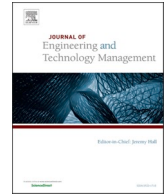


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Psychological ownership for overcoming departmental barriers to innovation: A Study of innovation handoffs

Alf Steinar Sætre^{a,*}, Amy C. Edmondson^b, Oda Dregelid^a, Sofie Rud Zimmer^a

^a Norwegian University of Science and Technology, Norway

^b Harvard Business School, United States

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ABSTRACT

Effective collaboration across departments in an organization is critical to innovation success. Our purpose was to investigate factors contributing to successful innovation involving multiple organizational departments. We employed a multiple-case design with three Norwegian companies in three industries, by examining what happens at innovation project handoffs between different departments in an organization. We found that shared *psychological ownership* of innovation projects enabled efficient handoffs and helped manage the challenges of working across organizational boundaries. Our analysis identified a variety of enablers, which were consistent across industries, to improve innovation project handoffs and create shared psychological ownership.

“[I]n new product development, knowledge is both a source of and a barrier to innovation” (Carlike, 2002).

1. Introduction

Innovation matters to the future success of any company, yet innovation efforts fail more often than they succeed (Buijs, 2003; Dougherty, 1992; Garvin and Levesque, 2006; Rekonen and Björklund, 2016). A primary cause of failure is the inherent challenge of working across expertise and functional groups. Notably, departmental “thought worlds” inhibit effective communication across functions (Dougherty, 1992). Other causes of innovation failure include a lack of aligned goals, different routines and cultures across organizational units (Moenaert et al., 2000); difficult transitions between phases in the innovation process (Rekonen and Björklund, 2016; Rice et al., 2002); and poor management (Bledow et al., 2009). When boundary challenges are effectively managed – thereby bridging these gaps – innovation projects are more likely to succeed. This paper focuses on the opportunity to bridge gaps by studying handoffs between departmental groups in innovation projects.

Innovation depends on collaboration across disciplines such as engineering, design, production, logistics, and marketing. Extensive research on the challenges of boundary spanning across groups has emphasized differences in perspective and expertise that give rise to different interpretations of project events. “Cross-boundary teaming” where people come together across boundaries to work on a

* Corresponding author.

E-mail address: alf.steinar@ntnu.no (A.S. Sætre).

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specific project has proven important not only in innovation teams within companies (Aalbers and Dolfma, 2015) but also in economic development projects in cities and in developing economies (Carlile, 2002; Leonard-Barton, 1995; Edmondson and Harvey, 2017; de Jong et al., 2021). Given the widespread recognition of the benefits of multidisciplinary input in innovation projects (Laursen et al., 2020), the emphasis has understandably been on how to break down barriers to communication and understanding (Bonnet, 1986; Dougherty, 1992). Prior research has largely emphasized building mutual understanding and relationships to break down the interpretative barriers that occur between groups, such as using boundary objects (Boland and Tenkasi, 1995) that illuminate areas of misunderstanding and boundary brokers who can communicate across boundaries.

Less attention has been paid to the factors that lead people to persevere and engage in the kinds of boundary-spanning and boundary-minimizing behaviors that allow innovation to succeed. To investigate this, it is helpful to consider how innovation projects unfold across departments, rather than assuming all functions collaborate at once.

Innovation projects tend to proceed along a temporal journey (Van de Ven et al., 2008) that requires more and less input from different groups at different times (Carlile, 2002; Leonard-Barton, 1995), punctuated by a series of relatively infrequent, but nonetheless critical, handoffs between groups (Aalbers and Dolfma, 2015; Lebaron et al., 2016). Innovation projects often start in a technology development unit, to be implemented in, or marketed and sold by, other parts of the organization. Many innovation projects involve work by multiple units in the same organization and face multiple handoffs during the journey to completion, whether that means implementation within the company or market launch. To illustrate, our three case studies involved handoffs from product development to production, from product development to marketing, from business development to the organization, and from the innovation project team to operations. Innovation handoffs, when an innovation project is transferred from one department to another inside an organization, is an understudied phenomenon with clear implications for project success. To explore how innovation projects overcome the known barriers to communication between groups, we chose to investigate the innovation handoff process.

Our research aim was to shed light on the factors that contribute to successful innovation by investigating what happens at handoffs. That is, what factors allow individual members of innovation teams to span boundaries effectively? We were especially interested in when and why people were able and willing to engage in the behaviors that helped ensure effective handoffs (Lebaron et al., 2016).

What emerged from the data was the importance of an intrapersonal factor called "psychological ownership", which appeared to foster the effortful and collaborative behaviors that allow cross-boundary work to proceed effectively. We did not set out to study psychological ownership; rather, it was a theme that emerged from our data analysis (Eisenhardt, 1989) as highly relevant in innovation handoffs. Psychological ownership motivated people to go the extra behavioral mile, so to speak, in communicating and coordinating between groups. Their sense of ownership of the project meant expending additional effort to ensure handoffs were more effective.

2. Cross-boundary communication challenges in innovation projects

Cross-organizational-boundary communication is difficult in part because of the taken-for-granted nature of thinking patterns and norms within a group. Due to similar knowledge, backgrounds and perspectives, employees within a discipline or department tend to think in similar ways (Dougherty, 1992; Griffin and Hauser, 1996). Related terms, such as communities of knowing (Boland and Tenkasi, 1995) and communities of practice (Brown and Duguid, 1991; Dougherty, 2001) capture aspects of this phenomenon, pointing to shared perspectives on time frames, formality, language, perception, culture, and power within expertise domains (Dougherty, 1992).

Anytime members of different departments meet to collaborate, their distinct "thought worlds" act as barriers to shared understanding (Dougherty, 1992), due to cognitive (Boland and Tenkasi, 1995; Dougherty, 1992) and communication barriers (Beckett and Hyland, 2011; Boland and Tenkasi, 1995). The innovation literature highlights communication as crucial to successful innovation (Beckett and Hyland, 2011; Boland and Tenkasi, 1995; Griffin and Hauser, 1996; Moenaert et al., 2000) and, in turn, identifies lack of communication as a common cause of failure in the new product development process (Morais-Storz et al., 2020; Souder, 1988). Differences in vocabulary and language, stemming from different mental models, can hinder collaboration across groups (Edmondson and Nembhard, 2009). In the words of Boland and Tenkasi (1995), "Thought worlds with different funds of knowledge and systems of meaning cannot easily share ideas, and may view one another's central issues as esoteric, if not meaningless." (p. 351). Human cognition presents "simplified models that capture the main features of a problem without capturing all its complexities" (March and Simon, 1993, p. 190). In a similar vein Baer et al. (2013) stress that: "no single actor is likely to possess or to be able to easily accumulate the range of information and breadth of knowledge needed to span the problem space" (p. 201).

The tacit knowledge within thought worlds gives rise to ambiguities between them. According to Brun et al. (2008), "ambiguity can be understood as different interpretations of the same piece of information, caused by actors interpreting the information from different frames of reference" (p. 304). In this way, differences in thought worlds give rise to ambiguity (Dougherty, 1992). Fortunately, as described by Brun and Sætre (2008) "ambiguity is reduced when the actors share these [knowledge] bases" (p. 579). Ambiguity and uncertainty – inherent attributes of innovation contexts – come together to make communication particularly challenging (Cummings and Teng, 2003). Sætre and Brun (2020) emphasize the potential for reducing ambiguity, noting: "It is through the communication of diverging social realities that ambiguity is generated" but they continue by noting that: "it is through communication that these ambiguities are resolved" (p. 362). Resolving ambiguities hinges upon recognizing that different functional areas in the organization bring different set of assumptions and understandings. This is made challenging because assumptions tend to remain unrecognized (Polányi, 1967) and groups are hampered by subtle but important differences in how they view the same situation, which remain unexplored and thus unresolved (Edmondson and Reynolds, 2016).

Handoffs between departments present a recurring phenomenon in innovation work, itself is a complex activity with high ambiguity and uncertainty. Handoffs refer to the actions through which information, materials, or people are exchanged between groups. Despite its importance, innovation handoffs between organizational departments is an understudied phenomenon. In contrast, handoffs between departments have been studied in healthcare settings, specifically hospitals, identifying handoffs between caregivers – within and between fields of expertise – as crucial points of vulnerability in the delivery of safe, high quality patient care (See [Mardis et al., 2016](#) for a review). Specialized healthcare, like innovation, is a complex process. Research on hospital handoffs reveals it to be a frequent source of serious errors (along with malpractice suits) ([Cohen et al., 2012](#)). Handoffs in innovation projects similarly present risks; incomplete or poorly managed handoffs are likely to hamper the speed or quality of innovation projects as well as introduce errors and cause failures. Handoffs in healthcare are frequent, even routine, events, yet are nonetheless a frequent cause of failures. Innovation handoffs between departments are occasional, but regular, events, much less frequent than in healthcare. This reduces the opportunities people have to improve handoffs and creates the possibility that they are even more problematic and challenging for innovators than they are in healthcare. Handoffs – and the challenges they naturally present – thus comprise fertile territory for studying innovation effectiveness.

3. Factors enabling cross-boundary collaboration

The differences in assumptions across functional groups are, by their nature, largely invisible to the occupants of different thought worlds, but under certain conditions can be made salient and thus overcome. Notably, prior research identifies several factors that contribute to overcoming barriers, including perspective taking, communicating tacit knowledge, and supportive climates (as created by psychological safety). We briefly review this work, before turning to the concept of psychological ownership, which, as elaborated in the methods section that follows, revealed itself as important in motivating people to do the deliberate and challenging work of bridging boundaries.

3.1. Perspective taking

Scholars stress the importance of “perspective taking,” narratives, and a common vocabulary ([Boland and Tenkasi, 1995](#); [Brun and Sætre, 2008](#); [Edmondson and Nembhard, 2009](#); [Hilligoss and Moffatt-Bruce, 2014](#)) as a way of overcoming the differences in mental models that thwart collaboration across expertise groups. Perspective taking is defined as the process “where distinctive individual knowledge is exchanged, evaluated, and integrated with that of others in the organization” ([Boland and Tenkasi, 1995](#), p. 358). The extent to which “the group’s members possess an accurate understanding of the mental models of other members” ([Huber and Lewis, 2010](#), p. 7) affects group outcomes by shaping the content and efficacy of communications.

Knowledge transfer in innovation handoffs often encounters problems related to differences in mental models, and ambiguity related to terminology. First, the more deeply embedded the knowledge, the more difficult it is to transfer ([Cummings and Teng, 2003](#)). Because of its cross-functional nature, innovation project handoffs naturally face opportunities for misunderstanding. Second, when the distance between knowledge domains is greater (such as between marketing and materials science, compared to between two adjacent branches of engineering), transfer is more challenging ([Cummings and Teng, 2003](#)).

Perspective taking involves concerted efforts to understand the ways others are thinking and is likely to improve the effectiveness of an innovation handoff. The effort required will likely depend on the degree of knowledge embeddedness and distance involved in a handoff. [Boland and Tenkasi \(1995\)](#) suggested that narratives aid in constructing perspectives that act as boundary objects facilitating perspective taking between thought worlds. Narratives play a vital role in sensemaking and perspective taking ([Bartel and Garud, 2009](#); [Boland and Tenkasi, 1995](#)), and is a promising area for understanding the transfer of knowledge between expertise groups.

3.2. Communicating tacit knowledge

When a team receiving information or materials from another team lack knowledge about key issues and their context, often tacit knowledge, they are unlikely to know what questions to ask. Communicating effectively across thought worlds thus benefits from active listening with a temporary suspension of assumptions ([Schein, 1993](#)). Suspending assumptions is important because listening by specialists tend to be inadvertently selective (Isaacs, 1999). Without deliberate suspension of assumptions, perspective taking is difficult and even unlikely. “The key to dealing with complexity is to focus on having good conversations about assumptions.... A good learning conversation is qualitative. It is about assumptions, not numbers” ([Govindarajan and Trimble, 2010](#), p. 125). Talking freely about one’s own and others’ assumptions hinges, in no small measure, upon a psychologically safe environment ([Edmondson, 1999](#); [Edmondson and Bransby, 2023](#)). Having good conversations about assumptions highlights the role that “boundary objects” ([Star, 1989](#); [Carlile, 2002](#)) can play in cross-boundary knowledge transfer; not only through pencil-and-paper sketches; but, many things—from prototypes, databases, CAD drawings, and forms and simulations to narratives—that “sit in the middle” and “are plastic enough to be adaptable across multiple viewpoints, yet maintain a continuity of identity” ([Star, 1989](#), p. 46)

Communication across knowledge boundaries is successful when it reduces the uncertainty and ambiguity that comes with engaging in innovation. For instance, by creating a plot of how events are related, people construct together “meaning and identity, the arguing of causality and the demonstration of human intentions” ([Hilligoss and Moffatt-Bruce, 2014](#), p. 531). In sum, communication across thought worlds is about making tacit knowledge explicit.

3.3. A conducive context for cross-boundary communication

Both social and relational aspects of handoffs influence collaboration and teamwork (LeBaron et al., 2016; Sutcliffe et al., 2014). Sutcliffe et al. (2004) argued that handoffs occur in a complex system with “horizontal differentiation of labor, vertical divisions of hierarchy and power” (p. 184). Handoffs are deeply embedded in the organizational culture and subcultures: “Although individuals may decide for themselves how they want to communicate, their behavior is likely to be constrained by the norms of their particular professional subculture” (Cohen and Hilligoss, 2010, p. 496). Further, LeBaron et al. (2016) found that coordination activities, such as questioning, repairing, and hesitating, were an important part of hospital handoffs. Such coordination activities were pivotal in revealing that something was wrong and needed to be changed before proceeding with the handoff.

A climate characterized by a high level of psychological safety is likely to enable innovation handoffs. Research has found that a climate of psychological safety is positively linked with organizational and team performance (Andersson et al., 2020; Baer and Frese, 2003; Bradley et al., 2012; Edmondson, 1999; Edmondson and Lei, 2014; Edmondson and Bransby, 2023; Faraj et al., 2009; Kark and Carmeli, 2009; Kahn, 1990), knowledge sharing and creativity (Kessel et al., 2012; Liu et al., in press). In general, psychological safety describes a work environment where employees are safe to speak up, ask for help, admit errors, and discuss problems without being rejected or punished (Baer and Frese, 2003; Edmondson, 1999; Edmondson and Lei, 2014; Kark and Carmeli, 2009; Kahn, 1990). With psychological safety, employees are more able to overcome anxieties, ask questions, and propose new ideas and information (Edmondson, 1999; Kahn, 1990). In the case of handoffs, where the main goal is to transfer information, responsibility, authority, and/or control in a sufficient manner, it is crucial that employees feel safe to share information openly.

Similarly, Roberts (2000) highlights the importance of trust, to ensure especially the transfer of tacit knowledge between departments. Personal relationships also ease the process of knowledge transfer (Cummings and Teng, 2003). Social integration mechanisms have been shown to be important to firms’ innovation efforts (Distel, 2019; Dávila et al., 2024). Face-to-face contact, socialization processes, and a shared social and cultural context, increase mutual understanding and trust in knowledge transfers (Roberts, 2000). These collaborative mechanisms “take into account the interpretive dynamics that separate the thought worlds” (Dougherty, 1992, p. 195).

In addition to perspective taking, the communication of tacit knowledge and a conducive interpersonal context, participants’ sense of ownership of the innovation project emerged as key to ensuring successful handoffs across organizational boundaries.

4. Psychological ownership

The theory of *psychological ownership* in organizations was introduced by Pierce et al. (2001), drawing from the literatures on the psychology of “mine,” possession, and property (e.g., Belk, 1988; Furby, 1978). Pierce et al. (2003) define psychological ownership as: “the state in which individuals feel as though the target of ownership or a piece of that target is ‘theirs’ (i.e., ‘It is mine!’)” (p. 86). Psychological ownership of material and immaterial objects at work is important because “[w]e spend large parts of our lives inside organizations; our incomes depend upon them; our worlds are shaped by the strategies these organizations pursue” (Whittington, 2019, p. 13). Pierce et al. (2001) further argue that psychological ownership has three underlying motivations. First, is efficacy and effectance—that is, satisfying the need people feel to be efficacious in their jobs. Second, is self-identity, meaning that ownership is a symbolic representation of the self. And third, is having a place. When we inhabit something, it becomes part of us (Heidegger, 2010). A sense of belonging and psychological ownership at work has a positive impact on cognition, a sense of self, and performance at work (Waller, 2020).

Psychological ownership reflects an individual’s awareness, thoughts and beliefs regarding an object, or “target,” which can be either material (like an object) or immaterial (like an idea) in nature (Pierce et al., 2001, 2003; Van Dyne and Pierce, 2004). Psychological ownership differs from legal ownership (Breiting, 2008; Dawkins et al., 2017; Hannah, 2004; Pierce et al., 2001; Pierce et al., 2003). Pierce et al. (2001) argue that: “psychological ownership can exist in the absence of legal ownership, and vice versa” (p. 307). In an innovation context, a target can typically be an idea, a task, or an innovation project (Dawkins et al., 2017).

4.1. Consequences of psychological ownership

Psychological ownership has been shown to influence several organizational behaviors and attitudes. First, it can enhance commitment to the organization (Ahmed, 1998; Dawkins et al., 2017; Van Dyne and Pierce, 2004), and to a problem or task (Sundström and Zika-Viktorsson, 2009). Second, it can create a sense of responsibility for the target (Furby, 1978; Van Dyne and Pierce, 2006). Third, psychological ownership can improve both quality and level of participation, engagement, and motivation (Breiting, 2008). Lastly, Van Dyne and Pierce (2004) emphasize that psychological ownership affects job satisfaction, organization-based self-esteem, and work behavior. Psychological ownership has also been found to be positively correlated with innovation outcomes in small family firms (Rau et al., 2019).

Additionally, scholars have identified that these processes can be self-reinforcing, so that psychological ownership and its effects on organizational behaviors and work-related attitudes mutually support and develop each other (Ahmed, 1998; Breiting, 2008; Dawkins et al., 2017; Pierce et al., 2003). Early involvement and shared goals (Bessant and Tidd, 2015); information (Pierce et al., 2003); as well as control (Pierce et al., 2003; Liu et al., 2012) also promote feelings of psychological ownership. Given this, we propose that psychological ownership may play an important role in innovation handoffs. Psychological ownership is distinct from, yet related to, the Not Invented Here (NIH) syndrome. Katz and Allen (1982) define the NIH syndrome as: “the tendency of a project group of stable composition to believe it possesses a monopoly of knowledge of its field, which leads it to reject new ideas from outsiders to the likely

detriment of its performance” (p. 7).

4.2. *Too much of a good thing?*

Excessive psychological ownership of one's own projects may be problematic. For instance, in identifying the NIH syndrome, [Katz and Allen \(1982\)](#) found that as employees actively participate in their own contributions and commitments over time, they feel responsible and “may come to rely more heavily on their own knowledge, views, experiences and capabilities, thereby reducing their attentiveness to outside sources of information and expertise.” Scientists and innovators have biased judgment related to internally versus externally developed knowledge, becoming predisposed to promote their own capabilities, in a form of self-enhancement ([Burcharth and Fosfuri, 2014](#)). The NIH syndrome is rooted in the perception that one's own contributions or ideas are better than contributions or ideas from others, creating a tendency to reject external contributions.

While psychological ownership describes the feeling of “mine” related to a target, the NIH syndrome describes the belief that “mine is better than yours.” NIH supports a kind of escalation of commitment ([Staw, 1981](#)), that is, the “tendency to escalate commitment above and beyond what would be warranted by the “objective” facts of the situation” (p. 584). In short, “individuals can become committed to a course of action simply because they believe consistency in action is an appropriate form of behavior” (p. 584). Psychological ownership, the NIH syndrome, and escalation of commitment describe related but distinct phenomena.

5. Methods

Innovation handoffs present a complex social phenomenon, best understood through a holistic, real-world approach ([Edmondson and McManus, 2007](#); [Yin, 2014](#)). An important part of our study was to gain a deeper understanding of the innovation handoff phenomenon and how it occurs in practice. We employed a multiple case study design, involving three Norwegian companies. Case companies were chosen based on four theoretical sampling selection criteria, elaborated below ([Eisenhardt, 1989](#); [Eisenhardt et al., 2016](#)). Employing multiple case studies on different companies in different industries puts our phenomenon of interest in focus, while minimizing the idiosyncrasies of any particular, case, organization, or industry ([Eisenhardt et al., 2016](#); [Stake, 2005](#)). Examining the same phenomenon across different settings provides more compelling evidence and more robust findings ([Yin, 2014](#)).

The first criterion was that a company had a strong focus on innovation. Second, the companies' innovation projects had to span multiple departments or units. Third, we wanted to study companies where we could interview employees in different positions, disciplines, and departments. Fourth, we sought companies from different industries to ensure we were not observing innovation handoff behaviors idiosyncratic to a particular industry ([Harris and Sutton, 1986](#); [Eisenhardt, 1989](#)). Our research design is what [Eisenhardt \(2021\)](#) called a common process design that “involves choosing cases about the same focal phenomenon in purposefully different settings (p. 150). That allows the differences and similarities across our three cases to facilitate theory development about the innovation project handoffs. “These considerations typically sharpen the empirical focus on the focal phenomenon, mitigate alternative explanations, and enhance generalizability” ([Eisenhardt, 2021](#), p. 149). We ended up with a sample of three case companies, which we refer to by the pseudonyms Energy Co.; Retail Co.; and Bank Co.

5.1. *Data collection and analysis*

Data were collected through semi-structured interviews and archival information. We conducted 20 semi-structured interviews with 18 people in our three companies over a four-month period. We used semi-structured interviews to maintain cross-case comparability ([Miles et al., 2014](#)). The interviews were mainly performed through face-to-face meetings at company headquarters, while a few were carried out by video conference calls or telephone. All interviews were conducted in Norwegian, the native language of all interviewees. The interviews varied in duration, lasting from approximately 20 minutes to 2,5 hours. In 19 of the 20 interviews, the interviewees consented to be audiotaped. These interviews were transcribed and translated. Notes were taken in all interviews. We took “notes on what the informants are telling us, conscientiously trying to use their terms, not ours” to help us understand their experience ([Gioia et al., 2012](#), p. 19). Our notes were helpful supplements to the transcribed interviews. In each case company, we interviewed a broad range of employees in positions such as CEO, Manager, Engineer, Project Leader, Researcher and Technician. We wanted to shed light on the handoff narrative from different perspectives in the organization. Talking to a diverse set of people is important to get a fuller story when exploring a new phenomenon.

Transcribed interviews were then coded by two people, and discrepancies in coding were resolved through discussion ([Gioia et al., 2012](#); [Strauss and Corbin, 1990](#); [Yin, 2014](#)). We then aggregated individual codes into groups for each case company to facilitate comparison ([Eisenhardt, 1989](#)). In this way, we combined coding the data and case analysis ([Ozcan et al., 2017](#)) to gain a deeper intimacy and understanding of our data.

We also analyzed archival data, including publicly available information from the companies' websites, and news articles concerning the case companies. Also, the case companies provided us with some internal material, such as documentation of routines and procedures, presentation slides, and annual reports, in addition to limited access to information from the companies' digital innovation portals. The documentary information served as a source for interview preparations, helping us generate and frame questions in the language of the organization, quality assurance of interview responses, and to provide additional input and details on specific topics. Key themes were identified in the transcribed interviews and field notes by two researchers. Any differences in “coding” were resolved, the themes we identified were grouped and sorted. In this process some themes were merged. The three cases were analyzed and written-up in a long format before we conducted a cross-case analysis looking for cross-case-patterns ([Eisenhardt, 1989](#)).

We were interested in the innovation handoff process in general, and in each of the three companies, informants mentioned more than one example of innovation project handoffs. We asked questions about how each organization worked with and developed innovation projects, which people were involved, and about innovation teamwork, innovation handoffs, roles and leadership, communication, and routines. Our research aim was to illuminate factors that contribute to successful innovation in established organizations, specifically by focusing on how handoffs unfold. We were especially interested in when and why people were able and willing to engage in the behaviors that helped ensure effective handoffs.

Writing up qualitative data analysis frequently portrays the process of reviewing the literature, collecting data, and then analyzing as more linear than is actually the case. Following convention, an introduction leads to a brief review of the literature, followed by an analysis and a conclusion. However, qualitative research involves an open mind and attention to surprises. This project was no exception. We set out to explore handoffs across knowledge domains in innovation projects in organizations. We asked about terminology, boundary objects and perspectives that we expected would reflect different thought worlds. But—as often happens when doing in fieldwork—once we engaged with informants the importance of “ownership” emerged as an important theme. Flexible and opportunistic data collection “allows investigators to take advantage of emergent themes” (Eisenhardt, 1989, p. 533). This allowed us to take advantage of opportunities as they presented themselves during our fieldwork. This led us to search and review the literature on psychological ownership.

5.2. The companies

Energy Co. is a large, multinational company that provides a wide range of energy solutions in both B2B and B2C segments. The company's headquarter is in Norway, but they have facilities across the world and about 30 000 employees. Energy Co. is involved in the entire value chain through their close relationships with suppliers and buyers. The company has a 50-year-old history within the energy industry with a commitment to developing new technology. Handoffs take place from the unit with a new idea to the project team and from the project team to operations.

Retail Co. is a large company in the B2C market, providing a wide range of consumer goods. They have offices and production facilities in various location across the world, and approximately 15 000 employees. The corporation's headquarters are in Oslo. They have several subsidiaries, with offices and production facilities on several locations around Norway and other countries. Retail Co. has a strong position in the Norwegian market.

Bank Co. is a medium-sized company with 1000 employees, with offices in the region around, one of Norway's largest cities. The company is part of an alliance of banks, which sets some limits regarding the company's business model. Bank Co. operates both in the B2C and BTB markets, which both are rapidly changing towards digitalization and automation. Bank Co. has a strong customer orientation and has through its 200-year history been engaged in its local community. This community engagement constitutes an important part of their business model and gives the company a competitive edge.

6. Findings

Our research showed differences across departments in how people viewed the shared work. Further, we found that the three companies employed different approaches to enabling effective handoffs in the innovation projects studied. Effective innovation project handoffs between organizational departments happen with awareness that mental models of people from different units differ and that these differences can be a source of value. Successful innovation project handoffs occurred when participants explicitly highlighted the value of what other units do, and communicated carefully about specific capabilities, assets, and perspectives as a way to uncover taken-for-granted assumptions that differ across departments. We also observed that transferring key people from one unit to another helped maintain psychological ownership of the innovation project, also enabling handoffs. Our analysis suggested that psychological ownership of innovation projects fosters successful handoffs across organizational boundaries. Below we discuss why psychological ownership matters for innovation handoffs and why involvement helps create it. We acknowledge that psychological ownership may have downsides but conclude that its benefits far outweigh its risks. Although psychological ownership has been found to correlate with innovation in small family firms (Rau et al., 2019), our study is the first to study the role of psychological ownership in innovation project handoff across departments (and thus across thought worlds) in large functionally diversified firms.

6.1. Communicating across thought worlds

Our analysis supported findings in prior research showing that differences in mental models associated with different departments made handoffs challenging. Different mental models create skepticism, misunderstandings, frustration, discussions, diverging expectations, motives, and goals in handoffs. This is no small part of why Dougherty (1992) use the label “different thought worlds”. Therefore, when people are aware of these differences, they are better able to coordinate handoffs. The Project Leader in Product Development at Retail Co. makes this point well.

The different departments have different focus areas. Marketing is most concerned with consumers, trends in the market, and what competitors do. Product development and the technology department may be more concerned with what is possible with today's production equipment.

Having different focus areas does affect both how people see things and what they see, and this in turn affects how they communicate with one another.

At Retail Co, the Technical Manager in Production also identified thought worlds as a possible source of frustration but went further in recognizing that they also lead to better solutions, explaining, “If you do not realize that people have different interests, then I think you might get frustrated in these kinds of processes. ... You need to realize that the good solutions come in the interfaces [between different departmental thought worlds].” In short, if the people engaged in an innovation project handoff process have low awareness of differences in thought worlds it can be troublesome for the innovation handoffs.

Lacking awareness of another organizational department’s capabilities can also pose challenges and slow down the innovation process. A technical production manager at a factory at Retail Co., pointed out that the production unit has a job to do in the early stages of an innovation process. The problem is that project handoffs do not always happen that way. He said that from the factory’s perspective “it is quite frustrating,” because the factory will receive a product that is to be produced “without anyone having thought about how to produce it, and what investments need to be made until very late in the process.” This leads to delays and often multiple iterations after the initial “handoff” to the factory. He continued: “But we also have a job to do [in the idea stage] in terms of saying what machines we have, what these machines can make, and what our suppliers say about production equipment.” When the upstream unit does not know the capabilities of the downstream adequately, but bases their new solution on assumptions, it causes frustrations and delays.

It became clear that overcoming the challenge of cross-boundary communication required some awareness of how people in different organizational departments thought differently. Informants in all three companies emphasized awareness as easing innovation handoffs because, it motivates people to engage in activities that help them understand each other’s ways of thinking. Boland and Tenkasi (1995) referred to this as perspective taking. Our case companies used various mechanisms for enabling knowledge exchange between units, with their corresponding communities of knowing (Boland and Tenkasi, 1995) or thought worlds (Dougherty, 1992). Bank Co. used designated “ambassadors” to overcome challenges related to different viewpoints and motives between the innovation unit and the branch offices where new solutions were to be implemented. Retail Co. instead employed multidisciplinary teams throughout the development phase, where employees from different disciplines, were included as team members. (We also found that Retail Co did not sufficiently involve the factory’s perspective.) In general, bringing multiple departmental thought worlds into a project gives rise to new cross-understanding (Huber and Lewis, 2010) that benefits both the innovation project and facilitates handoffs. In addition to awareness, our data highlight the value of ensuring goal alignment and common handoff criteria for the delivering and receiving unit, to overcome the mental model challenges.

Although introducing communication challenges, the benefits of bringing diverse perspectives to bear on any given problem or opportunity are well established. Good solutions come from talking and thinking together; it is important to ensure early on that such discussions remain within the realm of what is possible. When this does not happen, trouble ensues. Retail Co. used representatives from downstream units where the innovations were to be produced to minimize negative externalities in the form of re-work.

In short, the challenges of cross boundary communication have long been clear, and our focus on handoffs allows us to identify enablers and mechanisms for overcoming them. We identified four enablers of innovation project handoffs. The first three are discussed next in Section 6.2, and the fourth is the focus of Section 6.3.

6.2. Enablers and mechanisms for effective innovation project handoffs

First, establishing mutual understanding of project goals reduces uncertainty, and thus helps overcome challenges related to differences in thought worlds across departments. Project Leader 2 in Bank Co. explains: “I think that as long as you know what the problem is, have faith in what you are doing, and establish clear goals, it is easier to get around different ways of thinking and the corresponding challenges.” Having common goals across departments, in addition to seeing the potential benefits of having multiple perspectives represented enable organizations to overcome the challenges of collaborating across departmental boundaries. Leading Engineer in Department Y at Energy Co. also highlights this challenge in the handoff from innovation project team to operational unit: “To get something implemented is really most dependent on getting the user [receiving unit] to see the value of it.” Common goals can facilitate seeing the value of what others have created.

By deliberately *showcasing the value of what different groups do*, companies can improve coordination effectiveness. An upstream example comes from Bank Co. where they often had a member of the receiving team be involved in the development of the new solution (upstream), Project leader 1 of the Business Development Unit at Bank Co told us that: “We also showcase their involved colleagues and use this in the implementation. Here, we almost do not present anything. Instead, the employee from the receiving unit, who has been involved in the development, presents essentially the whole solution.” This is important because they know the thought world where the new solution is to be implemented and used. Project leader 2 points out that since they are from the downstream unit, they know “their everyday life”, their “terminology” and their “mindset.” And that knowing this is important in effectively communicating the new solution to them.

Second, companies improve handoffs by deliberately *uncovering taken for granted assumptions* about other groups, facilitating innovation project handoffs by reducing ambiguities (Brun and Sætre, 2008) that impede innovation project handoffs. An everyday incident at Retail Co. illustrates how assumptions and lack of awareness of differences between two departmental thought worlds complicates a seemingly simple task of sharing information. Assistant Director in Marketing & Innovation describes:

An employee from the Production unit, who is used to working on the production line is not used to presenting PowerPoint presentations and does not necessarily realize that this type of presentation is what the project manager wants when he or she asks for something to be presented.

This is about communicating across thought worlds. Here we see taken for granted assumptions in terms of how information is

communicated. He continues: “Also, often in such situations the project manager has not communicated well enough, because in the head of the project manager it is completely natural and self-evident [that you use Power Point when presenting information].” The person from the production unit assumes that he is expected to “tell it” and the director assumes he will “present it,” which includes documentation in the form of a Power Point presentation.

Companies enabled sufficient handoffs by overcoming the parochialism of thought worlds. They did this by *carefully communicating about capabilities, assets, and perspectives* across different organizational subunits. One of the project managers at Bank Co. makes this clear. “So, the interdisciplinarity is really just a great many good discussions, but we spend a lot of time on it. Because one does not share the same view.” As everyone comes to the innovation project with their own unique perspective, open communication across the diverse thought worlds is crucial.

Here, we see the role of perspective taking, where these narratives surface and challenging the implicit assumptions and the interpretive structures that characterize different mental models. This is a first step to overcome barriers related to different departmental thought worlds.

The taken for granted assumptions that can impede sufficient handoffs are often rooted in parochialism. As project manager in Bank Co said,

Because there are many that wishes to assert their own view. ‘I work at the customer center and we have a better grasp of this’, or ‘I work in a physical office and meet people in person, you just talk on the phone. ... [or] ‘saving is much more important than insurance’.

These parochial, or partial views, limit information sharing and can impede handoffs, when participants in the handoff believe they already have the complete picture. But as the project manager notes “It is very difficult to find people in the organization that has the ability to see the full picture.”

Third, companies enabled handoffs by *transferring people from one team in the value chain to another* to facilitate the handoff of the innovation project from one departmental thought world to the next. Our case companies used this process working both upstream and downstream in their organizational innovation process.

A downstream example comes from Energy Co., Principal Researcher in Department W recalls a project where the receiving party of a handoff were very skeptical in the beginning: “They were all thinking: Here come those researchers again. Many were mostly interested in doing what they always had done.” This acted as a barrier for the handoff. However, when the delivering unit included a representative from the receiving unit the handoff went more smoothly: “We wanted them [operational unit] to use our innovation. So, luckily, we got one of them [from the operational unit] into the project, and he took over eventually. Then it became easier to communicate with the others [in the operational unit receiving the project].” At Energy Co. differences across departmental thought worlds (Dougherty, 1992) are enough to act as a barrier for innovation handoffs.

We notice it every single day that there are many in Energy Co that work with oil and gas, most of them see no big point in doing this renewable-stuff. In part because they don’t know about it, they not very concerned with it, and they feel that what they do is more important. (Project Manager, Energy Co. E3)

Mindset barriers related to what is most important were also present in the value chain in the same technology area. Energy Co. used boundary agents to overcome mindset barriers. In another unit at Energy Co. it was common practice for one person (or more) to follow along with the project as it was handed over. The manager of a technological area X in Energy Co. talked about innovation project handoffs and said: “Yes, for example, a reservoir technology, there a whole group transferred to the customer [internal operational unit] together with the technology. Those who had developed the technology moved to the customer.” In this case, it was not one person who moved with the technology, it was the whole team.

This routine works well for them, but it varied how many people that follow the project downstream. He continued: “Sometimes you can move the whole group, and other times just one key person to continue the project.” What then determines if one person, or a whole group, is “handed over” along with the technology? He argues that this depends “on ownership, and on what the threshold is for the customer to use the product.” This manager makes the purpose of having people follow the project downstream very explicit. It is to create ownership and ensure implementation and use of the new solution. When people are transferred across units and how many people are transferred depends primarily on the level of psychological ownership. In other words, the level of psychological ownership is key in determining how many organizational members to transfer from one unit to the other along with the innovation project. This is also an issue of timing, if it requires “the customer had dedicated people that had to be trained specifically that it would take a long time before this was up and running.” And, an issue of final implementation and use, in his words: “If you just threw the baton to them, this would have died on day 2, truly.” Transferring people across organizational units enabled these organizations to overcome the barriers of different thought worlds (Dougherty, 1992) and facilitated perspective taking across organizational units (Boland and Tenkasi, 1995).

6.3. Psychological ownership and boundary spanning

Respondents in all three companies talked about the importance of a sense of “ownership” in their innovation projects. They talked about the experience of ‘being a part of something’ and contributing to something. These comments alerted us to the potential role of psychological ownership.

For innovation handoffs to be successful, the challenges of communicating across organizational boundaries must be overcome. If not, an innovation project might develop in wrong direction, be neglected, or terminated. In our data, psychological ownership

emerged as a factor that helped people overcome many of the challenges associated with the innovation project handoff process. Psychological ownership motivated participants to come up with solutions ranging from including all relevant employees as team members, involving key employees from the receiving unit prior to the handoff, to including some employees from the delivering unit after the handoffs. Being included as part of the team created a sense of commitment to the project in the receiving (downstream) unit and helped the companies overcome differences to facilitate close collaboration and communication during innovation handoffs.

Psychological ownership emerged as a crucial factor for succeeding with handoffs between departments in our interviews in all three companies. An Engineer in Department Y at Energy Co. made this explicit: "It is important that people believe in the ideas and feel ownership of them" and a Project Manager in Department Z at Energy Co elaborates: "Feeling ownership is vital. You have to be motivated and want to get it done." The Senior Advisor in Department V in Energy Co. concludes, "I think it is very important. If someone does not feel ownership both before and after [the handoff], then it will stop abruptly. ... I am sure that if the receiving party is not interested, then it [the innovation project] will die."

Psychological ownership to an innovation project enables and facilitates boundary spanning and makes people across departments feel like they are part of the project, and the innovation project is theirs.

6.4. How psychological ownership helps handoffs

How psychological ownership fosters successful handoffs across department units is perhaps best illustrated by what happened in situations where it was absent. The Business Development Manager at Bank Co. recalled a situation where an entire innovation project abruptly stopped after the handoff. "When we handed it over, we had training of employees [in the receiving unit] in implementation. The training was carried out, but after that nothing more happened. It was just packed up and abandoned, and no one used it. It [the solution] just died completely." He continued "we do not know exactly why this happened, but it was probably because the employees did not see the benefits and feel the commitment." In other words, users in the receiving unit felt no ownership to the project. In this situation no people were transferred with the project across departments, there were also no explicit communication of common goals across units. An example from Energy Co. shows that there are challenges even when key people are transferred out the receiving unit prior to the project handoff. According to Project Manager, Department Z:

We have experienced that ownership of the innovation project disappears when engaged employees on the other side [receiving unit] are replaced. It is a real bummer when this happens, because up until that point you might have spent years and millions on the project.

These examples illustrate the importance of ensuring psychological ownership of, and commitment to the innovation project in the downstream unit. In established organizations, people are often transferred between units to gain broader experience of the organization. This is used as a way to develop management and executive talent. But when people are transferred to a different unit, or promoted, it can lead to confusion about incoming innovation projects that the departing manager might be committed to and have ownership of. Thus as we see from the above example, this way of developing talent can come with a significant hidden cost.

Project Leader 2 at Bank Co. also stresses this issue: "If the employees [in the downstream unit] have ownership towards the innovation project and the innovation process, it is much easier to succeed with implementation." Both the Principal Researcher at Department W, and the Head of Department X at Energy Co. told us very similar stories about projects halted or abandoned due to issues we coded as lack of psychological ownership in the downstream units. If the downstream unit does not feel ownership towards the received innovation project, the work on the innovation project might not be followed through after the handoff. The manager of department X in Energy Co. illustrated this well, stating:

We have found that it is very important to include all actors who will be important later in the project, as soon as possible in the process. So that we don't suddenly one day throw the technology over to somebody who has not even heard of it. ... We are talking about passing the baton in a relay race. But for us, we cannot just throw the baton to the next guy and ask him to run. Then he will not run. We need to have a really long exchange zone. It really cannot become long enough. Ideally you would run together from cradle to grave. So, you almost run next to each other the whole way. And along the way you gradually take over. That is what works, ownership.

This shows that effective innovation project handoff is not an event, it is a process. This process takes time and rests on involvement over time and on the creation of a sense of ownership in the downstream or receiving unit.

In all three of our case companies, we see that psychological ownership is the *sine qua non* of innovation project handoff between departmental thought worlds. We have summarized their key findings on psychological ownership from each case in [Table 1](#) below.

Both Energy Co. and Bank Co., experienced challenges related to a lack of psychological ownership towards the innovation project in the receiving (downstream) unit. In the handoff of the innovation from the project development team to operations, our informants told us about the following challenges when the innovation project; stops abruptly; is rejected, is neglected; loses relevance over time; is misused by the receiving unit; or is not used by the receiving unit.

6.5. Creating a sense of psychological ownership

Our analysis of the three cases suggests that creating involvement across units fosters a sense of ownership of an innovation project and facilitates handoffs across organizational departments in established organizations. For example, the manager of Department X at Energy Co. explained how they work to create psychological ownership:

Table 1
Summary of key findings on psychological ownership.

	Energy Co	Retail Co	Bank Co
Psycho-logical ownership	<ul style="list-style-type: none"> - Psychological ownership is emphasized as crucial for innovation work, and particularly for handoff success. - Psychological ownership creates motivation. - The receiver in handoffs need to have psychological ownership lest the innovation project might stop. - Employee involvement (over time) is pointed out as effective in creating psychological ownership. - Employees from receiving unit are often involved in the work of the delivering unit prior to handoffs. - Employees from the delivering unit are often involved in the work of the receiving unit after the handoff. - Individuals with psychological ownership can act as enablers during handoffs, but those with too much are found to hinder effective handoffs. - Uncertainty reduces psychological ownership. 	<ul style="list-style-type: none"> - That employees have psychological ownership and are willing to prioritize and commit to the innovation project is important in all innovation work at Retail Co., especially handoffs. - Too much psychological ownership can lead to undesirable effects (fail to recognize shortcomings, wrong prioritization, and direction). - Employee involvement throughout the innovation process creates psychological ownership to the innovation project. - Early employee involvement is important for creating psychological ownership before handoffs. 	<ul style="list-style-type: none"> - Psychological ownership important for innovation handoffs. - Many innovation initiatives make it more challenging to create psychological ownership to each innovation project. - Crucial that the receiving units have psychological ownership towards the innovation project. - If receiving unit does not have psychological ownership to innovation project after handoff the project can abruptly stop. - Early involvement, tailored preparations, and appraising the receiving unit's contribution are important measures to create psychological ownership after handoffs. - Ensuring that project owners and project leaders have psychological ownership is important to facilitate innovation handoffs - Both having too much and fading psychological ownership is challenging.

We work together. So that the receiving unit see the big picture of what we are trying to do. ... When we bring something new, there is typically considerable resistance throughout the unit. So, you have work for quite some time. ... Gradually, more and more people think that this [the innovation project] is a good idea.

In short, through their involvement in the project over some time, employees began to feel that they were a part of, and had ownership of, the project. This corresponds to our findings in Bank Co. and in Retail Co. It takes sustained effort and involvement over time and across different organizational departments to build psychological ownership of innovation projects. The Marketing Consultant in the Marketing and Innovation department at Retail Co. gives another example of this:

When you work in multidisciplinary teams, in the stage-gate-model, the most important thing is that you want to participate and prioritize it [the innovation project]. Prioritization, commitment, and feelings of ownership towards the innovation project are the most important things to get things done in a good way.

Again we see that it is involvement over time that enables a sense of psychological ownership to innovation projects to develop. We found two forms of involvement that matter.

First, involving employees from a unit that will later receive work from the project, well in advance of the handoffs, emerged as a helpful practice. Otherwise, as the Head of Department X at Energy Co. experienced, employees in the receiving unit were not interested in the innovation projects prior to handoffs, and were skeptical or disinterested when receiving the innovation project:

The problem is that users [in downstream unit] are not involved in the innovation project before it is at a certain maturity level. They are often more concerned with what is going on tomorrow, so they do not think much about what is coming further ahead. And then at some point they become skeptical.

This awareness led Energy Co. to involve employees from the receiving unit in an earlier phase of the innovation process to build up interest, engagement, and feelings of ownership. Bank Co. did much of the same, Project Leader 1 told us:

Feeling ownership is important [in handoffs]. ... We try to ensure that the receiving unit feels ownership from the start. ... We need to attach the innovation project to the challenges that they [the receiving unit] experience. It is not always obvious to them that it [the innovation project] actually fits their needs.

Bank Co. accomplished this, in the same way, by involving employees from the receiving unit in the development phase to give input and feedback.

Second, continued involvement of employees from the delivering unit, after the handoff was a helpful practice. We only found this in the Energy Co. case, and not in the other two cases. As the Project Manager in Department Z at Energy Co. emphasized: "We try to organize so that some of the employees that have been involved in the development of an innovation project also participate in implementation. This makes the implementation more effective, and it goes a lot easier." As Project Manager, Energy Co., E3, explained:

It is worse when one changes personnel on the receiving side because the ownership of the project and the results and implementation disappear sometimes, in our experience, when one replaces people on the other side. And that is too bad

because it can be a project that you have spent years and many millions on [developing]. It happens, unfortunately, but thankfully not very often. But that's the way it goes.

Creating psychological ownership in an innovation project across upstream and downstream units was important for minimizing the risk of handoff failure, and ultimately of innovation project failure.

6.6. Hints of a downside to psychological ownership

Our analysis, as noted, suggested that psychological ownership facilitated successful innovation handoffs. But can you have too much psychological ownership? We found some indications that too much psychological ownership might create other risks for handoffs. All three companies studied reported situations where employees taking an intense personal interest in an innovation project resulted in developing something that had little value to the whole company. In a sense, these individuals lost sight of the larger picture because of their commitment to, or identification with, the project. In these cases, employees overlooked the downsides and weaknesses of the project and were unwilling to stop working on it in a timely way. In this way, too much psychological ownership towards an object (i.e., work, processes, actions, problems, etc.) may lead to escalation of commitment (Staw, 1981) that inhibits terminating failing innovation projects (Daly and Sætre, 2023; Daly et al., 2012). We abductively conjecture (Sætre and Van de Ven, 2021; Sætre and Van de Ven, 2024) that diverse (cross-functional), if not cross-departmental, involvement in the innovation project is a good way to minimize this risk. However, there are other factors explaining the escalation of commitment than psychological ownership, and we cannot conclude that there are serious risks to organizations if employees care too much about a project.

Psychological ownership and the benefits of diverse expertise.

In all three of our cases, participants pointed to differences in the ways people think as something positive – as vital to improving the outcome of innovation projects. During handoffs, the benefits of different departmental thought worlds include new insights and viewpoints; detection of flaws and errors; reduction of externalities, and better end solutions. Thus, in the same manner as different mental models in multidisciplinary teams are found to lead to better solutions (Boland and Tenkasi, 1995; Dougherty, 1992; Moenaert et al., 1994); different mental models and perspective taking across organizational units can also lead to better solutions in innovation project handoffs across organizational boundaries.

We suggest that both increased awareness of differences in thought worlds across departments and how they affect innovation project handoffs, along with ensuring goal alignment, help overcome the challenges and harness the benefits of diverging perspectives (such as new insights and viewpoints; detection of flaws and errors; and better solutions) in any innovation projects.

7. Discussion

We conducted three case studies of innovation projects to better understand the challenges and opportunities of project handoffs at the boundaries between organizational departments. Each case was in a different company and industry. We launched our research fully aware of the challenge of the “thought worlds” that take shape in different expertise domains and functional units. Drawing from prior research that had identified both the challenges of cross-boundary communication and factors that help overcome these challenges, we hoped to learn something new by focusing on handoffs.

Our analysis revealed four enablers of innovation project handoffs in organizations. The first is deliberate communication and establishment of common goals across units. Establishing a sense of shared destiny and clarity about shared goals across organizational units helps ameliorate the NIH syndrome. Second, showcasing and communicating the capabilities and assets of other units helps people understand each others' perspectives, and the value of what other groups in the organization do, facilitating effective handoffs. Third, the transfer of people across organizational units also emerged as an enabling factor. Fourth, our interview data pointed toward the role of psychological ownership, a construct identified in prior research, but not applied to innovation projects. Ours is thus the first study to address the role of psychological ownership in effective innovation project handoffs across organizational boundaries. As we began to sense its importance, we listened closely to participant reports of their challenges and successes, so as to better understand the role of psychological ownership in enabling successful handoffs.

Although prior research has linked psychological ownership to several beneficial organizational behaviors and work-related attitudes, finding the appropriate level of psychological ownership is crucial. Pierce and his colleagues (2003) explain:

Much like the overly possessive child, individuals may be unwilling to share the target of ownership with others or may feel a need to retain exclusive control over it. Such behaviors, in turn, will likely impede cooperation. People may also become preoccupied with enhancing their psychological possessions and may become, for instance, obsessed with improving their “toys” at the cost of their family or community (p. 101).

One possibility therefore is that too much psychological ownership will promote undesirable behavior and hinder cooperation, while too little will lead to inattention. The relevance of these dynamics for interdepartmental handoffs in innovation projects is clear. Medium to high levels of psychological ownership seem to facilitate innovation handoffs, but non-existent or low psychological ownership is not sufficient to engender engagement. And overly high psychological ownership may prove detrimental both to the innovation project itself and to innovation handoffs between department in organizations. The present study's investigation of handoffs provided a chance to explore the effects of psychological ownership further.

7.1. Contributions

A primary contribution of this inductive study is that psychological ownership in an innovation project facilitates cross-boundary handoffs. Future research is needed to establish whether and how different levels of involvement (e.g., time commitment, project importance for each participant), foster different levels of psychological ownership, along with the impact on project success. When employees have worked on a project for a long time, and put considerable effort into it, they are likely to feel attached to the project. This can give rise to feelings of ownership and motivation. Psychological ownership thus develops and matures over time and effort put into the innovation project.

Other enablers of handoff success include uncovering taken-for-granted assumptions, deliberately showcasing the value of what other units do, carefully communicating about capabilities, assets, and perspectives, and transferring people from one team to another along with the innovation project (e.g., Edmondson and Harvey, 2017). These activities help make tacit knowledge more explicit and reduce ambiguities that impede innovation project handoffs across organizational units. Psychological ownership may be an important mechanism for translating these enablers into results.

Overall, we suggest that each of these enablers helps create psychological ownership of innovation projects that cross organizational boundaries. This has implications both for managerial practice and for future research. Managers wishing to be successful at innovation should seek to increase psychological ownership among participants in innovation projects—in particular in downstream organizational units—by emphasizing the enablers we described. Creating psychological ownership improves the quality of innovation handoffs and ultimately increase the chances of innovation success.

7.2. Future research on psychological ownership

Our study gives insight into how innovation handoffs are carried out in practice in three Norwegian companies. We found that psychological ownership creates motivation, commitment, and engagement in the innovation project. The challenge is to create a sense of ownership to innovation projects across organizational units. Innovation handoffs are not straightforward, linear, or easy, and are described as an iterative process by employees in the case companies. Handoffs vary in duration, and require much more coordination than can be accomplished in a single meeting. Innovation project handoffs are influenced by the context in which they occur, and the three case companies employed different innovation project handoff strategies.

Our findings show that when a unit does not experience psychological ownership towards the innovation project, the employees are not receptive, and might end up rejecting it, similar to what Katz and Allen (1982) described in the NIH syndrome. In many ways psychological ownership in the downstream unit is an antidote to NIH. Energy Co. and Bank Co. have both described occurrences of such situations, where the receiving unit rejected the innovation project after handoff. Investigating the possible relationship between these concepts in an innovation project, and especially an innovation handoff, context is a topic of high interest for further research. Feelings of ownership towards the innovation project are decisive to ensure that the innovation project is followed-up after a handoff. In all our case companies creating psychological ownership to the innovation project was central to successful innovation handoffs.

Innovation handoffs is a highly relevant topic for further investigation. We believe that gaining a better understanding of psychological ownership in innovation handoffs can benefit companies trying to succeed with innovation, in an increasingly competitive market, where innovations continue to fail at alarmingly high rates. Psychological ownership in innovation projects is something that innovation managers should be aware of and carefully manage to reduce obstacles to innovation created by organizational boundaries and increase the chances of successful innovation project completion. Innovation is not the only complex knowledge process in organizations; we encourage future research on other complex organizational processes to gain a broader understanding of how psychological ownership of organizational processes affects performance outcomes.

CRediT authorship contribution statement

Oda Dregelid: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Sofie Rud Zimmer:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation. **Alf Steinar Sætre:** Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Amy C. Edmondson:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis.

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