategy for increasing construct validity. In addition, planning, conducting and discussing the empirical data in a research team and having key informants review the drafts of the case study reports is another strategy used here. Finally, based on the research proposal, theoretical sampling was aimed at increasing construct validity; however, this sampling strategy could not be fully realized because the type of innovation and the organization of technology development in each case could hardly be identified ex ante. In addition, access to innovation projects was highly dependent on the willingness of companies to participate in the research.

Internal validity assesses whether the researcher was careful in extracting causal relationships from the data. It also assesses whether the inferences drawn from the empirical data are correct based on the theoretical framework and the empirical evidence (Gibbert & Ruigrok, 2010; Yin, 2009, pp. 40–45). In this study, both the sampling and data collection strategy were based on the theoretical framework and hypotheses outlined in Wittke et al. (2012). While the initial theoretical assumptions remained broad, a compelling argument was found by drawing on the literature on knowledge integration and the impact of standards in organizational settings. However, it cannot be ruled out that there may be alternative explanations that would need to be explored in future studies.

A multiple case study design increases the external validity of the research, which is the extent to which the findings can be analytically generalized beyond the observed cases (Gibbert & Ruigrok, 2010; Yin, 2009, pp. 40–45). In particular, comparing findings across cases within pairs and across innovation types increases the generalizability of conclusions. Another strategy to increase external validity is to explain the rationale for case selection. In this book, each innovation project should combine knowledge from at least three different organizations and each project should be characterized as either an incremental innovation, a radical innovation or an emerging technology.

A final rigor criterion is data reliability. This criterion expresses the extent to which another researcher would be able to arrive at the same findings and conclusions if he/she followed the same research procedures (Gibbert & Ruigrok, 2010; Yin, 2009, pp. 40–45). The COLLIN project team carefully documented its research procedures, which increases the reliability of the findings. For each case, the project team wrote a report (documenting the organizations and interviewees contacted, etc.). The use of a (semi-structured) interview guide also increased the reliability of the data.

4.4 Identifying empirical cases of innovation projects

The empirical data used to uncover the institutional barriers to collaborative innovation were collected in the course of the research project 'COLLIN – Collaborative Innovations' (Wittke et al., 2012).[32] The project raised the question of how companies use external knowledge for internal product development processes. Between April 2013 and March 2016, COLLIN investigated

32 The research project 'COLLIN – Collaborative Innovations' was funded by the Volkswagen Foundation. The project idea was supported by the Lower Saxony Ministry of Science and Culture based on the funding program 'Niedersächsisches Vorab'. The joint project was coordinated by Prof. Dr. Martin Heidenreich and Prof. Dr. Jannika Mattes at the Jean Monnet Center for Europeanization and Transnational Regulations Oldenburg (CETRO) of the University of Oldenburg, as well as by Prof. Dr. Jürger Kädtler of the Sociological Research Institute at the University of Göttingen (SOFI). While the working group in Göttingen (Dr. Klaus-Peter Buss, Heidemarie Hanekop, Dr. Patrick Feuerstein) investigated the sector of information technology, the research team at Oldenburg (Dr. André Ortiz, Manfred Klöpper and Thomas Jackwerth) analyzed the sector of wind energy. The project's research design and methodology can be found in the final report (cf. Heidenreich et al., 2017, pp. 45–56).

collaborative innovation processes in innovation projects in two leading sectors of the German economy, wind energy and information technology.

The project originally assumed that innovation projects can be differentiated according to four types of governance: markets, hierarchies, communities and networks (Hollingsworth, 2000; Hollingsworth & Boyer, 1997). For each governance type, the project aimed to collect two cases with about ten experts from different functional units (e.g. project management, R&D, marketing & sales, production, etc.). In total, the 'COLLIN' project collected sixteen cases, eight for each of the two sectors. The author of this book re-analyses six cases from the wind energy industry from a different theoretical perspective.

4.4.1 Wind energy technologies

Wind energy technologies are a suitable example for analysing innovation projects. As is discussed below, modern wind turbines are technological architectures based on a dominant design. Under such conditions, innovations typically take the form of incremental improvements of components or subsystems, albeit requiring collaboration between different actors such as WTM, sub-system or component suppliers, applied research institutes or certifying bodies.

Wind power technologies are not new: the very first wind power technologies were in use on the Persian-Afghan border around 200 BC. The first electricity-producing wind turbine was installed in Cleveland, Ohio, in 1888. Today, countries around the world are considering wind energy technologies as a means of securing their energy supply and reducing their dependence on carbon-based energy (Kaldellis & Zafirakis, 2011).

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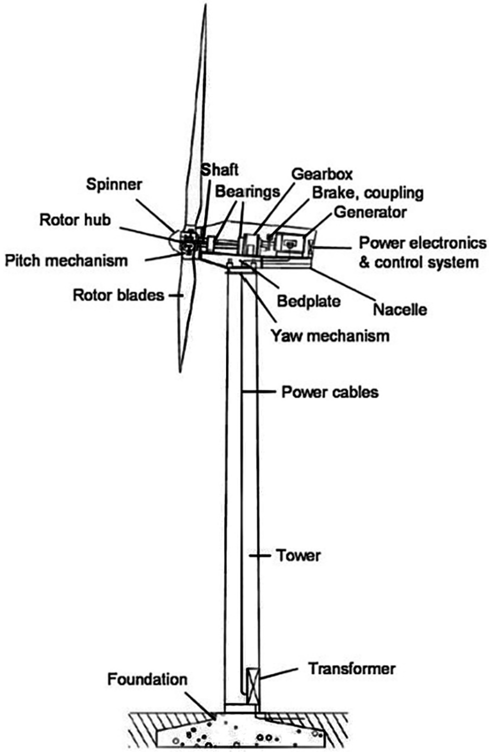
In the 1970s, pioneering entrepreneurs, scientists, farmers and local communities began to install wind turbines in rural and politically protected niches in Denmark and northern Germany. Emerging regional networks or clusters provided the social context for these agents to learn about these new technologies, user needs, technical standards and regulatory frameworks. Within these niches, pioneers had the space to deviate from the established technological regime of energy production protected by large incumbents (Fornahl et al., 2012; Karnøe & Garud, 2012; Mautz, 2012; Ohlhorst, 2009; Simmie, 2012).

In the late 1980s, the (onshore) wind energy industry reached a stage of maturity. In Germany, wind energy technologies have been booming since the 1990s. They have been progressively improved and have now become a state-of-the-art renewable energy production system. At the turn of the 21st century, a European offshore sector started to emerge, mainly concentrated in the UK, Germany and Denmark (Rodrigues et al., 2015).[33]

Innovation processes in the wind energy industry are now organized in global networks, geographically decoupled from their Danish and German origins (Jackwerth, 2014; Schaffarczyk, 2013; Silva & Klagge, 2013), whereas the early stages of wind energy in the 1970s and 1980s were characterized by 'bricolage' (Hendry & Harborne, 2011). Large WTMs such as GE Energy, Vestas, Goldwind, Gamesa, Enercon, Suzlon Group, Guodian United Power, Siemens Wind Power and Nordex are dominating the technological innovation (Kumar et al., 2016). For example, Vestas and Siemens Wind Power supply almost the entire global demand for offshore wind turbines.

33 Within the global energy production system, the significance of wind energy technologies is limited, accounting only for 2–3 % of the global electricity supply (Timilsina et al., 2013). Its growth rates, however, are impressive. From 1980 to 2012, the global wind power generation capacity grew from 10 MW to 282 GW, with an annual growth rate of circa 27 %. In Europe, wind energy accounted for 7 % of the European electricity consumption (McKenna et al., 2014).

Figure 1: Technological architecture of wind turbines



(taken from Huenteler et al., 2016a, p. 1199)

4.4.2 Patterns of technological innovation

Traditionally, innovative energy technologies are rarely developed by energy companies alone, but rather result from combining knowledge established in different sectors: for example, electro-mechanical machinery is used for gas turbines, semiconductors are incorporated in solar panels, and biochemistry provides the basis for biofuel conversion technologies. As wind turbines consist of generators, rotor blades, gearboxes and software systems, the same pattern of technological innovation can be expected for wind energy technologies. In fact, the literature shows that – in contrast to photovoltaic technologies, which are characterized by process innovations aiming at improved large-scale manufacturing capacities – wind energy technologies rely on systemic innovations (cf. Huenteler et al., 2016 a, b). This means that wind turbines are still incrementally improved through collaboration between heterogeneous specialists, such as subsystem or component suppliers.

The architecture of modern wind turbines consists of different subsystems. In general, two different designs can be distinguished. The “Danish design” is characterized by a horizontal rotor axis and three rotor blades (Hendry & Harborne, 2011; Kamp et al., 2004). A second prominent design, the direct drive, was established by Enercon and is often seen in wind farms in Germany (Lema et al., 2014). As shown in Figure 4.3, the architecture of wind turbines includes four sub-systems: the rotor, the drive train, the support structure (consisting of the foundation, tower and nacelle) and the grid connection (cf. Dannenberg, 2013; Schaffarczyk, 2013). Each subsystem in turn comprises various components, so that modern wind turbines contain several thousand of them in total (Huenteler et al., 2016b; Markard, 2011).

Today, as a dominant design has been established, the experimental period has ended and architectural innovation has declined (Huenteler et al., 2016b). Technological innovation has shifted from architecture and core components to subsystems and subcomponents.[34] Technological innovation is mainly driven by increasing size and reliability requirements (for a literature review, see McKenna et al., 2014). Another driver is the adaptation of wind energy technologies to new deployment contexts, such as coastal regions, forests, mountains, near-shore or deep-water locations (Jacobsson & Karltorp, 2013). In particular, the specific conditions of offshore wind turbines – harsh conditions at sea, high maintenance costs, high capital intensity of wind farm projects or production bottlenecks – require new technological and logistical solutions.[35]

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34 This means that they are based on “*patents that received more than half of their citations from patents in other subsystems*” (Huenteler et al., 2016b, p. 111). Using empirical data from patent analysis, Huenteler et al. (2016b) found that new technological solutions often rely heavily on knowledge embodied in sub-components or neighboring systems. Indeed, the authors highlight that the share of systemic innovation in wind energy technologies has increased over time, from 49 % in 1980–89 to 58 % in 2000–09. The photovoltaic industry, on the other hand, relies mainly on process innovation.

35 As Jacobsson & Karltorp (2013) explain, the installation, operation and maintenance of offshore wind turbines in particular face harsh environmental and meteorological conditions compared to onshore wind. Due to their increasing weight and size, offshore wind turbines are manufactured close to port facilities. The turbines are built on special foundation structures and their installation requires new grid infrastructure. Suppliers of offshore components are often rooted in the maritime industry. They need to be integrated into supply chains that provide port facilities, specialized vessels and offshore logistics (cf. Fornahl et al., 2012).

In conclusion, wind energy technologies lend themselves to the analysis of collaborative innovation. Wind turbines are technological systems. Innovation in the wind energy sector is often incremental, with improvements realized through collaboration between WTM, component specialists and other partners such as research institutes. However, technological innovation is now mainly driven by increasing size and reliability requirements, as well as a differentiation of application contexts such as offshore, which increases the possibility of radically new solutions.

4.4.3 Data collection and problem-centered interviews

The empirical evaluation in the following chapters is based on expert interviews on six innovation projects collected by the COLLIN research project. One of the major challenges of COLLIN was to identify suitable cases of technology development. This section describes how the data collection was carried out.

In order to gain a better overview of the key players and to discuss current innovation challenges, the research team conducted exploratory interviews with experts from the wind energy industry. As Tab. 4.2 shows, the researchers spoke to 14 experts representing four different actors: associations and political administrations, public and private service providers, electrical plant operators and scientific institutes. In some cases, suitable innovation projects could be identified in this way.

Due to the limited information available on ongoing innovation projects, experts and their contact details were also searched on the Internet. Access to the field was mostly through direct requests for interviews. A mix of approaches was used, including telephone calls, e-mails, formal letters and informal requests at industry trade fairs.

All interviewees were given a one-page overview of the COLLIN research project. Due to the potential sensitivity of the data collected, an official declaration of confidentiality was used in some cases as a 'door opener' for arranging interviews. As the interview locations were often outside of Lower Saxony, extensive travel was required.

In each case, efforts were made to complete the ten interviews originally planned by COLLIN. However, mainly due to difficulties in accessing firms or collaborative innovation projects, the number of interviewees achieved ranged from five to 13 per case. More than five times, access to additional interviewees was denied after the first interview. Consequently, these cases had to be discarded after completion of the first interview.

The empirical data were collected between August 2013 and April 2015. The data collection was based on a semi-structured interview guide according to Flick (2002, pp. 117–145). In designing the interview guide, the two research groups involved from the Universities of Oldenburg and Göttingen defined theoretical categories that were general enough to cover current developments in two different sectors, namely information technology and wind energy technology (Heidenreich et al., 2017, pp. 45–56). The Oldenburg research group was responsible for conducting interviews in the wind energy industry.

One particular case, Case B, served as a pilot case for testing the interview guide. This case helped the researchers to identify underexplored issues (related to collaborative innovation) in the collected data, in particular the influence of coercive power on technology development. It was also Case B that sensitized the author of this book to the role of standards in innovation projects and how they are imposed by powerful actors such as WTM. The case also inspired the author to classify innovation projects according to different types of innovation.

The interview guide consisted of five sections linked to COLLIN's theoretical assumptions and research question (see section 8.7 in the appendix). After a short introduction by the interviewer (aim of the research project, main topics, etc.), the involvement of external specialists in the innovation project was explored in particular.

The interviews were problem-centered, i.e. the questions were oriented towards theoretically relevant problems such as practices of knowledge integration or the coordination of innovation projects based on standards (cf. Flick, 2002, p. 135). Problem-centered interviews are particularly suitable for the analysis of social processes in and across organizations because they address individual actions and increase the researchers' understanding of the underlying meaning or rationality (Witzel, 2000). Questions such as 'why' a project team faced a particular problem and 'how' they worked together to solve it emerged frequently. Both COLLIN's research proposal and the interviewer's personal professional experience provided further impetus for sensitizing concepts (Blumer, 1954), i.e. ideas for questions to be asked in the interviews with the experts.

Each interview lasted approximately 50 to 90 minutes. Due to the often limited time available, and depending on the interviewee's position in the company and his or her insights into a particular innovation project, not all points could be addressed in all cases. In such cases, efforts were made to cover missing items with other members of the same innovation project.

All interviews were transcribed according to a systematic transcription guide. The transcripts were coded using analytical categories derived from three sources: (1) the interview guide, (2) COLLIN's theoretical framework, and (3) unanticipated themes that emerged from the empirical data (cf. Schmidt, 2004). MAXQDA coding software was used for the pilot study and the most relevant interviews for the other cases. Later in the research process, relevant quotes were inserted directly into the case reports.

The interview material was summarized in eight case reports. For this book, six cases with a total of 55 interview transcripts were re-analysed after the completion of COLLIN.

Table 8: Explorative interviews in the wind energy industry

Type of actor	**Organization**	**Interview partners**	**Sum: 13**
Associations and political administrations	Provincial ministry of economic affairs	Minister, experts	2
	Federal association of renewable energies	Former president	1
	Association of the wind energy sector	Deputy managing	1
	Local network of the wind energy sector	Chairman	1
Public and private service providers	Offshore logistics service company	Managing director	1
	Wind park planning service provider	Managing director	1
	IT-consulting firm for the wind energy industry	Product manager	1
	Employee-representative department	Office manager	1
Operators of electrical plants	Utility and offshore planning for energy research	Expert quality management	1
	Large utility-based foundation	Technical secretary	1
	Operator of a network for energy research	Project manager	1
Scientific institutes	Institute of physics and wind energy research	Professor	1

Table 9: Projects of incremental innovation

(Case) technology	**(Citation) Organization**	**Interview partners**	**Sum: 15**
(A) Large component for wind turbines: large power train component	(Org01) Large, well-established component supplier	Strategy & marketing manager	1
		Project manager	2
		Key account manager	1
		R&D power train component	1
		Project sales	1
(B) Small component for wind turbines: rotor brake system	(Org01) Small component supplier and newcomer to the wind energy industry	Manager product department	2
		Product center manager	1
		Marketing engineer	1
		Innovation manager	1
		Construction engineer	1
		Manager manufacturing	1
		Manager quality management	1
	(Org2) Another component supplier	Marketing manager	1

Table 10: Projects of radical innovation

(Case) technology	**(Citation) Organization**	**Interview partners**	**Sum: 26**
(C) A radically new rotor blade coating system based on robotics	(Org01) Rotor blade manufacturing site	Factory manager	1
		Coating process engineer	1
		Production engineer	2
	(Org02) Project partner and engineering service provider	Managing director and system planner	1
		External project engineer	1
	(Org03) A sub-contractor in the project	Managing director	1
		Product managers	1
	(Org03) Firm formerly specialized in rotor blade manufacturing	CTO, member of the board	2
(D) Radically new support structure for onshore wind turbines	(Org01) Start-up firm	Senior product developer	1
		Construction manager	1
	(Org02) Material testing institute	Expert material testing	1
	(Org03) Construction approval authority	Test engineer	1
	(Org04) Certifying body	Team manager	1
	(Org05) Timber engineering service provider	Managing director	1

Table 11: Emerging technology fields

(Case) technology	(Citation) Organization	Interview partners	Sum: 26
(E) Different mitigation systems for offshore wind	(Org01) Public wind park approval authority	Approval expert (only notes allowed)	1
	(Org02) Engineering service provider and system supplier	Managing director and entrepreneur	2
		Technical assistant	1
	(Org03) Engineering service provider and system supplier	Managing director	1
	(Org04) Utility (A), wind park planning department	Offshore engineering manager	2
	(Org05) Utility (B), wind park planning department	Expert noise mitigation	1
		Expert wind park approval	2
		Expert foundation structures	1
	(Org06) Measurement stations	Measurement specialist and consultant	1
	(Org07) System supplier for offshore construction	R&D noise mitigation systems	1
	(Org08) Foundation for the offshore wind industry	Office manager	1
	(Org09) Monopile foundation supplier	R&D monopiles	1

(Case) technology	**(Citation) Organization**	**Interview partners**	**Sum: 26**
(F) A new foundation system turbines	(Org01) Offshore system developer	Senior manager	2
		Design engineer	1
	(Org02) Applied research institute	Research project manager	2
	(Org03) University department	Expert geotechnics	1
	(Org04) Material testing institute	Expert material testing	1
	(Org06) Utility (C)	Expert corporate communication	1
	(Org07) Offshore logistics service provider	Manager offshore logistics	1
	(Org08) Ministry for Economic	Expert	1
		Expert	1