Shared Leadership in Innovation Project Teams
Two Case Studies
Preface

My aim is to write a thesis that is relevant for both scientific and practical purposes. Because of changes in the organizational environment, such as new forms of organizing work and the increase of knowledge workers, the traditional concept of leadership needs to be rethought. I find it interesting to think of leadership as something that is shared and distributed among a group. Incidentally, the book ‘Gedeeld Leiderschap’ by Dijkstra and Feld (2011) received the title ‘management book of the year 2012’, which also shows the general interest in this subject.

The accomplishment of this research can be characterized as an intensive process of reading, rethinking and discussing. Hereby I would like to take the opportunity to thank the people who supported me during this whole process. First of all, I would like to thank Liselore Havermans, my supervisor from the University of Amsterdam. Right from the beginning she was very enthusiastic about the subject of my thesis which gave me support and motivation to write a valuable study. She gave me strength and confidence when I felt unsecure about the thesis progress and encouraged me to rethink and develop my own ideas. Moreover her constructive feedback especially from an academic point of view helped me throughout this empirical research. Second, I would really like to thank Matthijs Schilder, consultant from AMI, for putting much effort in keeping me focused and for the interesting discussions during our meetings. Thanks to his role as a coach and spar partner, I was able to think broader about the subject of leadership.

Moreover, I really appreciated the honesty and openness of the interviewees who participated. Therefore I would like to thank the two project teams for helping me with my research. Conducting the interview was actually the part that I most enjoyed. Their valuable contributions made it possible to write this thesis.

Finally, thanks to my family and friends for their support and interest in this research. I hope you enjoy reading!

Leonie van Lith
Amsterdam, April 2012
Abstract

Due to the growing interest in the phenomenon of shared leadership and the lack of research within the field of project leadership, this study aims to contribute to a better understanding of how leadership is manifested within innovation project teams. Therefore an explorative and qualitative study is conducted including interviews and observations in two case studies. In innovation project teams, which are characterized by interdependency, creativity and complexity, the development of shared leadership is likely to occur. The findings of this study suggest, that leadership within project teams is partly exercised by multiple team members. Sharing leadership implies, that multiple project team members simultaneously engage in the leadership process by providing and receiving it. Next to this, the findings indicate the importance of having a key figure within the project team, the project leader. The project leader provides vertical leadership by taking up the necessary leadership functions. Both, vertical and shared leadership, are complementary to each other and therefore relevant within project teams. This study may increase the awareness within the scientific and practical field to address leadership within project teams from a shared perspective, as shared leadership can lead to an increased performance within project teams.

Keywords: (innovation) project teams, leadership, shared leadership, vertical leadership, functional leadership
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1 Introduction

“The special leadership problems inherent in modern decentralized ways of organizing – through high-performing teams rather than bureaucratic command structures – are most visible in project work and the observation that an increasingly complex world requires competence profiles that are broader than what can possibly be expected to be found in one single person also needs to be acknowledged in project-based work.” (Lindgren & Packendorff, 2009, p. 296)

Working in project teams is becoming one of the most important organizational activities to stay effective, efficient and competitive in today’s dynamic and challenging environment (Kaulio, 2008). Firms are confronted with technical challenges and frequently innovation project teams are set up to cope with these particular challenges (Fong, 2003). Due to the growing amount of project based work, the interest in project management increases. As a result, project management is in continuous development as a profession, but also as a field of research (Crawford, Pollack, & England, 2006). Within this field of research, the early project literature is strongly dominated by a task perspective. This is nowadays shifting towards a more leadership perspective, with a focus on the project leader (Lindgren & Packendorff, 2009).

Likewise, in the leadership literature another shift is noticeable (Horner, 1997). Decades of research on leadership has been devoted to the top down approach, where leadership resides in a single person, who is hierarchically positioned above a group a people (Bass, 1990). But as organizations face ongoing environmental and economic changes, such as the globalization of markets and the advances in informational and communication technologies (Dess & Picken, 2000), it is becoming ever more difficult for a single leader to possess all the required qualities, skills and capabilities to successfully lead an organization or an organizational unit (Pearce, 2004). As a consequence, the way leadership is understood has developed further on the notion of a shared leadership perspective (Horner, 1997; Pearce & Conger, 2003). This shared leadership perspective addresses leadership as a natural process that is based upon mutual influence among multiple individuals (Yukl, 2007). Hence, the fundamental difference between traditional top-down leadership, also referred to as vertical leadership, and shared leadership, is that the former paradigm refers to leadership exercised
by a single appointed person, whereas the later paradigm refers to leadership as a collective process (Carson, Tesluk, & Marrone, 2007). Yet, these advances in the leadership thinking do not imply that vertical leadership is outdated, rather both perspectives are complementary to each other (Day, Gronn, & Salas, 2004; Pearce, 2004). Shared leadership is seen as an emergent team property, which is based on upward, downward and lateral leadership influences across different people (Carson et al., 2007). Moreover, shared leadership is co-constructed, as it emerges when members collectively engage in both providing and receiving leadership (Engel Small & Rentsch, 2011; Ensley, Pearson, & Pearce, 2003; Pearce & Conger, 2003; Uhl-Bien, Marion, & McKelvey, 2007). Within a team, the development of shared leadership can be supported by an internal team environment that stimulates team members to share leadership functions (Carson et al., 2007).

In order to better understand shared leadership, the current research explores the internal key factors, which can support the development of shared leadership. To further understand how shared leadership manifests itself on the basis of mutual influence processes, it is particularly interesting to know how different sources of influence interact with each other, which has so far been neglected within the existing literature on shared leadership. In essence, shared leadership is about the distribution of leadership behavior (Carson et al., 2007; Engel Small & Rentsch, 2011; Gronn, 2002). Consequently, research on shared leadership requires an understanding of who provides influence to others and who receives it from others. That is why the current study adds a functional perspective on shared leadership, that addresses the distribution of different leadership functions among team members. Functional leadership adopts a team-centered view, which subsequently implies that different team members can influence each other, and thus leadership can be exercised by multiple persons, who take on the leadership functions (Burke, Stagl, Klein, Goodwin, Salas & Halpn, 2006). Studying shared leadership from a functional perspective allows the researcher to get a complete and broad view on how leadership can manifests itself within a team, while taking into account both how different leadership functions are distributed across the team members and how team members mutually influence each other, by providing and receiving leadership.

The aim of this research is to contribute to the field of project leadership, with a particular focus on shared leadership within innovation project teams. This specific context is used because shared leadership is likely to occur in teams that deal with interdependent, creative and complex tasks (Pearce, 2004). Therefore the main research question is: How is leadership manifested within innovation project teams? To answer this research question, the current study explores the internal factors within the studied project teams. After that, the
study describes the distribution of different leadership functions across the studied project team members and indicates how these team members engage in the two sided activity of both providing and receiving leadership.

This research starts with providing a literature review on project leadership, discussing the role of the project leader and the possibilities for shared leadership in innovation project teams. Further, the literature review elaborates on the phenomenon of shared leadership. Therefore first, the shift from traditional vertical leadership to shared leadership is given. Then the internal factors that impact the development of shared leadership are explained. Hereafter, shared leadership is addressed from a functional perspective, while briefly describing each leadership function within a team. Next, the methodology of this research is given, followed by a description of the obtained results. After that, the discussion is provided, which also includes practical implications, some limitations and suggestions for future research. Finally, this research ends with a conclusion.
2 Literature review

The first part of the literature review describes the ongoing developments in project leadership, emphasizing the role of the project leader and explaining the possibilities for applying the theory of shared leadership within innovation projects. The second part of the literature chapter concerns shared leadership, where the following topics are introduced: development from vertical to shared leadership, internal key factors for shared leadership, shared leadership from a functional perspective and eventually the leadership functions.

2.1 Project leadership

2.1.1 Role of the project leader

There is a growing interest in project management both for practical and theoretical purposes (Kaulio, 2008; Lindgren & Packendorff, 2009). Projects are used to perform tasks and to solve problems of almost any magnitude, complexity, and direction. Further, projects are considered to be limited in time, based on temporary agreements of project members, searching for an innovative solution (Ika, 2009). To enrich the understanding of project management other perspectives of different fields of research are frequently used (Lindgren & Packendorff, 2009). According to Kaulio (2008) research on project management has paid little attention to the field of leadership studies, though other scholars have noticed that recently the interest in applying a leadership perspective within project work has increased (Kolltveit, Karlsen, & Gronhaug, 2007).

When reviewing the literature on project leadership most of the studies only address the formal project leader¹ and not the whole project team (Lindgren & Packendorff, 2009). These studies cover topics as the project manager’s leadership style (Lindgren & Packendorff, 2009), the comparison of project managers in relation to line managers (Keegan & Den Hartog, 2004) and the match of project manager to project types (Müller & Turner, 2007). In general, research on the role of the project leader makes a distinction between two complementary roles of a project leader (Kaulio, 2008). For a project leader, the ‘role of management’ deals with planning, budgeting, controlling and structuring the project, and the ‘role of leadership’ concerns directing, visioning and motivating project team members. It is the project leader’s

¹ For consistency reasons this study uses the term ‘project leader’, when referring to the formal project manager.
responsibility to deliver the end product, in accordance with the, by the client, beforehand defined project goal (Turner & Müller, 2003). It results, that most of the time project leaders focus more on their ‘management role’, disregarding their ‘leadership role’ (Kaulio, 2008). This management role refers to the rational aspects and is seen as a more traditional way of project management (Turner & Müller, 2003). Project leaders are even stimulated to focus more on this role when their payment criteria are related to time, budget and scope (Turner & Müller, 2003). However, it is becoming ever more important for project leaders to engage in motivational and emotional aspects (Turner & Müller, 2003). Project leaders are needed to stimulate the team to come up with innovative solutions (Lovelace, Shapiro, & Weingart, 2001). Through their behavior project leaders enable a positive project climate, in which the team is deeply committed towards the project (Lovelace et al., 2001). Next to this, there are also challenges a project leader has to deal with such as operating without having formal authority over their team members, because team members traditionally report to their line manager. Even as project leaders are dealing with a multidisciplinary team, which might be challenging because multiple stakeholders become involved in the project effort (Cleland, 1995).

Taken together, research on project leadership used to focus only on the project leader. However, research lacks to apply a team perspective when studying project leadership (Lindgren & Packendorff, 2009), which is particularly relevant for the project context. The nature of project work requires constant cooperation between the project team members and thus the interaction of the whole project team is of crucial importance to achieve the project goal (Fong, 2003). Therefore the current study will address leadership from a team perspective, taking into account the whole project team, including the project leader.

2.1.2 Shared leadership in innovation project teams

Project teams usually consist of multidisciplinary team members that represent different specializations (Keegan & Den Hartog, 2004). These teams are set up to cope with complex activities that ask for a high level of collaboration, consideration, planning, coordination and problem solving among the different members (Yukl, 2007). As each project member brings unique perspectives, knowledge and capabilities to the team (Keegan & Den Hartog, 2004), these different background characteristics and experiences of the team members can provide a platform for leadership to be shared and distributed among the team members (Pearce & Conger, 2003).
In addition to these individual team member characteristics, there are also critical task characteristics that specifically indicate possibilities for shared leadership (Pearce, 2004). These tasks characteristics 1) interdependence, 2) creativity and 3) complexity are typical for teams working on innovative projects. Firstly, the more interdependent and interconnected the tasks of the project team members, the more likely the team will rely on each other’s input, knowledge and skills. In such a situation the need for both knowledge creation and knowledge sharing is high (Fong, 2003), because innovative tasks are characterized as highly complex due to their ambiguity, uncertainty, and equivocality (Daft & Lengel, 1986, in Hoegl & Proserpio, 2004). Secondly, multidisciplinary project teams can facilitate creativity, that is needed to achieve the required project results within time and budget (Woodman, Sawyer & Griffin, 1993, in Lovelace et al., 2001). The more creativity the tasks require, the higher the need to spar together, share ideas and influence each other’s thoughts. Thirdly, innovation project teams are confronted with a range of complex tasks (Daft & Lengel, 1986, in Hoegl & Proserpio, 2004). As the complexity of a task increases, the likelihood that a single person is not capable of completing the task on its own, increases as well. Therefore the whole project team has to rely on each other to realize the project goal.

Taken together, innovation project teams consist of multidisciplinary team members, that all have impact on the project progress. The fact that innovation project teams deal with interdependent, creative and complex tasks suggests that shared leadership is likely to occur in this specific context. Thus, studying shared leadership within these innovation project teams contributes to the common understanding of project leadership.

2.2 Shared leadership

2.2.1 From vertical leadership to shared leadership

There is no universal definition of leadership, though the following definition is widely cited: “Leadership is a process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives” (Yukl, 2007, p. 26). This definition does not explicitly state a direction or a source of influence as “leadership is [only] a process of influencing others” (Yukl, 2007, p. 26). Still, many people intuitively think of leadership as an individual phenomenon, something that is exercised by a single person with formal authority over a group of people (Bennis, 1999; Manz & Sims, 1991; O Toole, Galbraith, & Lawler, 2002).
Indeed, the empirical literature on leadership has traditionally been leader-centered, using a framework, in which leadership resides within a single person (Yukl, 2007). This concentration on one leader, may explain why decades of research used the top-down paradigm to study leadership (Bass, 1990). Even various famous leadership styles, such as transactional leadership or transformational leadership (Bass, 1990), are based upon this dyadic leadership paradigm (Pearce, 2004; Yukl, 2007).

The difference between ‘leader’ and ‘leadership’ has often been disregarded (Rost, 1993). According to Rost (1993), past research focused on the surrounding elements and on the content of the leader. The notion of leadership as a process has not been addressed. For the purpose of this research it is of great importance to make this distinction between ‘leader’ and ‘leadership’, because there is an essential difference between the meanings of these two words. ‘Leader’ refers to the individual’s action (Uhl-Bien et al., 2007), whereas ‘leadership’ comprises the dynamic process, whereby leaders and followers are related to each other (Rost, 1993). Following, O’Toole et al. (2002) “leadership is, by definition, doing things through the effort of others” (p. 67), thus when studying leadership, a holistic view should be taken, that considers the social system, in which leadership emerges.

Today’s increasing demand for intangible assets such as innovation, responsiveness and flexibility together with the external top-down and bottom-up pressures, force organizations to shift towards more team based work (Dess & Picken, 2000; Pearce, 2004). As a result, organizations have to approach leadership from a team perspective (Dess & Picken, 2000; Gronn, 2002). Top-down pressures, such as the increasing competitive and global environment, drive organizations to outperform their competitors, which results in the need to create a workforce, that relies on the knowledge, skills and experiences of all employees (Dess & Picken, 2000; Pearce, 2004). Bottom-up pressures, such as the changing nature of workforce, which is becoming more experienced and developed, and the changing desires of employees, who want to contribute to the organization and manage themselves, force organizations to address these changes (Pearce, 2004; Zaccaro, Rittman, & Marks, 2001). In addition, teams are confronted with such a complexity and ambiguity, that a single leader can hardly perform all the required leadership functions to successfully lead a team (Carson et al., 2007). Although standardized procedures, formal planning processes and centralized decision making are still present in some organizations, this traditional way of managing and leading an organization is challenged (Dess & Picken, 2000). To meet these challenges, an organizational transition is needed that changes the perception of leadership (Horner, 1997; Pearce, Manz, & Sims Jr, 2009; Zaccaro et al., 2001). During recent years the
debate around the notion of shared leadership emerged (Pearce & Conger, 2003). Although early scholars already considered leadership as a group quality (Gibb, 1954, Katz & Kahn, 1978, in Carson et al., 2007), research in this particular field is still limited (Carson et al., 2007).

In the current research shared leadership is defined as: “A dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both” (Pearce & Conger, 2003, p. 1). In addition, it is important to consider that the source of influence can be peer and lateral, upward or downward (Pearce & Conger, 2003). The notion of leadership being a shared phenomenon suggests that leadership is a collective activity, which develops over time, hereby emphasizing that mutual influence is expressed in the collaboration and interaction among team members (Ensley et al., 2003; Small & Rentsch, 2010). Building on this definition, two activities need to occur; on the one hand, team members must provide leadership and seek to influence the direction, motivation and support of others, and on the other hand, team members need to be willing to receive and accept leadership exercised by multiple team members (Carson et al., 2007). In fact, this means that team members both lead and follow because they are offering leadership for particular aspects of the team functioning and they are also responding to particular leadership behavior taken up by fellow members (Carson et al., 2007).

**2.2.2 Internal factors for shared leadership**

The internal team environment is seen as an important antecedent condition, which supports the two activities of providing and receiving leadership, explained in the paragraph above. Within this team environment four internal key factors can be identified named 1) shared purpose, 2) social support, 3) voice and 4) trust (Carson et al., 2007; Engel Small & Rentsch, 2011). The presence of these factors can support the development of shared leadership as they create a context, in which multiple team members are likely to share the leadership function (Carson et al., 2007). To gain a better understanding how these factors contribute to the development of shared leadership, each factor is described below.

First, *shared purpose* is an internal factor that refers to having a common understanding of the collective goal (Carson et al., 2007). Team members, who are aiming for a shared goal, express particular behavior, which ensures the accomplishment of this goal (Carson et al., 2007). Team members, that have a shared purpose, are also likely to take steps
to support and facilitate others with their task, which is needed to reach the overall goal (Carson et al., 2007). Having a shared purpose leads to commitment towards the team and the work. According to Kirkman and Rosen (1999) team members who pursue a common purpose, are more committed towards their team and work, which results in higher levels of motivation, commitment and empowerment. These higher levels of motivation, commitment and empowerment are expressed in an increased likelihood of providing leadership to others (Carson et al., 2007).

Second, social support is another internal factor that fosters the development of shared leadership. This factor is related to group maintenance, culture and supportive behavior. It is defined as the “team member’s efforts to provide emotional and psychological strength to another” (Carson et al., 2007, p. 1222). Social support is also associated with motivational and emotional aspects (Carson et al., 2007; Turner & Müller, 2003). The presence of social support creates a team environment, where individual and team contributions are recognized, where members feel valued and where they are motivated. In addition, team behavior, that encourages individual empowerment is found to be positively related to shared leadership (Wood, 2005). Empowered individuals have positive emotions and feel motivated, because they sense that they are performing meaningful work (Kirkman & Rosen, 1999). Empowerment is thus a motivational construct. Besides, it is likely that empowered team members support others in performing their tasks (Kirkman & Rosen, 1999). Taking this into account, Pearce (2004) argues that shared leadership can be viewed as complete empowerment in teams.

Third, a high level of voice is another factor within the internal team environment that is positively related to shared leadership (Carson et al., 2007). Voice is associated with involvement, interaction, facilitation and participative behavior of team members (Seers, 1996, in Carson et al., 2007). Moreover, the presence of voice creates an environment, where team members constructively participate in debates, discussions and decision-making processes (Carson et al., 2007). According to Wood (2005) participating in the decision making process is the central aspect in shared leadership. Team members’ contributions to debates and discussions are closely related to a team’s absorptive capacity, which indicates the ability to learn and solve problems (De Dreu & West, 2001).

Fourth, trust is also an internal factor for shared leadership (Engel Small & Rentsch, 2011). Trust can lead to cooperative behavior, which is embedded in the interaction among team members (e.g. Good, 1988, Mayer, Davis & Schoorman, 1995, in Jones & George, 1998). Prior research indicated that trust is an important contributor to team effectiveness and
it was positively related to provide leadership behavior (Dirks 1999, Simons & Peterson, 2000, in Engel Small & Rentsch, 2011). With the presence of trust it is more likely that team members engage in constructive interaction based on their expectations, that their fellow members are honest, competent and benevolent (Engel Small & Rentsch, 2011). Furthermore, trust is an initiator of shared leadership, because team members show their trust when, on the one hand, they are willing to receive influence from others and when, on the other hand, they are willing to provide influence to others (Zand, 1972, in Engel Small & Rentsch, 2011).

Taken together, the presence of these four internal team factors contributes the development of shared leadership within teams.

2.2.3 Shared leadership from a functional perspective

Research on shared leadership has mainly focused on developing an understanding of what shared leadership is and how it influences performance (Ensley et al., 2003; Lindgren & Packendorff, 2009; Pearce & Conger, 2003). In line with this, empirical studies show that shared leadership has a positive influence on team performance (Ensley et al., 2003; Pearce & Conger, 2003). Besides, shared leadership is examined as a quantity, which refers to whether shared leadership is present or not (Engel Small & Rentsch, 2011). However, research does not yet address how team members engage in shared leadership, nor which team members particularly participate in the leadership process. The definition of shared leadership only suggests, that there is a mutual influence process among multiple people (thus at least two persons) that offer leadership to one another (Pearce & Conger, 2003). At its core shared leadership is about multiple members distributing leadership behavior (Carson et al., 2007; Engel Small & Rentsch, 2011; Gronn, 2002).

In order to examine the distribution of this leadership behavior, the current study approaches shared leadership from a functional perspective. A functional leadership perspective allows that diverse leadership functions can be accomplished by various team members (Burke et al., 2006; Morgeson, DeRue, & Karam, 2010), in contrast to a traditional leadership perspective, where all leadership functions are assumed to be accomplished by the formal leader (Pearce, 2004). Thus, functional leadership is used for the current research because it only looks at the different leadership functions, that are needed to satisfy the team’s needs (Morgeson et al., 2010). These leadership functions are not related to a particular person, and as a consequence they can be shared among multiple persons, which can also be referred to as shared leadership. However, it is important to keep in mind, that within
functional leadership, it is the formal leader’s responsibility to make sure that all functions are fulfilled (Burke et al., 2006). Still, functional leadership makes an attempt to avert the concept of a single leader, who fulfills all leadership functions, because other team members also have the possibility to take up leadership functions (Morgeson et al., 2010). Hence, studying shared leadership from a functional perspective makes it possible to look both at the distribution of leadership and at the mutual influence processes among team members.

2.2.4 Leadership functions
A functional view on shared leadership helps to identify how functions are distributed and which team members take up these functions. Morgeson (2010) establishes a framework that displays thirteen essential leadership functions. In theory, all the functions could be simultaneously dispersed among different team members. It is important to consider all the functions relevant for a team. Therefore each function is described below.

Define a mission, which is clear and compelling, is of primary interest for a team, because having a common understanding of the mission will help to direct and align the team’s actions towards the expected goals (Morgeson et al., 2010).

Compose a team concerns selecting individuals, who together possess the required combination of knowledge, skills and experiences to successfully accomplish a team task (Morgeson et al., 2010).

Provide resources is essential to a team’s performance and can be clustered in personnel and material resources (Morgeson et al., 2010).

Establish goals and expectations guides the individual’s actions and clarifies the expectations. According to the goal setting theory especially challenging goals lead to a feeling of success and a higher level of performance (E. A. Locke & Latham, 2002).

Structure and planning forms a key component in satisfying the team’s needs and it covers all aspects of coordinating and directing the team performance and processes, including the accomplishment of work and time management (Morgeson et al., 2010).

Monitor the team refers to actively monitoring all activities that are necessary, including examining the processes and performances and evaluating the task completion in order to get the highest team achievement (Morgeson et al., 2010).

Manage team boundaries consists of presenting the team’s interest to the external environment, negotiating with stakeholders and communicating with the client (Morgeson et al., 2010; Rodrigues & Williams, 1998). Here, it is argued that such boundary spanning
activities should be performed by one person, because when multiple members take up this function the team’s focus might be diverted (Druskat & Wheeler, 2003).

*Sense making* refers to the identification of critical events in the environment and thereafter to the understanding of their impact, whereby facilitating the team to cope with this impact (Morgeson et al., 2010).

*Challenge the team* is almost equal to intellectual stimulation, one of the core elements of transformational leadership, and refers to the ability of encouraging team members to be innovative and creative (Yukl, 2007).

*Train and develop* is an integral part of effective team work (Zaccaro et al., 2001). In this sense, the leadership function ensures the development of team capabilities, providing advice in the form of instructions or demonstrations, promoting the use of educational materials and coaching members in dealing with problem identification and solution generation (Morgeson et al., 2010; Zaccaro et al., 2001).

*Provide feedback* can occur in different ways. Here it refers to feedback assessing current and past performance, which helps to guide future individual and group behavior and to stimulate learning (Morgeson et al., 2010). Feedback also helps to achieve goals and it can contribute to the team’s creativity (Longenecker, Scazzero, & Stansfield, 1994; Taggar, 2002).

*Solve problems* refers to support in the problem diagnosis and assessment, and to involvement in the process of solution development and implementation (Morgeson et al., 2010; Zaccaro et al., 2001).

*Perform team tasks* occurs when members participate in the overall team’s work. This active role is expressed by participating, helping and intervening in other team member’s tasks (Morgeson et al., 2010).

This framework lists all important leadership functions for a team. Once leadership functions are distributed among different team members, they thus provide leadership to their fellow team members. However, for the current study, it is necessary to further examine whether the distribution of these functions is also accepted by the fellow team members. Thus, it is important to explore the mutual influence processes for the functions that are dispersed.
To summarize, the literature review shows that there is a growing trend to view leadership as a shared phenomenon (Carson et al., 2007; Engel Small & Rentsch, 2011; Ensley et al., 2003; Lindgren & Packendorff, 2009; Pearce, 2004). Moreover, research indicates that sharing the leadership function is beneficial for organizations as it can lead to performance advantages (Ensley et al., 2003; Pearce & Conger, 2003). Still, researchers underscore the importance to better understand how leadership is distributed among multiple team members and how they engage in the leadership process (Engel Small & Rentsch, 2011; Morgeson et al., 2010). The purpose of this research is therefore to explore how leadership is manifested within innovation project teams. This study aims to provide valuable insights for project leadership and to enrich the concept of shared leadership. It further investigates the presence of the four internal key factors that support the development of shared leadership within studied innovation project teams. In addition, this study enhances the understanding on how different leadership functions are distributed among the project team members and it identifies how the project team members influence each other by both providing and receiving leadership.
3 Methodology

The aim of the methodology chapter is to describe how the research is conducted and to provide arguments for the choices made. First, the research method and design of this research are given, followed by a description of the data collection. The data collection part specifies how the cases and participants are selected, and how interviews and observations are conducted. The last part of the methodology chapter describes how the data is analyzed. The results of this analysis are provided in the next chapter.

3.1 Research method and design
This research uses a qualitative and exploratory approach to understand leadership in innovation project teams. An exploratory study is valuable to get new insights and to gain a better understanding of a particular phenomenon (Saunders, Lewis, & Thornhill, 2009). This is particularly useful because more insights and a better understanding are needed for the concept of shared leadership (Pearce, 2004). Shared leadership in the context of project leadership has not been very well studied so far (Lindgren & Packendorff, 2009) and therefore qualitative research lends itself to discover this phenomenon (Corbin & Strauss, 2008). The research design is a holistic multiple case study (Yin, 2009). This holistic design is chosen for its ability to study the complex phenomenon of shared leadership. The purpose of this research is to explore how leadership is manifested within in innovation project teams. Conducting case studies is the preferred method when answering ‘how’ research questions and multiple case studies allow the researcher to compare the obtained results (Yin, 2009). In general this study uses a deductive approach to come to the conclusions, however there is also some theory building, which is inductively obtained. Due to this combination of deductive and inductive reasoning the current research is therefore considered to be of an abductive approach (K. Locke, 2011).

3.2 Data collection
Generally, the strength of a case study is to deal with data that stems from individuals’ behavior, attitudes and perceptions (Yin, 2009). Two case studies are conducted in this research and for each case data is collected via two instruments, interviews and observations. This enables data triangulation (Robson 2002, in Saunders et al., 2009), which ensures the
construct validity of the study because multiple sources of data provide measures of the same concept (Yin, 2009). Moreover, triangulation enables to get a richer and more comprehensive picture of the studied phenomenon of shared leadership (Saunders et al., 2009).

The cases are selected based upon several criteria to establish the external validity (Yin, 2009). In order to control the scope of the research, it is decided to concentrate on innovation projects. This unit of analysis, the innovation project team, is carefully selected and chosen up on the following criteria. To start with, the selected project teams meet the identified characteristics of interdependency, creativity and complexity (Pearce, 2004), which are assessed beforehand during the intake with the project leaders and are also confirmed by the participants during the interviews. First, interdependency of team members is in both cases present as each team member is a specialist and the project goal can only be realized when these specialists are put together in a team. Second, as both projects are considered to be innovation projects, where the aim of the project is to develop a product, which has not been developed before within the companies, creative thinking is indispensable. Third, complexity is present in both cases due to the specific and technical requirements of the client, who is in case I external and in case II internal. Moreover, to obtain a broad view on leadership in project teams, the selected cases have different clients, case II internal and case I external, as this might affect the findings (Rodrigues & Williams, 1998). Taken into account that shared leadership is a time-consuming process, that has to emerge over time through member’s mutual influence, interaction and negotiation (Carson et al., 2007), the selected projects are in a mature phase during the time of data collection. Finally, the selected project teams are multidisciplinary and comparable in terms of project team size and type of project. Based on these criteria, two cases are eventually selected via the researcher’s personal network. A general overview of each company and the relevant project information concerning the current research is displayed in table 1.

The participants are selected in cooperation with the project leader. The participants represent a large variation of the project team members and have diverse functions with different responsibilities. Next to this, participants feel comfortable with being interviewed. In case I six project team members are selected, including the project leader. In addition, the line manager, who is referred to as ‘group leader’ in this company, is interviewed. In case II six project team members are selected, including the project leader.
Table 1 Overview of the selected cases

<table>
<thead>
<tr>
<th>Type of project</th>
<th>Innovation project at Bosch Transmission Technology</th>
<th>Innovation project at the business segment of KPN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project duration</td>
<td>About 2 years</td>
<td>About 1.5 years</td>
</tr>
<tr>
<td>Project deadline</td>
<td>Project deadline is in the nearby future</td>
<td>Project deadline is in the nearby future</td>
</tr>
<tr>
<td>Project team size</td>
<td>About 15 project team members *</td>
<td>About 10 project team members *</td>
</tr>
<tr>
<td>Company</td>
<td>In the Netherlands Bosch is a regional branch of the Bosch Group, one of the world’s biggest private industrial corporations. The ambition of the Bosch Group is to enhance the quality of life with solutions, that are both innovative and beneficial. The title of their mission “Be QIK” summarizes what is most important: quality (Q), innovation (I), customer orientation (K for the German term “Kundenorientierung”). Bosch Transmission Technology is market leader in the field of development and mass production of push belts for the Continuously Variable Transmission. More than 900 employees are working at the Bosch Transmission Technology B.V.</td>
<td>KPN is an international leading telecommunication and IT service provider. The company provides innovative and reliable products and services to their customers. In the Netherlands the company has a multi-brand portfolio offering wireline and wireless telephony, internet and TV to different consumer groups. The aim of KPN is to help customers to achieve their (business) work and enrich their leisure time with a full range of communication services. To achieve this the company is in constant search for innovative solutions and new technologies. In December 2011 the KPN workforce consisted of 31,084 FTEs.</td>
</tr>
<tr>
<td>Culture</td>
<td>Key aspect for Bosch’s future growth is continuous innovation. The success is entirely dependent on their ability to innovate and their know how advantage. The core values are: future and result focus, responsibility, initiative and determination, openness and trust, fairness, reliability, credibility, and legality, and y cultural diversity.</td>
<td>KPN’s culture can be summarize in one term: professional. Working at KPN means working among professionals. Performance is seen as the result of a team effort. The atmosphere is open and informal. The core pillars of KPN’s culture are: simplicity, personal, trust, service and expertise.</td>
</tr>
</tbody>
</table>

Sources: Websites of companies (www.bosch.nl and www.kpn.nl), project information comes from the each project leader.
* dependent on the project phase.
The first part of data collection concerns semi-structured interviews, which is particularly useful for exploration purposes (Yin, 2009). Perceptions of the interviewees are thought to be best captured by this approach (Saunders et al., 2009). The interviews provide the researcher with intimate knowledge of how team members work together in the particular project and also allow the researcher to develop a broad picture of the overall project progress. For the semi-structured interviews a template (Appendix 1) is used, but dependent on flow of the interview the researcher omits or adds certain questions, which allows to immediately react to the interviewee (Saunders et al., 2009). Principally, team members and project leaders are interviewed in a similar manner. The interview template has a comparable thematic structure in which questions are only adjusted to the interviewee’s role in the project team. As a result, the interview scheme consists of the following parts: 1) background, role/function within project team, 2) project and project structure (objective, result, and team composition), 3) role of the project leader, 4) team roles, collaboration, interaction and influence (responsibilities, solving conflicts, decision making, mutual influence) and 5) reflection on the given answers.

Participants are invited via e-mail with the request for cooperation (Appendix 2). Before conducting the interviews of case I the researcher signed a confidentiality contract. For case I, the interviews are all conducted face to face at the company location (N = 6) except one over the telephone (N = 1). For case II, the interviews are all held at the company location (N = 6). In November and December of 2011 all interviews were conducted. The interviews are about 1 hour and are held in the mother tongue of the interviewee (N=12 in Dutch, N = 1 in English). Data is audio-recorded, with permission of the interviewees, in order to get accurate and unbiased data, that permits to use direct quotes in the result chapter (Saunders et al., 2009). The first two interviews are held with the project leaders in order to obtain a general overview of the innovation project itself. In both cases only the project leader is familiarized with the specific research objective, the concept of shared leadership. To maintain the exploratory nature of this research, the team members are told that the research purpose concerns the collaboration of project team members. The researcher choses to not explicitly express the word ‘leadership’, which might direct or influence the participants answers and perspectives. The reason for this is, that people subconsciously think of leadership as an individual phenomenon exercised by a formal leader (Bennis, 1999; Manz & Sims, 1991; O Toole et al., 2002).

The second part of the data collection concerns direct observation. After conducting all the interviews, the observation in each project was conducted at the end of December
2011. In case I, the observation takes place during a weekly meeting of two hours with eleven project members, whereof three interviewees. In case II, the observation takes place during a weekly meeting of one hour with six project members, whereof four interviewees. The strength of a direct observation is that the researcher covers a real event (Yin, 2009). For this research only the use of interviews as means to data collection would not fully capture the understanding of the collective form of leadership. Because in the current research leadership is approached as a group phenomenon, the observation adds to the obtained data, as it allows the researcher to get more insights into the natural context of the project teams and to provide additional information about the studied topic (Yin, 2009). Particularly, the observations aim to study support and interaction among team members, and non-verbal behavior of the individual team members as depicted in the observation coding schedule (Appendix 3).

3.3 Data analysis
First, the data of the interviews is transcribed verbatim. The entire set of transcripts is put in the qualitative data analysis program NVivo 9 to make the data easily accessible. In a second step, the data is analyzed based on the theoretical framework from the literature review, which allows to compare the results with the theory (Yin, 2009). According to Miles and Huberman (1984) the analysis of qualitative data consists of three activities, named data reduction, data display and conclusion drawing, which form a continuous cyclical process. The analysis starts with data reduction. During the data reduction the researcher sharpens and organizes the obtained data in the data analysis program. All codes are deductive and pre-specified beforehand, except for the code ‘trust’, which is developed along the way and thus inductively obtained. More specifically, the data are coded as per the following main themes: internal factors of shared leadership and leadership functions. Appendix 4 provides an overview of the codes and their definition used for this study. In addition, some other codes referring to background and personal information are used to structure the amount of data, but to insure the confidentiality and anonymity these codes are left out of the coding scheme. After coding the gathered data, the notes of the direct observations are used to support and clarify the interpretations about the collaboration among the project members and about their leadership behavior. First, the results of each individual case are gained. In line with an abductive approach, the researcher gets further insights of the studied subject by moving again through the literature. This iterative process is necessary for abductive reasoning (K. Locke, 2011). Second, cross analyses are conduced, for the internal factors and for the
distribution of leadership functions. For the cross analysis of the internal factors a level is assigned based upon the former analysis, which represents the degree of presence of each internal factor. A five point scale, varying from ‘low’ to ‘high’ is used. ‘Low’ indicates that the factor is not likely to contribute to the development of shared leadership, whereas ‘high’ indicates that the factor is very likely to support the development of shared leadership. For the cross analysis of the distribution of leadership functions, a table is provided, which depicts whether the functions are taken up by one person, two persons, or more than two persons. Both cross analyses enable to compare the cases and to seek for additional insights (Eisenhardt, 1989). Finally, conclusions are drawn, which are provided at the end of this research.
4 Results

This chapter contains the results of the current empirical research. The results are based on both the perceptions of the interviewees, obtained during the interviews, and the perceptions of the researcher, gained during the interviews and observations. To structure this result chapter, first the results of each case are separately presented. To start with, a brief overview of the team member’s perceptions about the overall collaboration and the characteristics of the project team is given. Then, the presence of the internal factors needed to develop shared leadership is described. After that, the results for the distribution of different leadership functions and the mutual influence processes among the team members are provided. Eventually, cross analyses, in which the results of both cases are compared with each other on the before analyzed concepts, are presented. To display the results the following abbreviations are used: PL for project leader, GL for group leader and TM for team member, respectively TM1, TM2, etc.

4.1 Results case I

4.1.1 Overview of perceptions on collaboration within the project team

All interviewees are asked to characterize the project team. Table 2 below provides an overview of the answers, which give a general impression of how the collaboration within the project team is perceived. Almost all interviewees stress the technical focus of the project team. The aspect of being intrinsically motivated and having a friendly open climate within the team is frequently emphasized.

<table>
<thead>
<tr>
<th></th>
<th>“loyal towards the team duties”, “motivated”, “people come along well with each other”</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL</td>
<td>“loyal towards the team duties”, “motivated”, “people come along well with each other”</td>
</tr>
<tr>
<td>GL</td>
<td>“supportive, technique in the foreground and quality to be considered very important”</td>
</tr>
<tr>
<td>TM1</td>
<td>“open and spontaneous”, “we are all very technical. In general we are car freaks”</td>
</tr>
<tr>
<td>TM2</td>
<td>“capable, strong team, everyone is a strong personal figure, who achieves something, they can do something, they understand business, and we are flexible”</td>
</tr>
<tr>
<td>TM3</td>
<td>“people are approachable and motivated”</td>
</tr>
<tr>
<td>TM4</td>
<td>“open and social team”, “we are purely directed towards the consumer, purely automotive, we are all technicians”</td>
</tr>
<tr>
<td>TM5</td>
<td>“love for CVT, we are really technical”, “rather a friendly relation, than a professional one”, “work hard, play hard”</td>
</tr>
</tbody>
</table>
4.1.2 Presence of internal factors for shared leadership

This part provides the results about the internal key factors and explains to what extent these factors are present within project team I.

*Shared purpose*, which is an internal factor, that relates to the team’s similar understandings of the project purpose and their subsequent behavior, is highly present within case I. The answers of the interviewees corresponding to the description of the project goal are very similar, which gives the indication, that all team members are clearly aware of the overall project goal. Moreover, the project leader emphasizes the importance of collectively pursuing that project goal. Consistent with having this collective purpose the team members are all taking step towards the right direction. This is illustrated by the following quote from the project leader: “I expect from my team members that they all pursue the common project goal”. Furthermore, the team members also feel that eventually the project success is dependent on the collective effort as explained by TM2: “*In the end we are all responsible for the project success*”.

*Social support* is about providing emotional and psychological strength to one another and this factor is little present within the project team. Although the team members mention the importance of supporting each other, this type of support rather refers to the rational level instead of the emotional or psychological level. Support on the rational level corresponds to providing support to colleagues on work and content related aspects. The quote of TM2 shows the supportive behavior amongst colleagues, when related to work: “*If I explain my difficulties with the tasks, I feel comprehended and I receive support*”. During the observation, it is noticed that the meeting is purely devoted to the technical issues, which underscores the focus is on the rational level. The relatively low level of social support is also reflected in the low level of explicit motivation. It is remarkable, that generally team members do not lack being explicitly motivated by each other, nor by the project leader as indicated by TM4: “*I don’t believe that it is the responsibility of the project leader to give us a good feeling*”. Though not being explicitly motivated by each other, it seems that the team members are highly intrinsically motivated as stated by TM2: “*I find that everybody here, maybe it is exaggerated [but still], who is so professional should be motivated intrinsically*”. This intrinsic motivation is due to the fact that “*they have passion*” (TM1) and are able to work on such a technical innovation in the automotive industry, as exemplified by TM2: “*Because I enjoy my work. That is for me the greatest. Money is also of importance, but I say it’s about enjoying your work*” and by TM1 “*it’s great because everything is about the automotive*”. The intrinsic motivation also comes from the fact that team members feel that
their work is valuable for the organization. The following quote from TM4 supports this: “The involvement of the people in this project is so high, because what we do can be traced back to a part of the car (...) we also realize that what we make can be taken into production”. Team contributions, such as the achievement of a milestone, are recognized and celebrated as team success. This is indicated by TM2: “There is cake or apple pie for each milestone”. The project team members appreciate this as exemplified by TM4: “Guys, we did it together, this is worth a moment of celebration (...). This is especially to stimulate and to give everybody a good feeling about the project”.

Voice is identified in the literature as another internal factor that impacts the development of shared leadership. This internal key factor is of crucial importance, because participation and providing input are fundamental for shared leadership, and is highly present in case I. TM1 argues that especially in this type of project communicating openly and speaking up to others is very important: “In the project it is crucial to extensively communicate and discuss things with each other”. In this project, all team members acknowledge that issues are jointly discussed. Moreover, though everybody has an opinion, it seems that people mostly think along, when explicitly asked for as argued by TM2: “Usually people think along when I share my issues concerning the project”. Discussions are seen as an integral part of the participation and interaction between members as TM3 explains: “Everything can always be discussed in a meeting”. Open discussions reinforce mutual understanding of how work is accomplished. Further, open discussions stimulate team members to communicate honestly and openly with each other as noticed by TM2: “Team members are openly asked why they choose to do it in a particular way”. The open discussion culture is also noticed by the researcher during the observation, where a particular issue receives the attention and nearly all present members engage in a little discussion. Still, in TM4’s opinion not everyone should participate in a discussion as illustrated by the following quote: “It can’t be the case that everyone always gives his opinion and is interrupting the meeting, because then it would become too chaotic”. Next to this, TL3 explains that “I don’t see that each one has a different opinion about a common subject. When there is a specific problem. Then the expert will jump in and we’ll see what needs to be done and how to improve it [technical issue]”. Consistent with the high participation in discussions, participation in decision making processes is also high. There is mutual influence among the team members as TM5 indicates: “I have more an advising role for the PL, he eventually takes the decisions”. The fact that the project leader finally takes the decision, is also noticed by TM2 who states: “The eventual decision is being made by the project leader,
“he guides on the next steps”. During the observation the researcher notes, that as soon as the project leader starts talking, he receives everyone’s attention, which is expressed in active listening behavior and in eye contact from all team members. This could provide support for the finding, that the project leader has basically the final say. However, TM1 indicates that the project leader is not involved in all decisions: “Only if we don’t find a solution ourselves, we go to the PL and present our finding, and then he tells us what needs to be done next”.

Trust is seen as very important for the project team, which is underscored by all team members. The presence of mutual trust is, by the interviewees, considered to be a crucial element for the overall collaboration. For the project leader it is indispensable to trust his team members as they are the experts. This is illustrated by the project leader: “I do not have the control then [on a specific topic] and therefore I give way for 4 or 5 very experienced design engineers”. The confidence of the project leader in his team is also confirmed during the observation, where one of the experts asks a specific question that is answered by the project leader with “this is up to you”. TM4 feels that he is trusted by the project leaders as indicated in the following quote: “Thus finally he (the PL) has to rely on his specialists, and he shows them [us] his confidence”. The results further indicate that trust is always based upon the past expertise of the team members as TM4 points out: “It depends upon the experience. For particular things you have gained a lot of experience and therefore someone else cannot have the same level on this”.

To summarize, the findings of this study suggest that the key factors shared purpose, voice and trust are present within project team I. Social support, as defined in the literature, is less present. In other words, three out of four factors are present. Based on this, the internal team environment of case I can support the development of shared leadership.
4.1.3 Distribution of leadership functions among project team members

As shared leadership is about distributing leadership, a functional perspective is taken to better understand how shared leadership is shared among persons. In the following part of the result chapter the outcomes for each function are described for project team I.

*Define a mission* is not a relevant team leadership function in this case. The mission is defined beforehand by the external client. The project leader explains it like this: “I was assigned to this project when the contract with the external client was already signed”. Changes in the contract that influence the mission of the project are only made by the client, as indicated in the following quote: “In this case the client says, we turn everything upside down, thus for us this meant we could start again from the beginning” (PL).

*Team composition* is taken up by the project leader. Depending upon the need of a specific resource, the project leader explains: “I can fluctuate the need from a particular resource from month to month. That [team composition] is my responsibility”.

*Providing resources* is taken up by the project leader as well as by the group leader. All interviewees acknowledge to go to the project leader to ask for additional resources, as illustrated by TM4, who claims for more personnel: “Especially in the beginning I strongly insisted the need to get a simulant by the PL”. With regards to personnel resources, this function is distributed across two people, the project leader and the group leader. The project leader is responsible for making a particular resource planning, therefore he approaches the group leader who fulfills the need for additional personnel resources. The group leader’s function is “purely providing [human] resources”.

*Establishing goals and expectations* is found to be the project leader’s responsibility. For the project leader it is important that the overall project goal and the deliverables are to the team “very clear and therefore very concrete”. Moreover, the project leader emphasizes the importance to focus on the completion of personal tasks as illustrated in this quote: “It is important for everyone to keep focused on their personal goals, the things they have to accomplish”. To ensure this, the overall project goal is written down and defined with detailed specifications by the client and accessible to every team member. Next to the detailed goal description, team members have a clear role description. All interviewees, except one, mention to have a good job description and a certain role within this team, as confirmed by TM1: “In here everyone [each project team member] knows his position”.

*Structure and planning* is taken up by the project leader. This is confirmed by the interviewees, who see the project leader as the only one having the overall picture of the
project. A quote of TM3 is used to support this: “He [the PL] does the whole coordination of all project activities”.

**Monitoring the team** is taken up by two team members, the project leader and TM4. From a formal structure point of view, the project leader fulfills this function because all team members directly report to him, as confirmed in this quote: “Everyone reports to me, it’s quite simple. A horizontal line” (PL). He feels responsible for monitoring his team members, especially when a team member has to take over another responsibility or when his task range changes. In such a particular situation, he monitors closely as illustrated in the following quote: “I keep track of him [TM] by constantly sparring with him (...). Thus I look at his day task, and check his results at the end of the day”. Thus, formally the project leader monitors the team, however informally TM4 also takes up this function. His way of monitoring refers to the detailed technical content level. TM4 is a highly experienced and developed team member, who is very critical on the technical level as he explained: “I believe some critical notes have to be made when things go wrong or when there is a lack of focus. These critical notes need to come from me”. His input is also noticed during the observation, where he took much initiative in precisely clarifying outcomes and in critically asking questions based upon his past experience.

**Managing the team boundaries** is fulfilled by the project leader as he communicates and coordinates with all the stakeholders outside the team. The team members see that the project leader is the communicator between management, client and project team as indicated by TM4: “If he (the PL) is triggered by his management or by the client do to it differently, he immediately takes action and comes to the people [us]”.

**Sense making** takes place in this project only when there are changes in the project scope. These changes are first perceived by the project leader because they usually come from the client. Consequently, the project leader takes up this function and tries to get an understanding and involvement of his team members, while still providing them sense in their work: “The important thing is that nobody [of the team] suffers from these changes and that everybody still is able to do their job and that they feel that what they are doing is still meaningful” (PL).

**Challenging the project team** by providing new or additional tasks is done by the project leader. The reason for challenging the team is to keep the members motivated as explained in the following quote: “By challenging them [I] try to keep the level of motivation high” (PL). The team members are highly willing to take up these challenges offered by the project leader.
Training and development rarely occurs in explicit activities, such as trainings. Although, the project leader mentions his role as a coach like illustrated in the following quote: “From my experience I can coach him [TM] there [completion of a certain task], but I try to let him take his own responsibility for this”, this role is only occasionally used.

Provide feedback refers to the assessment of current and past performance and is not present as a formal activity within the project team. This feedback, as TM3 argues, is provided by the group leader because he is formally assigned to give feedback to the team members, which becomes clear in the following quote: “He [the GL] is the one who is responsible for giving me feedback, not the project leader”. Though, feedback sometimes occurs in other forms among the team members. Positive feedback is then provided in short compliments “good job done” (TM3) or "nice result" (TM5) and negative feedback is then provided in a constructive way as TM5 explains: “[Feedback is] more in line with an advise: maybe you can better do it this or that way”. Overall, the reason that feedback is seldom provided seems to be that the project team members are too busy with the project, as the following quote of TM4 exemplifies: “Because we are so busy with the technique we don’t think about it [feedback] (...) so you don’t take the time for it [feedback]”.

Problem solving is performed by all interviewees of the project team and is reflected in the overall team behavior. The fact that problems are openly shared with each other is emphasized by several team members and exemplified by a quote from TM3 who states: “I was told to come out with the problems we have”. For the overall collaboration it is important that problems are collectively solved as soon as possible: “Together we’ll solve the problem, it [the situation] is estimated jointly” (PL). This interaction leads to a solution where “we always come to a solution, by discussing it or by arranging a meeting to solve it” (TM2). The project leader’s role within this function is to steer the situation in a good direction and to intervene when problems cannot be solved, as indicated by the following quote: “I try to turn things [problems/ difficulties] positive as soon as possible”. In fact, facing problems and making mistakes is seen as a part of the project progress that is necessary as TM3 indicates: "Everyone tries hard to do his work, and where people work, mistakes are made, that’s logical and needed to work even better”. This point of view indirectly implies the importance to learn from the mistakes, which is also supported by the following quote from the group leader: “You have to learn from your mistakes and have to spar with your colleagues to discuss what went wrong”. TM1 explains that colleagues are not blamed for making mistakes: “When something goes wrong, they don’t point at you”.


Performing team tasks is a function that is taken up by all members as they engage in supporting each other. This is exemplified by a quote from the project leader: “I expect from every team member that he helps another team member who cannot accomplish his work on his own”.

To summarize, the function of defining a mission is not performed within the project team itself. The leadership functions team composition, establishing goals and expectations, structure and planning, managing the team’s boundaries, sense making and challenging the project team are taken up by the project leader. Further, the leadership functions, providing resources and monitoring the team are performed by two people, the project leader and an additional team member. Only problem solving and performing team tasks are taken up by all project team members. Noteworthy, the functions training and development and providing feedback are rarely fulfilled by any of the project team members.

The findings indicate that multiple members provide leadership for a few particular leadership functions. Still, for shared leadership the leadership functions also need to be accepted by other team members, as shared leadership refers to the mutual influence process among members. Therefore, the following part provides evidence for this mutual activity, which is important for the presence of shared leadership. Only the functions that are distributed among at least two project team members are shown in table 3. For these functions quotes related to providing leadership behavior and receiving leadership behavior are presented.

Table 3 Exemplary quotes for shared leadership functions

<table>
<thead>
<tr>
<th>Shared leadership functions</th>
<th>Provide leadership behavior</th>
<th>Receive leadership behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Provide resources</strong></td>
<td>“One person that is part of the knowledge team, is going to invest time to explain something to the other person.” PL</td>
<td>“I receive the knowledge from them, because they [colleagues] were confronted with it in the past.” TM2</td>
</tr>
<tr>
<td></td>
<td>“I’m responsible to give the ‘go ahead’ for the resource planning of the project manager.” GL</td>
<td>“I strongly insisted the need to get a simulant by the PL. Finally this lead to a new person within the team, who was specialized in X.” TM4</td>
</tr>
<tr>
<td><strong>Monitor team</strong></td>
<td>“Now and then I try to make some critical comments when I feel this [project] is going in the wrong direction.” TM4</td>
<td>“Someone told me that he had received the task last week that was hard to cope and now he tells me that it did not work out. This naturally influences me because I have to think of a new plan.” PL</td>
</tr>
</tbody>
</table>
“Thus sometimes I also try to steer and influence the meeting while trying to focus on the important discussion points.” TM4

Solve problems

“If I encounter a certain problem, a typical IT problem for example, than I immediately call someone who is also in our project team, who has an IT background.” TM2

“I go to the project leader and tell him that we have to do more research on a particular aspect.” TM4

“He tells me, the next step is that I should talk to another department (...) who is responsible for this and explain my problem.” TM3

“Last week we did it like this, and then I presented my plan to my colleagues and they told me to better approach it differently, like this” TM2

“If I believe they propose a good solution, I absolutely take this into account.” TM4

Perform team tasks

“I expect from my team that they provide maximum work support to each other.” PL

“We didn’t know why it broke the first time. Then it broke a second time, and we didn’t know either. And so at least I did some analysis.” TM3

“If you need to stay longer at work, or somebody needs to take over a certain tasks, this is no problem. We do this as a group.” TM 2

The table indicates that the team members of project I do engage to some extent in shared leadership. Four out of thirteen leadership functions are taken up by at least two team members. Especially for the functions problem solving and performing team tasks, which are taken up by all members, there is a lot of interaction between the team members. For these functions the influence process is highly visible.
4.2 Results case II

4.2.1 Overview of perceptions on collaboration within the project team
During the interview participants are asked to characterize the team. Table 4 below provides an overview of the perceptions and general impressions of how the collaboration within the project team is seen. Overall, the team can be characterized by a high degree of flexibility. In addition, the interviewees indicate that the team climate is professional.

Table 4 Overview on project team characteristics for case II

<table>
<thead>
<tr>
<th></th>
<th>“punchy because it’s a team that together is able to move mountains of work”, “with this decisiveness comes flexibility”, “I have great confidence in the team”</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL</td>
<td>“helpful, so willing to help each other”, we are pioneers in some ways”, “people who work hard, and who are not easily daunted by setbacks”</td>
</tr>
<tr>
<td>TM1</td>
<td>“open”, “the team is flexible and it can easily adapt to changing circumstances”, “efficient and always formal”</td>
</tr>
<tr>
<td>TM2</td>
<td>“we are positive, although we have had some setbacks, but I cannot say that people are becoming demotivated and cantankerous”, “pragmatic”, “non-transparent, because of the role distribution, who has exactly which responsibility”</td>
</tr>
<tr>
<td>TM3</td>
<td>“team consists of different parts that all take up their own work”</td>
</tr>
<tr>
<td>TM4</td>
<td>“a team of experts, we are a team where each person has its own expertise”</td>
</tr>
</tbody>
</table>

4.2.2 Presence of internal factors for shared leadership
This part provides the results about the presence of each internal factor for project team II.

*Shared purpose* is considered to be an internal factor for the development of shared leadership and it is highly present within case II. The project goal is described by all interviewees in a similar manner, which indicates that the team members clearly are familiar with the overall project goal. The emphasis within the project team is put on the collective effort as noted by the project leader: “*We work as a collective, not as individuals (...) when telling a success story, it is not only about one person’s contribution, but because we all together contributed to the project*”. This collective goals ensures that each team member takes steps in the same direction in order to successfully realize the project goal. This is supported by the quote of TM2: “*Thus you have a joint objective and you all need to support it*”.

*Social support*, as defined in the literature, concerns providing emotional and psychological strength to each other, which is rather absent in this project team. The overall atmosphere within the project team and in discussions is professional or even reserved, as pointed out by TM4 who argues that: “*For instance you [we] have 10 of these types of*
projects, I believe you should not give them a too personal character”. The researcher also observes the professional climate during the meeting, which can also be supported by the following quote: “There are never discussion that are highly emotional within this team” (TM1). Within this professional environment team members respect each other and value each other’s capabilities as TM5 indicates: “Everyone recognizes the value of someone else”. The recognition towards the team members is not explicitly expressed, it is rather a gesture as indicated by the project leader: “Most of the times it is a pat on the back or a thank you for what we have reached so far”. Likewise, team members do not explicitly motivate each other. However, team members seem to be intrinsically motivated because the project has a great status within the company and receives much attention. The following examples from TM1 and TM3 respectively confirm this: “Everyone likes it to achieve this difficult job” and “you get motivated because of the attention for the project”. According to the project leader, team members “decide themselves whether they are motivated” or not. This also refers to the team member’s intrinsic motivation. Though not being explicitly motivated by any project team member, TM3 acknowledges that the active attitude of the project leader contributes to his motivation as suggested by the following quotes: “He [the PL] has a very positive vibe around him” and “[I am motivated] basically not through words but through his [the PL] actions”.

Voice is an important internal factor for the development of shared leadership and present within this project team II. In discussions, team members are welcome to provide input and contribute to the subject, as explained by the project leader: “Everybody can have a certain opinion about it, so that together we can think about it”. However, it results that within a general discussion team member’s opinions, that are foremost present, count more than people’s expertise as illustrated by the following quote of TM1: “If you are less present in terms of giving your opinion and defend your position although you have a lot of expertise, your point of view is not necessarily accepted and used by the others”. In addition, in most cases only the interested team members contribute to the discussions, which is observed by TM4: “Not always everybody has an opinion about each event [discussion], but usually the people that are affected, they focus particularly on that event”. Consistent with these findings, participation in decision making is also present within this project team. Similarly, for participation in decision making, it heavily depends on the impact of a decision for the team members, whether they contribute to the decision making process or not, as the project leader explains: “It depends upon the interfaces team members have with the decision whether they are involved”. For some team members particular decisions are irrelevant
because “some persons say I have no interfaces with the decision, whether it turns out to the left or right” (PL). In addition, specific decisions are not taken within the whole project team but within a particular core group, which especially was used in the beginning of the project, as pointed out by TM1: “What we usually did was that we had a core team, within that core team we discussed the issues beforehand”. TM5 also refers to the core group when stating: “That [decision making] is not done with the whole project team, but then the PL and I and some others discus it separately”. Finally, when it comes to decision making team members indicate to rely on the experts within the team, as elaborated by TM5: “Then I do not further give my opinion, even if I do not agree upon the decision, because we have an expert within the group, he does facilitate the decision making”.

Trust is found to be highly present within case I. For the project leader it is crucial that team members can rely on each other. Having confidence in each other and trust each other is essential for doing teamwork. This is supported by the project leader who explains: “I have a lot of confidence in the team. I try to give them the feeling that we can be honest to each other. I try to constantly create and keep that feeling” and by TM1 who states: “Within the team I can rely to 99% on my team members”. However, trust is not unconditionally present within project teams because the interviewees also indicate that trust needs to grow during the project time. Thus, for a successful collaboration trust needs to be established as TM3 points out: “Whether I trust somebody, I think that has to grow little by little. I already worked quite some time with these people here, and I know they deliver good work”. Next to this, trust can be based upon several aspects such as knowledge, expertise and attitude as TM2 describes: “It is a combination of what people already know from you, your results from the past, the attitude and behavior that you show when working with you at that moment”.

Taken together, the results of this study indicate that shared purpose, voice and trust are present within case II. Social support as referred to in the literature review is rather absent. The presence of three internal team factors can support the development of shared leadership within the project team.
4.2.3 Distribution of leadership functions among project team members

A functional perspective on shared leadership enriches the understanding of how different leadership functions are dispersed among the project team members. Below the findings for each function of case II are described.

Define a mission is not a relevant team leadership function for this project because the mission of this project and its deliverables are already defined by the internal client as indicated by the project leader: “The client is finally responsible to define the project goal and I’m the one who delivers the required project results”.

Team composition is taken up by the project leader. In this project team, the core team is quite constant in terms of project team members, therefore little attention is paid to team composition during the interviews.

Providing resources is taken up by the project leader and TM1. The project leader is seen as a facilitator, which is illustrated by the following quotes by TM1 and TM3: “He provides a helping hand when someone has a questions (...) or facilitating if something needs to be organized, for example a meeting” and “he [the PL] for instance arranged a parking lot for me. It are the small things but it is very useful that he takes care of it”. TM1 is seen as a team member, who is able to provide informational resources on a detailed level as supported by TM3: “It depends upon the situation, if I need more figures or annual plans, I go to TM1 for that particular information”.

Establishing goals and expectations is taken up by basically all team members. This function is internally taken up by all team members because they have to establish their own expectations, then communicate and express them towards the project group. This is illustrated by the quote of TM4: ”Look, it is everybody’s own responsibility to engage in expectation management”. Establishing expectations is based upon an agreement between the project leader and a team member, as the following quote from the project leader suggests: “It is very important to comply to your agreements and if you are not able to, please inform me beforehand”. In line with this, there is no detailed role clarification within the project team. Team members have to autonomously clarify their role within the project team, as TM5 explains: “I don’t have a real task description from X (the PL), so I started myself to define it”.

Structure and planning is principally taken up by the project leader and additionally by TM3. The project leader has a coordinating role, which is supported by all team members. This is exemplified by a quote of TM4: “He [the PL] is really doing the overall coordination from all lose parts that play a role within such a project”. Moreover, structure and planning
implies time management, which is also taken up by the project leader as illustrated by TM4: “From his role as a project leader, you have a meeting of only one hour where we are all together, thus there is also a great part of time management needed”. However it seems that the project leader is frequently advised by TM3 on how to structure and plan the project, as indicated by his quote: “We always looked together if this is a realistic planning for this project”. During the observation it is noticed that TM3 interferes the project leader on all aspects related to coordination and time management.

Monitoring the team is actually taken up by two team members, the project leader and TM1. Formally, it is the project leader, who is responsible for monitoring the team as TM5 explains: “His [the PL’s] job is the overall monitoring of the project result, planning and escalation where needed”. It is agreed upon before what the project leader should monitor as indicated by TM2: “He [the PL] monitors the project progress and monitors what is agreed upon”. On a more content wise level TM1 takes up the monitoring function and argues: “Frequently I am asked to check again” (TM1). TM1 is a highly experienced team member and therefore he monitors closely other’s work and actions by critically reviewing, making comments and engaging in discussions, as observed by the researcher.

Managing the team boundaries is a function, which is taken up by the project leader and TM1. This is supported by TM2 who states: “These two [the PL and TM1] mainly communicate to the external environment, thus to the project board”. Also other project members observe that both the project leader and TM1 are the communicators to the upper levels in the organization as is exemplified by TM5: “And then somebody, usually [the PL] and [TM1], needs to go to the management to explain why we haven’t started yet”.

Sense making is not noticed within the interviews. Although the project is confronted with many changes, which can also come from different team members, there is no indication for how members facilitate others to cope with these changes.

Challenging the project team is not observed during the interviews. Only the project itself can be characterized as a challenging project, which is stated by TM3: “That [achieving the project goal] is a real big challenge”.

Training and development does not occur in the form of a training. In terms of coaching, it is only occasionally taken up by the project leader who states: “I see myself also as a coach for the team”. Though, not all members receive coaching, this is dependent on their level of independence and experience as illustrated by the project leader: “During the project you [I] decide who needs the coaching and who doesn’t (…) people who work quite
independently (...) don’t need to be coached, because they already know how to perform their job”.

Providing feedback does not exist as a formal activity, that refers to the team member’s performance assessment, as supported by TM4: “Feedback is usually not the case. It is only done at the final evaluation, but that’s not personal feedback rather project wise”. Though, feedback occasionally takes place in informal forms, as TM2 explains: “It [providing feedback] happens spontaneously in the hallways, it’s nothing special, only about if everything is going alright or that things are going well”.

Problem solving is taken up by all team members. In general, the project leader detects a problem or a potential risk, as TM2 argues: “A problem is usually observed by [the PL] because it is a problem for him and as such it is a problem for the project in general”. Problems are perceived as common problems because they usually affect the whole project team. This is illustrated by the following quote of TM5: “Actually we then have a shared problem, [e.g.] the process needs to be improved because it is full of errors”. Consistent with the statement of TM5 of having a shared problem, problems are solved in collaboration, which according to TM1 “clarifies, in any case (...) makes the situation clearer”. The project leader believes, that problems need to be solved by considering possible alternative solutions Therefore he expects from his team members to come up with different alternatives, as indicated by the following quote: “I always tell them come with alternatives. I expect from my team members, that if they face a problem, they don’t tell me I have a problem, but that they propose the possible solutions”.

Perform team tasks is a function that is taken up by all project team members. Each team member has a different background and a special expertise. As a consequence, the team members feel where they can provide support and help others with performing their tasks. This requires a proactive attitude as indicated by TM4: “[We] show proactivity, like I can arrange this”.

To summarize, the function of defining a mission is not relevant for project team II. The function compose team is solely taken up by the project leader. The majority of the functions, namely providing resources, structure and planning, monitoring the team and managing the team’s boundaries, are fulfilled by two project team members, the project leader and an additional team member. The additional team member is in all cases TM1, except for the function of structure and planning. The team leadership functions establish expectations and goals, problem solving and perform team tasks are taken up by all project
team members. Some leadership functions are hardly present within the project team, these are sense making, challenging the team, training and development and providing feedback.

Thus, multiple team members fulfill leadership functions for the project team. However, for shared leadership mutual influence is important. Therefore, this study takes a closer look at the leadership functions, which are distributed among at least two team members. When sharing these leadership functions, leadership needs to be both provided and received by the other team members. When sharing these leadership functions, leadership needs to be both provided and received by the other team members. Table 5 lists the functions that are taken up by multiple team members and provides quotes that underscore the mutual influence process, which is the basis for shared leadership.

<table>
<thead>
<tr>
<th>Shared leadership functions</th>
<th>Provide leadership behavior</th>
<th>Receive leadership behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Providing resources</strong></td>
<td>“I’m also a specialist in my field, but the information I bring within the team is directed towards everyone. Each member should get and comprehend it.” TM1</td>
<td>“I was suddenly claimed by the project of [the PL] and thus I had to put my prior work aside and I started working fulltime for this project.” TM3</td>
</tr>
<tr>
<td><strong>Structure and planning</strong></td>
<td>“The size of the project task determines the difficulty of the task. With this knowledge, I can decide who has the most difficult task and who has to realize the greatest results.” PL</td>
<td>“The project leader guides the structure of the project, but he does this quite subtle.” TM2</td>
</tr>
<tr>
<td><strong>Monitoring the team</strong></td>
<td>“It can be like this but I don’t want it like this. Because I think that if we continue doing so, the pace will stay the same and we can better monitor the consequences of the project progress, if we change things.” TM1</td>
<td>“During the meeting there is a list with action points, and everybody has to give an update one after the other.” TM3</td>
</tr>
<tr>
<td><strong>Managing team boundaries</strong></td>
<td>“If the impact is too high, I have to escalate the situation.” PL</td>
<td>“In the beginning the project was chaotic, there was not really a project because a clear direction was lacking, nothing was written down. It definitely influenced the performance.” TM5</td>
</tr>
<tr>
<td></td>
<td>“If something needs to get done, they ask you [me] to take this up.” TM1</td>
<td>“We have learned from it [escalation]. Let them [higher management] take the decision, and we just wait because we [project team] are the executing party.” TM3</td>
</tr>
</tbody>
</table>
"I make the first move and he [the PL] adds the finishing touch. Thus this type of teamwork works pretty well". TM1

<table>
<thead>
<tr>
<th>Establish expectations and goals</th>
<th>&quot;I can indicate whether it [project requirement] is achievable within time and budget.&quot; PL</th>
<th>&quot;They [the team members] indicate whether it [a project requirement] is executable&quot; PL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;I often indicated, to the PL, that it is important to clearly communicate the project status and how we are going to realize our targets to the project board and higher&quot; TM3</td>
<td>&quot;During the meeting we make agreements on who does what, and thus different tasks are distributed and taken up.&quot; TM5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem solving</th>
<th>&quot;I also try to help when things are not clear enough&quot; TM3</th>
<th>&quot;Later they convinced me that actually it was not a good solution of the problem, it is still not a good solution, but my proposal was even worse.&quot; TM1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;Within the company, everyone immediately reacts when a small crisis situation appears, it's the same in our project.&quot; TM3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performing team tasks</th>
<th>&quot;It can also be that two people take up that action, they have a bilateral [meeting] and in the next meeting they give an update about it [their proposal].&quot; TM4</th>
<th>&quot;When an issue is signaled by the project leader and nobody feels responsible for it, it could be that I take it up.&quot; TM1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;I took up some the tasks of the test manager, I organized the acceptance tests. Actually these were not my tasks, but they weren't completed yet.&quot; TM5</td>
<td></td>
</tr>
</tbody>
</table>

In total seven out of thirteen functions are shared within this project team. This indicates that there is a high level of mutual influence on different issues. This also means that multiple people engage in sharing the leadership function to achieve the project goal.
4.3 Cross analyses of case I and II

In the following part the results of each case are compared with the use of two cross analyses. First, the findings about the internal factors are presented, followed by the findings on the distribution of leadership functions.

Table 6 provides an overview of the presence of the internal factors for each case. The comparison of case I and II shows that the results on the internal factors for shared leadership are observable in a similar manner. First, shared purpose can be considered high in both cases as the project teams have a common understanding of the project goal. This common understanding is translated into the team member’s behavior, which is directed towards the achievement of the project goal. Second, social support is considered in both cases relatively low. In general, the former analysis shows that team members do support each other on a rational level. However, in both cases team members do not provide emotional and psychological support to each other. Moreover, there are no signals that encourage empowering. In both cases team members are intrinsically motivated. Third, voice is relatively high in the studied cases, which refers to the degree of participative behavior within the project teams. Team members are involved in discussions and decision making, whereby experts and persons that are affected have a major impact on the decision making process. Finally, trust is highly present in both cases. Interviewees indicate that this is an important contributor to the overall collaboration within the project teams.

Table 6 Presence of internal factors for shared leadership for case I and II

<table>
<thead>
<tr>
<th></th>
<th>Case I</th>
<th>Case II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared purpose</td>
<td>![Graph]</td>
<td>![Graph]</td>
</tr>
<tr>
<td>Social support</td>
<td>![Graph]</td>
<td>![Graph]</td>
</tr>
<tr>
<td>Voice</td>
<td>![Graph]</td>
<td>![Graph]</td>
</tr>
<tr>
<td>Trust</td>
<td>![Graph]</td>
<td>![Graph]</td>
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</tbody>
</table>

Legend: no presence低 presence relatively low presence medium presence relatively high presence high presence
Table 7 provides a comparison of the distribution of the different leadership functions. The function of defining a mission is not displayed, as prior results indicate, that this function is not relevant for both project teams. The former analysis allows to display whether a function is taken up by only one person, by two persons or by more than two persons within the project teams. This comparison indicates that there are some dissimilarities but also some similarities between the studied project teams. In case I the majority of the functions are solely taken up by the project leader, whereas in case II almost the majority of the present functions are at least taken up by two members. Some leadership functions are in both cases distributed among two team members. Other leadership functions, such as solving problems and performing team tasks, are in both project teams taken up by all team members. Remarkably, there are also leadership functions that are in both cases absent, like training and development and providing feedback. The overall degree of distribution is higher for case II than for case I. This overview shows, that in both cases the project leader is involved in each function that is taken up, if present.

Table 7 Distribution of leadership functions for case I and II

<table>
<thead>
<tr>
<th></th>
<th>Case I</th>
<th>Case II</th>
</tr>
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<tbody>
<tr>
<td>Compose team</td>
<td>🚩 🚩</td>
<td>🚩 🚩</td>
</tr>
<tr>
<td>Provide resources</td>
<td>🚩 🚩</td>
<td>🚩 🚩</td>
</tr>
<tr>
<td>Establish expectations</td>
<td>🚩 🚩</td>
<td>🚩 🚩</td>
</tr>
<tr>
<td>Structure and plan</td>
<td>🚩 🚩</td>
<td>🚩 🚩</td>
</tr>
<tr>
<td>Monitor team</td>
<td>🚩 🚩</td>
<td>🚩 🚩</td>
</tr>
<tr>
<td>Manage boundaries</td>
<td>🚩 🚩</td>
<td>🚩 🚩</td>
</tr>
<tr>
<td>Sense making</td>
<td>🚩 🚩</td>
<td>🚩 🚩</td>
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<tr>
<td>Challenge team</td>
<td>🚩 🚩</td>
<td>🚩 🚩</td>
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<tr>
<td>Train and develop</td>
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</table>
Finally, the cross analyses also enables to compare the internal factors with the leadership functions. A closer investigation of both tables shows, that the internal factors for the development of shared leadership could impact the distribution of some of the leadership functions. The findings suggest that the internal factor social support, which is in both cases relatively low, could likely have an influence on the distribution of the functions training and development and providing feedback, which are not present. In addition, voice, in terms of involvement and participation, is highly present, which might provide an indication for the distribution of the leadership functions solving problems and performing team tasks. These functions deal with involvement and participation, and are likewise taken up by all project team members.
5 Discussion

This study aims to explore: *How is leadership manifested within innovation project teams?* To answer this research questions the concept of shared leadership is used. In particular, the focus is on innovation project teams as within these project teams shared leadership is likely to occur based on the characteristics of interdependency, creativity and complexity (Pearce, 2004). The current research addresses the gap in the empirical literature about project leadership as 1) the presence of internal factors of shared leadership is identified in project teams, 2) shared leadership is approached from a functional perspective, where team members can take up different leadership functions and 3) the mutual influence process among team members is further addressed. This approach makes it possible to obtain an overall picture about shared leadership within innovation project teams, because team members as well as the mutual influence process are considered. Further, this approach allows to comprise shared leadership as a concept that provides more insights into the complexity of the leadership behavior of all team members and their interaction. In this chapter, the results are discussed, while taking into account the before reviewed theory to explain the findings. Thereafter, practical implications are presented. Finally, the discussion chapter provides some limitations of this study and indications for future research.

5.1 Presence of internal factors for shared leadership

The results show that three out of four internal factors are present within the studied cases. The factors are found within the team environment, that is seen as an antecedent condition for the development of shared leadership. The results imply, that the present factors support the development of shared leadership, whereas the absent factors hinder the development of shared leadership. Considering the project context, this following part attempts to explain why the majority of the factors are present, except one. Below each factor is separately discussed.

First, the findings of both cases show a high presence of the internal factor *shared purpose*. An explanation therefore can be found in the general context of project work. Project teams have a clear project goal, that is usually well defined beforehand (Kaulio, 2008). The accomplishment of a project is of crucial importance and whether a project is successful or not depends on whether the end product is delivered in accordance with the
predefined project goal, in terms of time, cost, quality or satisfaction (Ika, 2009). Consequently, it can be assumed that the project goal is well-known by all team members, which directs their actions towards the realization of the shared goal. The findings suggest, that having a shared purpose is inherently linked to work in a project team, which thus already provides a basis for shared leadership. The presence of shared purpose is therefore likely to be found in all kinds of project teams.

Next to this, it should be remarked, that in both cases the project leader is seen as a key figure in aligning the team members with the shared project purpose. The project leaders make sure that their team members act in such a way that the project goal will be successfully accomplished. This is consistent with the findings of Turner and Müller (2003) who argue that a project leader is overall responsible, and thus also responsible for the end delivery of the project results. It is already argued above, that having a shared purpose is closely related to project work. However, the key role of the project leader might explain why in the studied cases there is such a high presence of shared purpose. A high shared purpose within project teams is a necessary requirement for leadership to be shared among the team members. Eventually, project teams should aspire a high level of shared purpose, because having a clear understanding of a common objective is positively related to a high level of motivation, commitment and empowerment (Kirkman & Rosen, 1999).

Second, the results show a relatively low presence of social support, as in emotional and psychological support. The findings indicate that project team members particularly support each other on the content level. This could be described to the fact that each team member is an expert in an innovation project, who is highly technical oriented. Therefore these team members might consider the content level as the most important aspect within their profession.

The findings further suggest that motivational aspects, which are related to social support, are less visible. A reason for this can be found in the literature. Turner and Müller (2003) argue that in many projects there is still much attention to the rational aspects and rather no attention to the motivational aspects. However, for project teams, it is especially important to also focus on motivational aspects, such as empowering, because empowered project team members are likely to provide even more leadership, which affects the extent to which leadership can be shared (Carson et al., 2007). Next to this, empowered team members lead to an increased level of team productivity (Kirkman & Rosen, 1999). Hence, the relatively low presence of social support can constrain the full development of shared
leadership within project teams. Project teams thus need to focus on both rational and motivational aspects.

Third, the presence of *voice* is considered to be the main internal factor for developing shared leadership (Carson et al., 2007; Wood, 2005). The findings show that voice is in both cases highly observable. The high presence can be explained by the typical needs of innovation project teams. These teams highly require activities such as knowledge creation and knowledge sharing (Fong, 2003) and they also require a high absorptive capacity (De Dreu & West, 2001). This study reveals, that both needs can be expressed in participation in decision making, in providing input for discussions and in facilitating other team members. Considering these needs, it is most likely that the internal team factor voice is always present in innovation project teams. This implies that leadership behavior, which results from the factor voice, is likely to be shared among multiple members and thus the development of shared leadership can be expected to occur.

Fourth, the results of the current study point out that *trust* is highly visible within the studied innovation project teams and that it forms the basis for collaboration. Trust is expected to be relevant for the initiation of shared leadership (Small & Rentsch, 2010). Noteworthy, the interviewees mention that trust has to grow during the project cycle. As project teams are limited in time and based on temporary agreements of different people (Ika, 2009), trust first needs to be established before shared leadership can even emerge. Team members have to show or even prove that they can be trusted (Engel Small & Rentsch, 2011). Thus, whether trust is still in an establishing phase or already established, can heavily affect whether team members are willing to provide and accept leadership from each other. Consequently, this has an influence on how easily leadership can be shared among multiple members. Only once trust is established, shared leadership can be developed.

### 5.2 Distribution of leadership functions among project team members

This chapter starts with discussing the role of the project leader. As the results of the cross analysis indicated, there are dissimilarities and similarities between the two cases. This part first addresses the leadership functions that are distributed differently among the project teams, whereof only the functions, that are relevant to the particular context of innovation projects, are discussed. Finally the leadership functions, which are distributed equally among the project teams are discussed.
The results interestingly suggest that all present leadership functions are taken up by at least the project leader. From a functional leadership approach the formal leaders “main job is to do, or get done, whatever is not being adequately handled for group needs” (McGrath, 1962, p. 5, cited in Zaccaro et al., 2001, p. 454). In line with this, the project leader seems to be the key figure in both project teams, ensuring that all functions are accomplished (Morgeson et al., 2010). Due to his formal responsibility of being overall accountable (Turner & Müller, 2003), it is reasonable to assume that some functions, such as compose team, provide resources, structure and planning, monitor the team, sense making and manage the team’s boundaries, are inherently linked to the project leader’s formal position, which is also found in the studied cases. These functions refer to what Kaulio (2008) calls the ‘managers role’, which is considered to be the main role of a project leader.

Hence, the project leader has the ability to influence the team processes and the project progress (Ensley et al., 2003), which is a logical consequence of project team structure (Wood, 2005). Both project teams possess a vertical team structure, in which the project leader is vertically positioned above the project team. This structure, though unconsciously and indirectly, emphasizes a downward relationship between the project leader and fellow project team members (Pearce & Conger, 2003). Thus the current study shows that the vertical project leader still has an important role within project teams.

**Dissimilar distribution of leadership functions between case I and II**

The findings show that especially in case I the project leader performs the majority of the functions on his own, whereas in case II the project leader hardly takes up a leadership function on his own.

According to Schmid and Adams (2008), the project leader needs to clearly communicate expectations and goals towards his team. This function, *establish expectations and goals*, is found to be one of the most important, because it contributes to effective team performance (Morgeson et al., 2010). Clear goals stimulate and motivate the individual’s behavior (E. A. Locke & Latham, 2002). It is interesting, that the results of the current study concerning this functions contrast each other. In case I this function is only taken up by the project leader, whereas in case II all team members provide this leadership function. An explanation for the results of case I could be the influence of time pressure, because of a fixed deadline set by the external client. As a result, the project leader sets clear expectations and goals for his whole team. Project team II does not have such a strict deadline of the internal client. In project team II establishing expectations and goals is seen as a team function.
Subsequently, expectations are not imposed by the project leader, but rather agreed upon as a team, which encourages self-management. This concept of self-management is a substitute of formal leadership and it is argued that a team, that is able to manage itself is characterized by being more adaptable and stronger (Manz & Sims, 1991). Thus, in case II all team members are willing to provide leadership and they are also willing to receive leadership from their fellow members. Taken together, the data suggests that the distribution of this function seems to be depend on several other factors, such as time pressures, the role of the client and the degree of self-management.

In general, for teams dealing with innovation tasks, structure and planning is very helpful as it guides the team and provides direction (Morgeson et al., 2010). However, within the existing literature on structure and planning, there is no consensus whether it should be done by one or multiple persons. On the one hand, it is argued that structure and planning is solely the task of project leaders as they define, direct and structure the project and the tasks of their team members (Schmid & Adams, 2008). This can be described as a behavior of initiating structure (Bass, 1990; Yukl, 2007), as in case I, where the function is clearly provided by the project leader. On the other hand, structure and planning can be distributed among multiple members, as the findings of case II suggest. The team members of project II accept receiving leadership for this specific function from two persons. Reasons for this might be, that in case II work is globally assigned in terms of timing and scheduling and appointments are based upon reciprocal agreements. Research from Hiller, Day & Vance (2006) provides support for enhanced team effectiveness, when multiple persons engage in structure and planning activities. Hence, the results indicate that structure and planning can be distributed or not and literature provides advantages for both options.

In line with the before mentioned findings the function managing boundaries is in case I taken up by just the project leader, whereas in project II this is done by two members. In the existing literature managing boundaries, including the effective communication towards the client (Rodrigues & Williams, 1998), is clearly the project leader’s responsibility (Druskat & Wheeler, 2003; Turner & Müller, 2003). Especially because team members’ tasks are very much interdepend on each other, as in innovation teams, the need for a single person managing the team’s boundaries is high. It is important to provide clarity over who is responsible for the corresponding boundary spanning activities. Moreover, for the external environment it should be clear who to address within the project team. The results also show, that when team members are personally responsible for establishing their own expectations towards the team, as in case II, the function of managing boundaries can also be distributed
among two members. However, this only works when these members clearly communicated their responsibility towards both the internal team members and the external environment.

**Similar distribution of leadership functions between case I and II**

Next to dissimilar findings, the studied project teams show some similarities regarding the distribution of leadership functions.

It is likely to assume, that the function of structuring and planning is closely related to the function of *monitoring the team* and therefore a comparable distribution could have been expected. However, the current results show that this is not the case. The results indicate, that the function of monitoring is in both project teams shared among two team members, the project leader and a team member. Monitoring other’s performance is essential to achieve goals (Morgeson et al., 2010). For project leaders alone it is not possible to monitor the performance of all the team members due to the complexity of the different tasks (Pearce, 2004). Besides, it might be challenging for a project leader to monitor the amount and content of different tasks a project team has to deal with. Therefore, project leaders need additional support from an another team member, who has much expertise and experience. This additional team member supports mainly with regards to the content, as the findings indicate. Furthermore, the findings reveal, that the project team members receive leadership behavior of both the project leader and the other team member. Thus, two sources of influence, which monitor the team’s performance are accepted.

In addition, the cases show similar results on two functions, which are in both projects taken up by all team members. The high presence of voice in the project teams is reflected in the findings of the leadership functions *problem solving* and *performing team tasks*. The findings suggest that these functions are seen as a group activity. The reason for this can be found in the nature of project work, which is highly interactive (Fong, 2003). Especially for innovation projects, knowledge and new insights are necessary to come up with solutions for complex problems. Therefore team members are in constant interaction with each other to pool that knowledge together (Fong, 2003). Based upon the findings, project team members seem to be naturally willing to provide leadership and accept leadership from their fellow team members, who are characterized as highly developed, when searching for a solution. Thus, problem solving and performing team tasks are essential team activities, which are likely to be shared within the whole project team.

Finally, some functions are absent within the studied cases. The results on the presence of the factor social support, which is relatively low, indirectly indicate that
motivational and emotional aspects are less visible within the project teams. Based upon the analysis, the functions of training and development and providing feedback are actually not present within both project teams. Consistent with the low presence of social support, these findings are not surprising.

In order to establish training and development, first deficiencies need to be detected within the team’s capabilities (Burke et al., 2006). However, there is less time to extensively put effort in training and development as projects are by nature forced to an end (Turner & Müller, 2003). The fact that project teams face certain time pressures due to the deadline is also found in the results.

Further, the results show that feedback, which assesses the individual’s action over a certain period of time, is not provided within the project teams. This could be explained due the fact that traditionally project team members are used to report to their line manager, who has the formal authority to provide the feedback. Moreover in such a situation, the line manager exercised top down influence by only providing feedback. Within a project team no one has hierarchical authority over the team, not even the project leader (Cleland, 1995). As a consequence, project team members seem to be unfamiliar, and also uncomfortable, with both providing and receiving feedback inside the project team, where no one has the authority to do so. Providing feedback should happen on each influence level, upward, downward and lateral. Another explanation for the absence of providing feedback could be, that formal feedback appears to be perceived by the interviewees as too time consuming. Both explanations might clarify why providing feedback is not established within the studied cases. Despite the lack of formal feedback moments, project team members frequently help others to solve problems, as discussed in de paragraph before. This could be also referred to as a kind of ‘feedback’, although it concerns a specific situation. Within the empirical literature, receiving feedback is undeniable for realizing goals (Longenecker et al., 1994) and it can foster creativity (Taggar, 2002). Therefore the absence of these leadership functions in the innovation project teams might have consequences for the performance of the project team members.
To resume the discussion, based on the results concerning the internal factors, the distribution of some leadership functions could already be indicated, as the factors provide a basis for particular functions to be shared. Moreover, the extent to which leadership functions are dispersed, depends upon the willingness of project team members to share certain leadership functions, which is represented in the mutual influence process. Finally, the ability to share leadership functions also depends upon the context of the project. It results, that leadership behavior within project teams, as in case I, is on the one hand rather focused on more vertical leadership provided by the project leader. On the other hand, leadership can also be frequently shared among multiple team members, as in case II. As a consequence, it could be assumed that once a leadership function is established in a certain way, it influences also how other leadership functions are distributed.
5.3 Practical implications

On the basis of the results, practical implications can be provided. The concept of shared leadership provides a different perspective to understand project leadership. It fits well in the understanding of a dynamic project environment, where different skills and competencies are needed to accomplish the project goal. It is difficult for project leaders to handle on their own the complexity and ambiguity many projects face. Therefore, project teams need to rely on all the expertise and knowledge of their members. Consequently, all team members can provide leadership when they possess leadership qualities.

A first practical implication refers to the lack of social support in innovation project teams. Specifically motivational aspects are missing, such as motivating each other and encouraging individual empowerment. A negative consequence could be that the teams therefore do not reach the highest team productivity. Project teams could pay more attention to these motivational aspects. By further establishing this internal key factor, it is likely that project teams learn more from each other, which finally could result in greater personal success and greater overall project success.

A second practical implication refers to the fact that shared leadership has to emerge during the collaboration of project team members. To promote this process the project leader is essential. This study shows, that vertical leadership from the project leader still exists due to the central role of the project leader within the project formation. Consequently, project leaders need to be aware of the fact, that they also play a key role in stimulating the process of sharing leadership among the team members. Project leaders can be considered to be a role model, when for example accepting leadership provided by their team members and when explicitly showing the possibilities for upward influence within the project team. Hence, project leaders could encourage their team to engage more in shared leadership.

Moreover, the process of establishing shared leadership within a project team can also be facilitated by the wider organization. A training and development system could be used to familiarize project teams with the concept of shared leadership and explain the value of sharing the leadership functions. On the one hand, project leaders, who could be used to their vertical position, may experience shared leadership as a loss of control. On the other hand, project team members may need to learn how to provide different forms of influence. Thus, both the project leader and project team members need to be prepared to be able to engage in this reciprocal activity. The organization could facilitate this preparation.
5.4 Limitations and future research

It should be noted that the findings of the present case studies are subject to some limitations that concern the subjectivity and the sample of the study.

First, bias within qualitative research is inevitable (Miles & Huberman, 1984) because this research is based on subjective perceptions of both the interviewees and the interviewer. Though the study tried to keep the bias as low as possible.

Second, two cases have been studied in a very particular context of innovation projects. Within these two cases, a group of representatives, that is team members with different functions and responsibilities, were selected to be interviewed. Taking into account, that the results of this study are based on two innovation project teams with representative members, it is recommended that future research uses a richer data sample, which consists of more projects teams and more project team members to increase the external validity of the findings. Due to the variety of projects, future research should study shared leadership in other project environments to enhance the general understanding of shared leadership in project teams. Still, data was collected in a consistent manner taking into account the practical considerations of the researcher, such as time constraints. Besides the selected cases differed with regard to the clients (case I internal, case II external), which allowed the researcher to gain interesting insights into different types of projects and their impact on the development for shared leadership.

Another limitation concerns the observation of the team meetings. The direct observations were conducted at the mature phase of the projects, to increase the possibility to study shared leadership, which needs time to develop. As shared leadership is seen as a team process (Engel Small & Rentsch, 2011), future research should consider a longitudinal research to get a deep understanding of the development of shared leadership during a project cycle.

Despite these limitations, the study can be seen as a contributor to the general knowledge about shared leadership, because it points out how multiple leadership sources simultaneously interact with each other (Morgeson et al., 2010). Next to this, the current research makes a first approach towards studying project leadership from a shared perspective. Finally, the present study can provide useful practical insights for the studied project teams.
6 Conclusion

The aim of this research is to contribute to the understanding of shared leadership within innovation project teams. This research provides a complete view on how leadership is manifested within the studied project teams.

The results on the internal factors, that support the development of shared leadership within the project, reveal that 1) project team members ensure the accomplishment of a shared project purpose, 2) they participate in and provide input towards the project progress and 3) they collaborate on the basis of trust. Project team members do not provide social support to each other. Considering the nature of project work, this is plausible and it implies that within project teams the leadership function can be shared to a certain extent, based upon the three present factors. In line with this, it can be concluded that leadership within project teams is partly exercised by multiple team members, which can be characterized as shared leadership. In one case, functions are mainly taken up by the project leader, whereas in the other case, these functions are taken up by both the project leader and an additional team member. Furthermore, specific leadership functions, that result from the presence of voice, such as problem solving, are simultaneously distributed among all team members. In contrast, the functions providing feedback and training and development, that result from the absence of social support, are not taken up by team members. Moreover, it is interesting, that the results for the shared functions are found for both providing and accepting leadership behaviour, whereby indicating the presence of shared leadership on these particular aspects.

In addition, a conclusion is that the project leader, who performs every function taken up within the teams, is a key figure. The project leader has much influence on the project, which results in the presence of vertical leadership. Hence, the current study shows that both shared and vertical leadership are manifested within the innovation project teams.
References


Appendix

Appendix 1a interview scheme for project leader

Introduction interview (5 min)
- Introduction Leonie
- Stress the importance of the interviewee for this research, thank interviewee for collaboration (mentioned in mail before)
- State the duration of the interview (ca. 1 hour, mentioned in mail before)
- Answers are anonym and highly confidential (mentioned in mail before)
- There are no wrong answers, every answer is valuable
- Question whether interview can be recorded to ensure validity (mentioned in mail before)

Theme 1: Introduction participant, background and current role (5 min)
- Could you please introduce yourself briefly, including your background and your current role/position within the project team?

Theme 2: Project and project structure (10 min)
- Could you please describe the project in terms of its objective, project approach and progress? (Who was the initiator of this project? Who is involved in the project approach? How is it going?)
- Could you please explain the team composition of this project? (Formal structure, is this important? Do you find the formal team composition valuable?)

Theme 3: Role project leader (5 min)
- Could you please explain what your role as a project leader is within this project? (How is your relation to your team members? Are you content wise involved in this project?)

Theme 4: Team roles, collaboration, interaction, influence (25 min)
Within this research I’m particular interested in the way you work together in this project. To investigate the way you work together as a team, I would like to ask you to answer the following questions with the foundation of recent examples to support it.
- What are, according to your opinion, your responsibilities within this project team? Can you please answer this question with the use of some key words. (How did you came up with these responsibilities? Why are these responsibilities yours; formal or with your own initiative? As a researcher I’m particularly interested in the process, did the responsibilities evolve over time or were the responsibilities assigned? What are your working tasks (instead of responsibilities)?)
This project is formed of members with different kind of backgrounds.
- Could you, with the use of an example, explain how differences in opinions among team members are taken care of? (How are conflicts solved? Who is involved in this? How did you experience this? How was this situation?)

The next question deals with the process of decision making.
- Could you please explain, with the use of an example, how decisions are taken within this project team? (How does this proceed? Who was involved at the decision making? How did you experience this?)

For the next question I’m interested in (conscious) influences within the team.
- Could you please give an example of a situation where conscious influence was present among the team members? (Could you think of a situation where a team member has influenced you in such a way, that you did something differently than supposed to? Do you have an example where you intended to influence a colleague?)

Theme 5: Reflection on given answers (10 min)
Finally, I would like to ask you to put yourself in your colleague’s place.
- Do you think your colleagues would have given the same answers as you did?
- In other words, do you think your answers are representative?

Closure:
- Interviewer closes the interview and thanks interviewee for his/her time and collaboration
Appendix 1b interview scheme for project team member

Introduction interview (5 min)
- Introduction Leonie
- Stress the importance of the interviewee for this research, thank interviewee for collaboration (mentioned in mail before)
- State the duration of the interview (ca. 1 hour, mentioned in mail before)
- Answers are anonym and highly confidential (mentioned in mail before)
- There are no wrong answers, every answer is valuable
- Question whether interview can be recorded to ensure validity (mentioned in mail before)

Theme 1: Introduction participant, background and current role (5 min)
- Could you please introduce yourself briefly, including your background and your current role/position within the project team?

Theme 2: Project and project structure (10 min)
- Could you please describe the project in terms of its objective, project approach and progress? (Who was the initiator of this project? Who is involved in the project approach? How is it going?)
- Could you please explain the team composition of this project? (Formal structure, is this important? Do you find the formal team composition valuable?)

Theme 3: Role project leader (5 min)
- Could you please explain how in your opinion the project leader fulfills his role within this project? (How is your relation to your project leader?)

Theme 4: Team roles, collaboration, interaction, influence (25 min)
Within this research I’m particular interested in the way you work together in this project. To investigate the way you work together as a team, I would like to ask you to answer the following questions with the foundation of recent examples to support it.
- What are, according to your opinion, your responsibilities within this project team? Can you please answer this question with the use of some key words. (How did you come up with these responsibilities? Why are these responsibilities yours; formal or with your own initiative? As a researcher I’m particularly interested in the process, did the responsibilities evolve over time or were the responsibilities assigned? What are your working tasks (instead of responsibilities)?)

This project is formed of members with different kind of backgrounds.
- Could you, with the use of an example, explain how differences in opinions among team members are taken care of? (How are conflicts solved? Who is involved in this? How did you experience this? How was this situation?)

The next question deals with the process of decision making.
- Could you please explain, with the use of an example, how decisions are taken within this project team? (How does this proceed? Who was involved at the decision making? How did you experience this?)
For the next question I’m interested in (conscious) influences within the team.

- Could you please give an example of a situation where conscious influence was present among the team members? *(Could you think of a situation where a team member has influenced you in such a way, that you did something differently than supposed to? Do you have an example where you intended to influence a colleague?)*

**Theme 5: Reflection on given answers (10 min)**

Finally, I would like to ask you to put yourself in your colleague’s place.

- Do you think your colleagues would have given the same answers as you did?
- In other words, do you think your answers are representative?

**Closure:**

- Interviewer closes the interview and thanks interviewee for his/her time and collaboration
Appendix 2 invitation mail

Dear X,

Herewith I would like to provide you more information about the interview. The interview will take place on 23rd November 2011, at 11 am. Moreover, I would like to thank you for your time and cooperation!

Goal of the study
The goal of the study is to get more insights into the collaboration of project teams.

Interview
The interview will 1 hour. During the interview the questions will refer to the project and the way you work together in the project team. You do not need any preparation. But if you like you can already think about topics such as the project approach, contact with your colleagues and your role within the team.

Audio recording
The interview will be audio recorded. This is necessary for this study because it enables me as research to literally write down the interview in order to analyze the data objectively. After the analysis the recordings will be deleted.

Confidentiality and anonymity
As a researcher I would like to stress that the participation at this study, the conversation during the interview and the audio recording will be treated highly confidential and anonymous.

For further questions or comments, please do not hesitate to contact me.

Best regards,

Leonie van Lith
## Appendix 3 coding schedule for the observation

<table>
<thead>
<tr>
<th>Date:</th>
<th>Name of observer:</th>
<th>Project:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the group members:</td>
<td>Arrangement of the group:</td>
<td></td>
</tr>
</tbody>
</table>

### Non-verbal behavior

**Eye contact**
e.g. special person vs. whole team

**Listening behavior**
e.g. simultaneous speech vs. waiting on your turn, everyone listening vs. only committed people to specific topic

**Attitude**
e.g. active vs. passive, open vs. reversed

**Communication style**
e.g. one-sided vs. two-sided, informal vs. formal

### Provide support

e.g. being responsive to others, giving encouragement and support, building on ideas, stimulating team contributions

### Interaction

e.g. acting as peacemaker, calming things down, compromising

### Participative behavior

e.g. give direction, raise voice, providing arguments, make decision by voting, consensus, seeking suggestions, offering direction, taking initiative

### Performing group roles

e.g. spokesperson, time-keeper, structure and planer, critical person, humorist
## Appendix 4 coding scheme

### Deductive codes

<table>
<thead>
<tr>
<th><strong>Functional leadership</strong></th>
<th>Functional leadership suggests that the leadership role is “to do, or to get done, whatever is not being adequately handled for group need” (McGrath, 1962, p. 5, in Morgeson et al., 2010, p. 13)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compose team</strong></td>
<td>Selecting a cohort of individuals who will be successful in accomplishing the team task outlined, ensuring that the mix of individuals is appropriate over time as the team develops and ensure that team members form trusting and cooperative relationship (Morgeson et al., 2010, p. 12, 13).</td>
</tr>
<tr>
<td><strong>Define mission</strong></td>
<td>Define the team's mission concerns determining and communicating the organization's performance expectations for the team in such a way that they are broken down into tangible, comprehensible pieces (Morgeson et al., 2010, p. 13).</td>
</tr>
<tr>
<td><strong>Establish expectations and goals</strong></td>
<td>This leadership function involves establishing performance expectations and setting team goals (Morgeson et al., 2010, p. 14).</td>
</tr>
<tr>
<td><strong>Structure and plan</strong></td>
<td>Structure and plan refers to determining how best to achieve the performance targets in terms of method, role clarification and timing/scheduling (how work will be accomplished, who will do which aspect of work and when the work will be done) (Morgeson et al., 2010, p. 12).</td>
</tr>
<tr>
<td><strong>Train and develop</strong></td>
<td>This leadership function ensures that each team member has the knowledge and skills required to effectively perform his or her role within the team and the specific task work associated with that role and training and developing the team regarding the interpersonal processes associated with effective team work (Morgeson et al., 2010, p. 13).</td>
</tr>
<tr>
<td><strong>Sense making</strong></td>
<td>Sense making involves identifying essential environmental events, interpreting these events given the team's performance situation, and communicating this interpretation to the team (Morgeson et al., 2010, p. 18).</td>
</tr>
<tr>
<td><strong>Providing feedback</strong></td>
<td>Providing feedback concern timely, specific, objective and balanced feedback to the team and to its individual members which enables the team to effectively assess its past and current performance and then adapt as necessary and develop over time (Morgeson et al., 2010, p. 19).</td>
</tr>
<tr>
<td><strong>Monitor team</strong></td>
<td>This function refers to examining the team's processes, performance and the external team context, including monitoring and evaluating the team's progress toward task completion and the resources available to the team (Morgeson et al., 2010, p. 20).</td>
</tr>
<tr>
<td><strong>Managing team boundaries</strong></td>
<td>This function entails managing the relationship between the team and the larger organizational context by communicating and coordinating with key constituents or...</td>
</tr>
</tbody>
</table>
Challenge team
This function refers to challenging the teams with regard to their task performance and confronting the team's assumptions, methods and processes in an effort to find the best ways of accomplishing the team's work (Morgeson et al., 2010, p. 22).

Perform team tasks
This leadership function involves taking a more active role in the team's work by participating, intervening, or otherwise performing some of the team's task work (Morgeson et al., 2010, p. 22).

Solve problems
Solving problems can involve directly engaging in or supporting the team in problem assessment, solution development and implementation of the solution (Morgeson et al., 2010, p. 23).

Provide resources
Providing resources includes obtaining and providing informational, financial, material and personnel resources for the team (Morgeson et al., 2010, p. 24).

Shared leadership
A dynamic, interactive influence process among individuals in group for which the objective is to lead one another to the achievement of group or organizational goals or both. This influence process often involves peer, or lateral, influence and at other times involves upward or downward hierarchical influence (Pearce & Conger, 2003, p. 1).

Shared purpose
Team has similar understandings of their team’s primary objectives and takes steps to ensure a focus on collective goals (Carson et al., 2007, p. 1222).

Social support
Team members’ efforts to provide emotional and psychological strength to one another (Carson et al., 2007, p. 1222).

Voice
Degree to which a team’s members have input into how the team carries out its purpose (Carson et al., 2007, p. 1222).

Abductive code

| Trust | Trust is defined as a willingness to be vulnerable to another party and a willingness to take risks in relationships (Mayer, Davis & Schoorman, 1995, in Engel Small & Rentsch, 2011, p. 205). |

Auto coding interview questions

| Team characteristics | How do interviewees characterize their team |