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PhD Dissertation

Shared Leadership and Team Learning:
The Story of Three Project Teams

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1 Introduction

1.1 Background and Context

Over half a century ago, scholars and practitioners identified **leadership** as the changing parameter for improving organizational performance (Bass, 1985; Cannella & Rowe, 1995; Jing & Avery, 2008; Rowe, Cannella, Rankin, & Gorman, 2005). Effective leadership has been identified as enhancing the performance of the respective unit and facilitating the attainment of set goals (Bass, 1985; Gordon & Yukl, 2004). In particular, effective leadership has been shown to increase performance indicators such as sales, profit margin, market share, innovation, productivity, or the cost per unit of output (McGrath & MacMillan, 2000; Vera & Crossan, 2004; Yukl, 2010), depending on the focus and context of the study. Leadership not only positively enhances performance in various aspects, but has also been shown to enhance followers' attitudes, perceptions and beliefs (Gordon & Yukl, 2002). In this case, research has shown that leadership enhances, amongst other things, followers' quality of work life, as well as increasing their self-confidence, their skills and their psychological growth and developments (Yukl, 2010). Further, the importance of effective leadership also becomes apparent when looking for negative influences on performance and followers' attitudes in the case of ineffective leadership; in a recent study flaws in leadership led to negative aspects of followers' attitudes such as absenteeism, work slowdowns and willful sabotage of facilities (Amabile, Schatzel, Moneta, & Kramer, 2004; Yukl, 2010).

Attempts to better understand the role of leadership in organizations has brought about different kinds of conceptions of leadership: Early studies focused on traits and personal attributes which have characterized effective leaders of successful outperforming organizations (Bowditch et al., 2008). Another stream of leadership literature focused on the behaviors effective leaders are engaged in. Within this behavioral stream of leadership, which is the one I follow in this PhD project, effective leadership has been regarded as a combination of leadership behaviors towards the task, relations and change (Yukl, 2010). In this regard, the team leader does not only influence and facilitate the current work; performed leadership behaviors also prepare the followers to meet future challenges (Yukl, Gordon, & Taber, 2002). In this sense, Yukl (2010) recently defined effective leadership as "…the 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, 2010: 26)

Leadership as a key driving force for improving performance has been considered at three main different hierarchical levels of the organization, namely 1) dyadic, 2) strategic and 3) team levels of leadership processes:

Most of the research has been done at the 1) dyadic level of conceptualization for leadership. The focus is mainly on the relationship between the leader and the individual follower who is usually a subordinate (Avolio, Walumbwa, & Weber, 2008; Gordon & Yukl, 2004). In particular, researchers look at how leadership influence induces the follower to be more motivated as well as capable of successfully carrying out the assigned task (Yukl, 2010).

2) Strategic leadership refers to people at the top of the organization (Gordon & Yukl, 2004; Hambrick & Pettigrew, 2001). In this respect, the focus of this stream is on how executive leadership supports the survival and prosperity of the organization. In doing so, these studies shed light on the impact of the CEO on an organization's adaption to the environment, acquisition of necessary resources, or efficient processes to produce organizational product or services (Vera & Crossan, 2004; Yukl, 2010).

As teams have increasingly become the main building blocks of organizations (Guzzo & Dickson, 1996), scholars recently started researching 3) leadership at the team level of analysis and looked at the role of team leaders in promoting, developing, and maintaining team effectiveness (Mathieu, Maynard, Rapp, & Gilson, 2008; Hackman & Wageman, 2005). Teams defined as work groups embedded in an organizational context with a clear task responsibility for a product or service (Hackmann, 1987), are often researched from an Input-Process-Output perspective (Hackmann, 1987; McGrath, 1984). Here too, team leadership scholars apply this approach and review how leaders influence team processes which, in turn, determine team performance (Zaccaro, Rittman, & Marks, 2001). Contrary to the dyadic leadership perspective, at the team level of analysis the team leader influences determinants of team effectiveness which

involve most members of the team and not a single follower, as in the dyadic leadership stream (Yukl, 2010).

A recent meta-analysis on the relations between leader behaviors and their impact on team output highlights this crucial role the team leader plays in teams (Burke, Stagl, Klein, Goodwin, Salas, & Halpin, 2006). By applying the behavior school of leadership, the authors went beyond just the positive link between team leader and team performance and shed further light on the role of particular leader behaviors on a team's output. This study suggests that task-focused behaviors affect the perceived team effectiveness and team productivity. Similarly, person-focused leader behaviors are also positively related to team effectiveness and team productivity (Burke et al., 2006).

Not only has team leadership been shown to benefit a team's performance (Burke et al., 2006; Hackman, 2002; Mathieu et al., 2008); **learning** as one aspect of team's group processes has also demonstrated a team's performance benefits (Edmondson, 1999; Edmondson, Dillon, & Roloff, 2008). Some researchers have even claimed that team learning is the most critical ingredient for team performance (Edmondson et al., 2008; Kayes, 2004). Learning in teams has been shown to increase a team's efficiency as well as its innovativeness (Sarin & McDermott, 2003; Wong, 2004). Learning supports teams in coming up with a kind of collective knowledge base: This kind of "community memory" (Wong, 2004: 646) includes task knowledge in the form of developing routines for performing the task (Cohen & Levinthal, 1990), or concerns the knowledge of group members and their expertise (Wong, 2004). Such shared insights align collective action. Hence, it improves a team's coordination and reduces misalignments (Sarin & McDermott, 2004) which determine a team's efficiency. Not only is a team's efficiency enhanced due to learning; a team's innovativeness has also been shown to increase. The creation and application of a team's new insights are required for greater innovation (Schoonhoven, Eisenhardt, & Lyman, 1990): Greater innovation necessitates a greater development of a team's knowledge which is created by insights gained from internal reflective discussions or externally gained insights or, in other words, team learning (Wong, 2004).

The beneficial effects on team performance resulting from team learning have been found in diverse kinds of teams, ranging from innovation research teams (Bresman, 2008), project teams (Edmondson, 1999), surgery (Edmondson, 2003; Edmondson, Bohmer, & Pisano, 2001) or to nurse teams (Edmondson, 1996). The studied teams all share the task characteristic of being involved to a greater or lesser extent in non-routine tasks. However, for teams that are involved in very repetitive tasks, such a positive link between team learning and performance is not constantly given (Bunderson & Sctcliffe, 2003; Edmondson, 1999). Learning takes time with no assurance of results, which might decrease efficiency and hence dampen team performance in particular for those teams engaged in high non-routine tasks. In contrast, the risk of wasting time for teams that are exposed to change and uncertainty might be small in comparison to the potential gains for team learning (Edmondson, 1999, Gibson & Vermeulen, 2004; Kayes, 2004).

A dominant perspective on team learning in the current literature is rooted in the work of John Dewey (1922). In contrast to merely relying on automatic habitual behaviors, learning is regarded as an ongoing process of designing, implementing, reflecting upon and modifying actions (Dewey, 1922). Edmondson (1999) built on this learning concept as an interplay of reflection and action and defined specific learning behaviors of the team which represent learning. When team members are engaged in behaviors such as "asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of action," (Edmondson, 1999: 353), the team is regarded as a learning team. In this tradition, team learning is rather regarded as a socially based concept which is dependent on team members' interaction, such as giving feedback or asking for help in order to generate new knowledge.

In sum, these team learning definitions have in common that their focus lies in the learning processes. The processes of generating new knowledge (Kasl et al., 1997) or self-reflection (Edmondson, 1999) are evidence of team learning. However, such conceptualizations of team learning do not show whether these teams have "really" acted on gained insights and profited from reflective processes (Edmondson, 2002).

In order to overcome this limitation, recent concepts of team learning also include the outcomes generated by team learning activities (Argote et al., 2001; Edmondson, 2002; Gibson & Vermeulen, 2003). In this tradition, Edmondson (2002) conceptualizes team learning as an interplay of reflection and action, by differentiating between behaviors which *promote a team's insights* and those that *apply the team's gained insights*. In particular, both learning categories of reflection and action are non-substitutable, meaning that teams need to engage in both learning categories to perform complete learning cycles (Edmondson, 2002).

However, research has shown that teams often fail to learn and tend to behave in rather habitual ways (Edmondson, 1999; Gersick & Hackman, 1990; Kayes, 2004). Teams fail to learn whenever they neglect to reflect on their activities, or when they engage in reflective behaviors, but omit to implement these new insights following reflection (Edmondson, 2002). Flaws in learning at the team level of analysis have been shown to impact negatively on an organizational capacity to learn (Edmondson, 2002: Senge, 1990), even bringing about a breakdown of performance of the whole organization (Kayes, 2004).

As team learning is socially based, studying factors influencing team members' interactions promises a better understanding of factors enabling team learning. Team learning is not only embedded in a social context which shapes team learning. Besides team members' learning concerning their social environment (social team learning) (Jehn & Rupert, 2008), teams also need to learn about and reflect on the team's task, the most referred-to kind of team learning, namely task team learning (Jehn & Rupert, 2008; Tucker, Nembhard, & Edmondson, 2007). The team leader is the person who has influence on both dimensions, the social context and the task dimension, when looking for a classical behavioral definition of leadership. According to Yukl (1989), leadership "influences processes involving determinants of the group's or organization's objective, motivating <u>task</u> behavior in pursuit of these objectives, and influencing <u>group maintenance and culture</u>."(Yukl, 1989: 5)

As the team leader becomes the key interface between team members and is in charge of maintaining the social context the team is embedded in as well as taking charge of

motivating task behavior in accordance with set goals, I assume that the team leader might well be in a position to influence team learning, as these two dimensions of task and social embeddedness are essential ingredients of engaging in team learning.

In particular, the interest in studying the **role of leadership in team learning** is due to the following thoughts:

As aforementioned, leadership from a behavioral school of thought is made up of two main leadership roles effective leaders are engaged in, namely managing the task and the relations dimensions of teams (Yukl, 1989). Recently, Yukl (2010) has added a further dimension of leadership, namely the change role of leadership. Hence, in this latest understanding of leadership, effective leaders perform leadership activities with regard 1) to team members' relations among each other, 2) to the project task, and 3) to change.

Firstly, team leadership might stimulate learning via the relations dimension of leadership: One of the main activities regarding 1) the relations dimension of leadership is building and maintaining members' relations. These leadership activities are directed at getting to know team members (Burke et al., 2006; Yukl, 2010). A friendly and safe team environment develops over time due to the team leader's leadership activities of building and maintaining relations (Amabile et al., 2004). Such a psychologically safe team climate is especially essential for team learning to result from socially based interactions among the whole team. Especially in complex, non-routine tasks, answers to diverse project questions are not always at hand. Team members need to rethink their approaches by asking each other for feedback, admitting errors or discussing unexpected outcomes of actions. As these learning behaviors pose a threat to be faced (Brown, 1990), team members need to feel secure in order to overcome reluctance to disclose their errors or to acknowledge their ignorance (Edmondson, 1999).

Secondly, in accordance with Yukl (2010), effective leaders also engage in task-oriented leadership behaviors. Initiating structures by setting team goals and clarifying them helps team members to know where they want the project to go, the status quo and how to achieve their goals (Sarin & McDermott, 2004). These leadership activities help

team members to realize the scope of the project and each other's responsibilities. Knowing where the project is aimed at and the accountability of each member serves as the basic foundation for a team's communicative interaction (Bolman & Deal, 1993): team members know their respective duties which might serve as the basis for giving each other feedback. Knowing the diverse responsibilities, which are then clarified, might help team members to integrate and act on gained insights in order to convert these insights into reality makes up team learning.

Thirdly, in accordance with a recent leadership understanding, effective leadership is complemented by the change dimension of leadership (Yukl, 2010). Although the task dimensions of leadership focus more on structuring a team's activities and concentrating on existing procedures, the change dimension stimulates team members to open themselves to something new and to change (Atuahene-Gima, 2003). Leaders performing change-oriented leadership activities are concerned with grasping the "external environment, finding innovative ways to adapt to it, and implementing major changes in strategies, products, or processes." (Yukl, 2010). Besides grasping external ideas outside the team's boundaries, leadership in this role is also concerned with challenging their followers to rethink existing procedures (Schippers et al., 2009). Leaders influencing team members with such change-oriented leadership activities might well be in a position to encourage the team to gain new insights through stimulating the team members to reflect on new ways.

Furthermore, current research on team effectiveness shares my interest in studying the role of leadership in team learning. A literature review by Burke, Stagl, Klein, Goodwin, Salas, and Halpin (2006), for instance, found out by observing what leadership behaviors are functional in teams that only little research has been done on the relationship between leadership and learning. These scholars concluded that, "although researchers have argued that team leaders play a key role in the creation and maintenance of effective teams, there has been little research conducted on the relationship between leadership behaviors and team learning." (Burke et al., 2006: 299) In a similar vein, Berson, Nemanich, Waldman, Glavin, and Keller (2006) and Sauquet (2000) also claim that there is not much systematic research linking leadership and team learning. Only Edmondson's stream of research (1999; 1996; 2003) highlighting the

importance of a psychologically safe team climate for team learning merely touches on the topic of leadership in team learning. This is because the link was examined between psychological safety, enhanced by context support and team leader coaching, and team learning, but not any specific leadership behaviors and their impact on team learning. However, Edmondson (1999) motivates others to continue working on more systematic research on the link between leadership behaviors and team learning. In her own words: "It focused on two antecedent conditions with clear conceptual relationships to team psychological safety, but did not examine a wide range of managerial factors that might also affect team learning. For example, team leader coaching was included in the study, but the data did not specify leader behaviors precisely." (Edmondson, 1999: 378) Hence, not only the above presented theoretical reasoning for studying the link between leadership and team learning, but also scholars in the fields of leadership (Berson er al., 2006; Burke et al., 2006) and of team learning (Edmondson, 1999) support my research interest in studying leadership and team learning.

When referring to leadership, most of the existing research narrowly highlights the impact of the individual leader (Hackman, 2002; Mathieu et al., 2006). These studies tend to identify the most crucial leadership activities or roles for effective team functioning (Amabile et al., 2004). Leadership roles, defined as the sum of various behaviors (Bowditch, Buono, & Stewart, 2008) which, according to Yukl (2010), are classified into the task, relations and change substance, might also be shared among the team, the so-called **shared leadership** (Carson, Tesluk & Marrone, 2007). So far, however, only little research has been done on this kind of leadership approach with a form of distributed leadership stemming from the team (Carson et al., 2007, Day, Gronn, & Sales, 2004; Gronn, 2002), instead of focusing on the individual leader.

This lack of research is surprising, especially against the background of trends in team structure and design. First, a single leader may be less likely to successfully perform all leadership functions on his or her own due to the increase in ambiguity and complexity in project tasks (Day et al., 2004; Cox, Pearce, & Perry, 2003). Second, knowledge workers' desire for more autonomy; and third, companies' need for flatter organizational structures with an intertwined increase of self-managing team structures

(Ensely, Hmieleski, & Pearce, 2006; Pearce, 2004), points to the importance of leadership stemming from the team.

Although only little has been done so far towards understanding the concept of shared leadership (Yukl, 2010), early leadership scholars highlighted the importance of stemming the leadership from the team instead of it coming solely from the single vertical leader. Gibb (1954) was one of the earliest scholars who highlights the benefits of shared leadership, arguing that "Leadership is probably best conceived as a group quality, as a set of functions which must be carried out by the group." (Gibb, 1954: 884) In a similar vein, Katz and Kahn (1978) also suggest that the voluntary and spontaneous influence of team members on others in accordance with shared goals, benefits organizational competitive advantages when carrying out challenging tasks. In this understanding, "Those organizations in which influential acts are widely shared are most effective" (Katz & Kahn, 178: 332). Although these early leadership scholars highlighted the beneficial role of shared leadership for organizations many years ago, only little has been done on this topic until recently (Mathieu, Maynard, Rapp, & Gilson, 2008).

Shared leadership, or the often equally and interchangeably used term distributed leadership (Avolio, Walumbwa, & Weber, 2009), is understood as the distribution of leadership among members (Yukl, 2010). In order to delineate shared leadership from vertical leadership, some scholars have highlighted the number of team members involved in the leadership process (Mehra, Smith, Dixon, & Robertson, 2006). Others have focused on the reciprocal influence process among team members (Gronn, 2002a). Based on this idea, others have expanded the idea of shared leadership to a dynamic concept. As a team evolves over its life cycle (Ilgen et al., 2005) leadership and its distribution also change over time (Carson et al., 2007; Day et al., 2004). Building on this dynamic character of shared leadership, others have again suggested that shared leadership might consist of the parallel leadership influence of an officially designated team leader and the rest of the team members (Pearce, Yoo, & Alavi, 2004). In this understanding, and the one I follow in this PhD project, scholars have defined shared leadership as a "simultaneous, ongoing mutual leadership process within a team that is

characterized by the 'serial emergence' of official as well as unofficial leaders." (Pearce et al., 2004: 1219).

A shared leadership distribution is especially suitable for teams engaging in complex, creative, non-routine tasks where one single member does not have the knowledge at hand to decide and perform all leadership functions (Pearce, 2004; Pearce & Conger, 2003). Especially in the above mentioned tasks, teams characterized by shared leadership outperformed teams which relied on a single leader (Carson et al., 2007). As team learning is also an antecedent condition for innovativeness and effectiveness (Sarin & McDermott, 2004; Wong, 2004) and mostly important for teams that are involved in creative, non-routine tasks (Edmondson, 1999), it would be highly interesting to study **shared leadership and team learning**, rather than solely concentrating on the traditional perspective of vertical leadership when studying learning.

As mentioned in the previous discussion on the role of leadership behavior in team learning, the same arguments also apply to a team stemming its leadership throughout the team. Hence, I assume that leadership is a key condition that impacts team learning because team learning is predicated upon processes requiring intense personal interaction (through substance: relations), processes framing the team's project status (through substance: task), and processes enhancing the knowledge pool (through substance: change).

Moreover, I assume that team learning is rather enhanced through a distribution of shared leadership instead of focusing on the single leader. There are two main reasons for this: Firstly, when sharing leadership activities among team members, any kind of role conflict between opposing leadership activities is minimized. This is especially true for the leadership activities of the substance of change and of task (Yukl, 2010). Whereas task-oriented leadership activities are intended more to focus and align team members' activities, change-oriented leadership activities are focused more on opening team members' minds and exploring something new (Atuahene-Gima, 2003). Both of these activities focus in rather opposite directions and have been shown to lead to some difficulties for a single leader, namely leading simultaneously for alignment as well as

focusing on innovation (Shemeramta, 2000; Yukl, 2010). However, a mismatch of opposing leadership activities is minimized when more than one team member is engaged in leadership (Carson et al., 2007).

Secondly, a distributed leadership approach in a team presupposes autonomy of team members to a certain extent (Carson et al., 2007; Pearce & Conger, 2003). Empowerment has been shown to stimulate learning-related activities (Cohen & Ledford, 1994; Kirkman & Shapiro, 1997). "For teams to engage in learning behavior, it is important that they have the latitude and ability to experiment and implement potential improvements as they see fit. This requires external leaders to give up authority for the planning and organization of work." (Gibson & Vermeulen, 2003: 314) Hence, following this reasoning, I assume that a distribution of leadership enhances team's learning.

1.2   Problem Statement

Today's organizations are forced to establish sustainable competitive advantages in order to outpace the global market. Successful product or service innovations have been broadly considered a vital basis for the generation of competitive advantage (Dodgson, Gann, & Salter, 2005). Such innovations are typically generated by teams, with the members working collectively and highly interdependently on complex project tasks (Brown & Eisenhardt, 1995; Guzzo & Dickson, 1996). Leading such innovation projects has been identified as one of the key success factors for innovation projects (Amabile & Khaire, 2008). The bulk of research has focused on the hierarchical single leader and his or her impact on the team's project performance (Amabile et al., 2004; Zaccaro, Ritterman, & Marks).

However, recent scholars have highlighted the importance of stemming leadership from the team, instead of focusing solely on the single team leader (Day, Gronn, Salas, 2004; Carson et al., 2007; Pearce & Conger, 2004). This is especially true for teams engaged in complex, creative and interdependent tasks (Pearce, 2004). Due to the ambiguity and complexity of such innovation projects, a single team leader is less likely to engage in all necessary leadership functions (Carson et al., 2007). In such projects, a vertical

project leader is at a knowledge disadvantage, as other members are more likely to be experts in parts of the project led by the official project manager (Pearce & Conger, 2003). Thus, in comparison to vertical leadership, a shared leadership is composed of team members who distribute their leadership according to each individual's expertise and skills (Cox, Pearce, & Perry, 2003). Additionally, bottom-up pressure also points to the need for integrating team members into the team's leadership: team members seek for such an impact in the form of engaging in leadership by best applying their skills and knowledge (Carson et al., 2007; DeNisi, Hitt, & Jackson, 2003).

As leadership is directed at influencing team processes in terms of building up social conditions and maintaining the team's task, it is interesting to study team processes requiring the aspects generated by leadership. Team learning is such a team process which is predicated on processes requiring not only intense personal interaction but also a frame of the project tasks (Wong, 2004). My interest in studying leadership and team learning is enhanced by the fact that both leadership as an input factor and team learning as a team process are regarded as key success ingredients for a team's innovativeness (Sarin & McDermott, 2004; Wong, 2004). To sum up, in order to enhance organizational innovativeness, it is important to understand leadership and its impact on team learning.

1.3 Purpose of this Research

The first purpose of this research is to better understand the **nature of shared leadership**. As the bulk of research that has been done to date focuses on the vertical leader, only little has been done towards understanding leadership distributed among team members (Pearce & Conger, 2003; Carson et al., 2007). This fact leads scholars to argue that "given the infancy of the shared leadership theory, it is not surprising that this is an issue that requires attention – shared leadership is, after all, still a relatively 'primitive' term." (Pearce et al., 2008: 626).

In this doctoral project, I have focused on gaining a better understanding of the nature of shared leadership, suggested by Carson et al., (2007) as a rich future pathway. In doing so, I apply Yukl's understanding of leadership resulting from the behavioral school of

thought of leadership (cf. chapter 2.1.2). To sum up effective leadership regardless of whether it is shared or performed by an individual leader, Yukl (2010) differentiates three substances of leadership (task, relations, and change) which are again operationalized by specific leadership activities. For the <u>task</u> substance of leadership, Yukl (2010) suggests activities such as planning, clarifying roles and objectives and monitoring. The <u>relations</u> role is made up of the leadership activities of building and maintaining relations between the team members. The <u>change</u> substance of leadership is built upon the leadership activities of boundary spanning and intellectual stimulation. The following figure illustrates the theoretical approach to studying shared leadership, applying Yukl's (2010) leadership understanding.
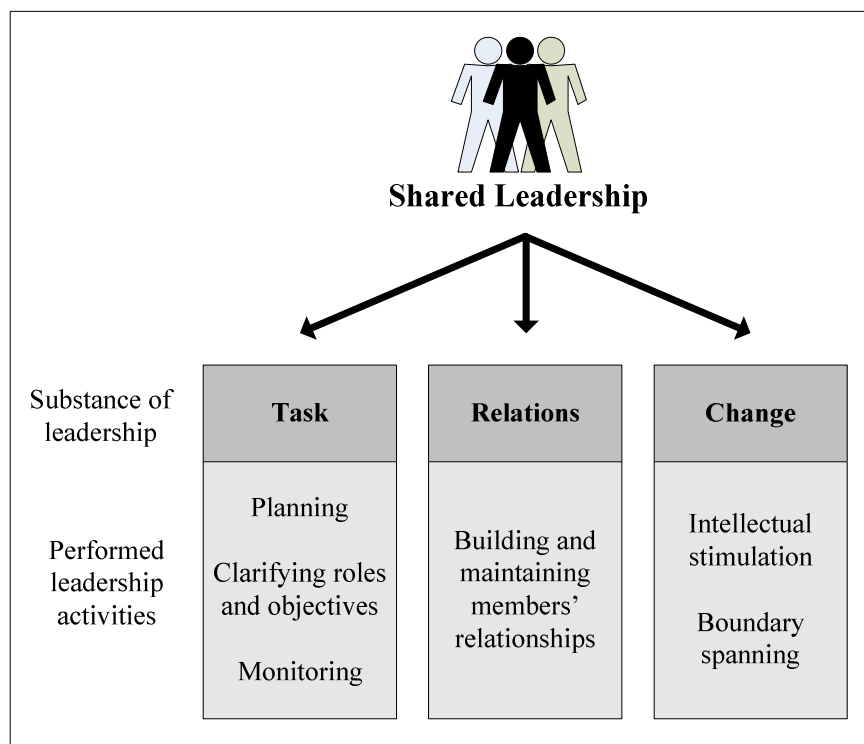
Figure 1: Nature of Shared Leadership

By applying Yukl's (2010) leadership understanding, the purpose of this exploratory project is to understand the nature of shared leadership by looking at how teams share these leadership activities belonging to the leadership substances of task, relations and change. In other words, the basic question I have in mind is how teams operationalize shared leadership distribution, focusing on performed leadership activities. Additionally, as teams are dynamic constructs which change their functioning over time (Day et al., 2004; Hackman & Wageman, 2005; Gersick, 1988), I also look for the

changes of shared leadership distribution over time. The first question concerning my research interest on the nature of shared leadership is the following:

Research question 1: How are leadership activities shared?

The second purpose of this PhD project concerns the following reasoning. As leadership is directed at influencing team processes in terms of building up social conditions and framing the team's tasks and opening team member's mind for something new (Yukl, 2010), it is interesting to study a team process which is based on the conditions created by leadership activities. Team learning is a process which requires interpersonal interactions as well as a frame of the team's task. Also team learning is rather enhanced when someone in the team is pushing the team to look outside team's boundaries or challenging the status quo (change substance). Not only the required conditions for learning generated through leadership highlight the reason for studying these two concepts, but also the fact that leadership as an input factor and team learning as a group process are both critical antecedent conditions for team innovativeness (Amabile et al., 2004; Wong, 2004).

However, only little research has been done on understanding the role of leadership and team learning (Burke et al., 2006; Berson et al., 2006; Edmondson, 1999; Sauquet, 2000). I contribute to this scarce literature by exploring how shared leadership activities relating to the task, relations, and change substance (Yukl, 2010) influence team learning. Consequently, the second research question that concerns my research interest is:

Research question 2: How do shared leadership activities influence team learning?

1.4   Methodological Approach

1.4.1 The Study

Due to the lack of existing research focusing on my area of interest, an exploratory case study research design is well suited for gaining a better understanding of the here studied phenomena, namely to understand the nature of shared leadership and its role in team learning (Eisenhardt, 1995; Eisenhardt & Graebner, 2007; Yin, 2003).

Additionally, case study research would seem an appropriate research approach when empirically investigating, "a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." (Yin, 2003: 13). Indeed, this argument also applies to this research as said research took place in real teams while working in their projects.

Support for choosing case study as the research strategy for this PhD project is also given by scholars in my field of study: recent studies on shared leadership (Day et al., 2004; Mathieu et al., 2008; Conger, & Pearce, 2003; Yukl, 2010) have highlighted the future need to explore this new leadership form by means of a longitudinal in-depth case study design. Yukl (2010), for example, stated, "More intensive, descriptive and longitudinal research is needed to understand the complex process involved in shared and distributed leadership." (Yukl, 2010: 504) Team learning scholars have also called for more attention to detailed, real-time observations, as learning is not necessarily consciously accessible in interviews and questionnaires by asking team members what they have learnt (Wilson et al., 2007).

1.4.2 The Site

As shared leadership is most appropriate for tasks that involve creativity, complexity and interdependence (Carson et al., 2007; Pearce, 2004), I chose to explore this phenomenon in three creative project teams. A similar argument applies to team learning: The outcome of team learning can reasonably be expected in teams whose task is characterized by solving a specific non-routine problem or where the team is expected to create something new (Edmondson, 1999, 2002; Sauquet, 2000).

Taking these selection criteria into consideration as regards being involved in creative non-routine tasks, I chose to study three teams: Two of the studied teams were made up of graduate students from a leading international business school who were involved in a real business project. I gained contact to the responsible manager of a student business consulting project involving a medium-sized company which had asked the manager and the students, respectively, for consulting services as this organization felt the need to increase their sales abroad. The consultancy task therefore included the analysis and definition of clear approaches for increasing international sales. These two observed teams, each with five international members, worked on an ongoing business problem over a three-month period. Each consulting team belonged to a different student organization that represented a consultancy with different expertise fields. The student teams selected from each consultancy belonged to the field of 1) business policy / information systems and 2) marketing / operations, respectively. For this reason, I named the first case the BPIS student team, and the second team the MarkOP student team.

The third team was from a research center in Germany. I established contact to this team via a manager of said research center who helped me gain access to the teams there. In this context, most teams were engaged as research teams in non-routine, creative tasks which conformed to the selection criteria for this research project. Another factor was important to me when selecting a team: It was helpful not to select a very science-oriented research team, but rather a team which was involved in social science research. This was due to the fact of being better able to follow project discussions as a trained business social research fellow. I contacted the institute leader of a social science oriented institute who asked some of his teams for their collaboration. I was given the opportunity to observe a team which was responsible for doing consulting work concerning the identification of innovative future projects for the ministry which I named the Radar research team.

In accordance with Edmondson's (2002) qualitative study on team learning, this selection of teams constituted a convenience sample which satisfied my request to accompany and observe the teams during their project life with subsequent individual interviews following project finalization.

These three studied cases were embedded in two main kinds of organizational context: The two student consulting teams belonged to a temporary student consulting organization that was in charge of advising a medium-sized company on their international expansion strategy and product portfolio. The consulting team from the research center was responsible for advising the ministry on innovative topics which might be interesting for future in-depth studies. Although the teams were working in different contexts, they had in common that they were in charge of complex, non-routine and interdependent project tasks.

Other scholars at the group level of analysis have also studied teams from very different types of organizations (Gersick, 1988; Harris & Sutton, 1986; Sauquet, 2000) which gave me the theoretical support to do so as well. Gersick (1988) even argues in favor of observing teams with different project contents and in different organizational settings to enhance the generalizability of her model.

1.4.3 Data Collection

Data was gathered from multiple sources. During the project period, I observed and tape-recorded 42 project meetings ranging from one hour to half a day long and received team members' project e-mail communication, comprising in sum around 330 e-mails. After the observational phase, each member of the three teams was interviewed for around 90 minutes. In sum, 18 individual interviews were conducted and transcribed. In these interviews, I asked the members of each team to describe their team's development from the beginning to the end phase / current phase of the project, including the team's task, the members' role allocation, and problems that arose in the team. I encouraged team members to relate incidents from their daily project life rather than asking them to assess learning and leadership constructs. Additionally, I asked externals - the faculty advisors and the institute leader - to give me an assessment of the teams' performance. For the student teams, I also received a peer evaluation of both teams from all the members of each consultancy. As a result, due to these different data collection sources in the three cases, data triangulation was assured (Yin, 2003; Eisenhardt, 1995).

1.5   Structure of this PhD Research Project

The structure of this PhD research project is as follows: Subsequent to this **introductory part** outlining the background and context as well as the research purpose and methodology in brief, a detailed **review of the literature** is to be presented in the second part. This review starts with the research literature on leadership and then focuses on teams. After having presented the literature on team leadership, I will focus on research on team learning. After this theoretical foundation, in the third part, the **methodology** followed is presented. This serves as the basis for the subsequent three **single case analyses** in the fourth part in which I analyze the individual team's leadership as well as its occurrence in team learning for each of the three project teams. In the final part of each case report, I explore the role of the teams' engaged leadership activities on team learning. In a subsequent step, the findings of the three cases are then compared across the three teams in the fifth part, the **cross-case report**. In the sixth, the **discussion** part, the empirical findings from the analyses of the three teams are juxtaposed with current findings from the literature. The discussion is structured in accordance with the research questions and presents the theoretical contributions. This is followed by a discussion on the practical recommendations to managers. Additionally, future research options are presented that result either from the limits of this research project or from new interesting research ideas which emerged during this PhD project. The PhD thesis ends with concluding remarks.

Discussion
& Conclusion
- Theoretical contribution
- Practical recommendation
- Conclusion & future research

Cross Case Analysis

Case Study 1

Case Study 2

Case Study 3

Methodology: Research Design – Case Selection – Data Collection
– Analysis – Limitations

Literature Review: Leadership – Teams – Learning – Resulting
research interest on the role of shared leadership in team learning

Introduction: Background and Context – Research Purpose

Figure 2: Structure of this PhD Project

2   Literature Review

After having briefly presented the relevant literature in the introductory part, a more detailed analysis of the relevant literature is given here in order to lay the foundations for the research question, the corresponding research design of the methodology, data analysis and discussion.

In doing so, I first of all review the literature on **leadership** and highlight three schools of thought, including the trait, behavioral and contingency theories of leadership (Bowditch et al., 2008; Yukl, 2010). These leadership theories have been applied to different kinds of levels, including the strategic, dyadic, and team levels. As my research interest concerns leadership at the team level of analysis, I focus in the next step on the literature on **teams**. In doing so, I review various kinds of team definitions, a historical review including the foundations of teamwork and group dynamics, and finally on the team effectiveness model, the so-called input process output (IPO) team effectiveness model. After having focused on the construct of teams per se, I will shed light on the literature of leadership at the team level of analysis as one of the input factors of team effectiveness.

After having focused on **team leadership** as an input factor of a team's effectiveness, I will review the literature on team learning. The reason for this is that I presume that a team leader might well be in a position to influence team learning. By reviewing the literature on learning in teams, I identify two team learning traditions, namely team learning as an outcome of communication and coordination, and **team learning** as a group process (Edmondson et al., 2008). As my research interest lies in understanding the role of leadership in team learning, I review research which provides some aspects of the relations between leadership and team learning.

As team learning is especially important to teams engaged in complex, creative, non-routine tasks (Bunderson & Sctcliffe, 2003; Edmondson, 1999), I identified a team leadership approach which is particularly suitable for such a kind of team. **Shared leadership** is particularly applicable to teams engaged in tasks characterized by high creativity, complexity and interdependence (Pearce, 2004). For this reason I chose to

study both concepts of shared leadership and team learning and will shed light on literature of shared leadership in the final part of this literature review. In particular, I will focus in the review on shared leadership benefits, indicators for the appropriateness of shared leadership, and finally on shared leadership definitions, by highlighting five identified groups of concepts defining shared leadership.

2.1   Leadership

Since the 1930s, leadership has been identified as a critical ingredient for organizations and it still continues to be a prominent research field (Bowditch et al., 2008; Avolio et al., 2007). Since that date, many attempts have been made to highlight the influence of leadership on performance at different levels of the organization. It has been shown that leadership enhances performance and the attainment of set goals (Bass, 1985). In particular, effective leadership has been shown to increase sales, profit margins, productivity, innovation, etc. (Yukl, 2010; Vera & Crossan, 2004). Followers' attitudes and beliefs constitute another kind of indicator for effective leadership. The subsequent improvement of the followers' quality of work life, building of self-confidence, increase of skills and contribution to their psychological growth are indicators for effective leadership (Bowditch et al, 2008; Levi, 2007; Yukl, 2010). The absence of effective leadership has also been shown not only to arise from a lack of such indicators, but rather to bring about negative indicators which in turn reflect dissatisfaction and hostility toward the leader (Gordon & Yukl, 2004; Yukl, 2010). Work slowdowns, voluntary vacancies, absenteeism, requests for transfer are such indicators of the followers which reflect ineffective leadership.

Since leadership has been identified as a crucial ingredient for organizational performance and followers' attitudes, scholars have attempted to understand why some leaders are more effective than others (Gordon & Yukl, 2002; Avolio et al., 2007). Diverse attempts to identify effective leadership have been made since the 1930s. In the following, three historical approaches will be presented (Levi, 2007; Yukl, 2010): 1) The trait / personality approach which is founded on the assumption that good leaders are marked by certain characteristics; 2) The behavioral tradition - the school of thought of leadership which I apply to this PhD research - focuses on the ways leaders act and determines what effective leaders actually do. 3) The contingency approach links

personality and behavioral characteristics of leaders to the situation. In the following, these three schools of thought are to be explained in more detail.

2.1.1 Trait Theory of Leadership

The trait theory of leadership is one of the earliest leadership approaches with the bulk of research having been conducted in the 1930s and 1940s (Levi, 2007; Yukl, 2010). This theory implies that good leaders are characterized by certain traits, defined as "a variety of individual attributes, including aspects of personality, temperament, needs, motives, and values" (Yukl, 2010: 43). In this understanding, a set of certain characteristics differentiates the leader from the followers. This understanding of leadership is often described as the "Great Person" theory (Bowditch et al., 2008: 212), because the leaders ascertain a number of personality and psychical characteristics which make them different from regular people.

In this tradition, five personal characteristics sum up effective leaders, including "intelligence, dominance, self-confidence, a high level of energy and activity, and task knowledge." (Bowditch et al., 2008: 212) It is not a single characteristic that forms an effective leader in this tradition, but rather that an effective leader needs to be marked by an overall high presence of these characteristics in order to differ from his/her followers (Levi, 2007). The implication of this way of thinking is that team leaders can be identified and selected by an organization by applying psychological tests, including measures of these above mentioned characteristics of effective leaders (Yukl, 2010; Levi, 2007).

However, the relationship between a proposed leader's traits and effective leadership is not very distinct. In other words, a confirmation of a relationship between traits and leaderships has not been completely successful (Kirkpatrick & Locke, 1991). In Bowditch et al.'s (2008) own words: "Thus, while some common attributes have been suggested, much of the research in this area is contradictory and it provides an incomplete picture of leadership." (Bowditch et al., 2008: 212) Similarly, Levi (2007) also questions this approach to leadership by pointing out the importance of taking the leader context into consideration when studying effective leadership. He notes: "The

basic problem is that people who are successful leaders in one situation (e.g., business) are not necessarily successful in others (e.g., politics, religion)." (Levi, 2007: 170)

2.1.2 Behavioral Theory of Leadership

This stream of research, which is also the one I follow in this PhD project, proposes that specific behaviors fulfilling specific functions differentiate the leader from the followers (Bowditch et al., 2008). Contrary to the trait model which uses psychological tests to identify effective leaders, in this understanding, people can be trained to be effective leaders because of specific leadership behaviors that make up good leaders (Levi, 2007).

Early studies on the behavioral tradition of leadership looked at the impact of differences in the decision-making style on members' satisfaction and performance. Lippitt and White (1947) distinguished between the *autocratic*, the *democratic* and the *laissez-faire styles* and examined the quantity, quality and member satisfaction when doing a set of tasks. While the autocratically managed group produced the most by a small amount, the democratically managed team performed better in terms of quality and members' satisfaction. The group characterized by a laissez-faire style performed the worst in all three respects.

The Ohio State University and University of Michigan followed this line of thinking and came up with two main groups of leadership behavior. The Michigan studies differentiated between two distinct leader orientations, proposing that a leader is either *employee-oriented,* which goes in the direction of the democratic leadership style, or a leader is *production-oriented,* indicative of an autocratic leadership style (Kahn & Katz, 1960).

In a similar vein, in the Ohio studies, Fleischman, Harris, and Brutt (1955) came up with two behavioral categories, namely *initiating structure* and *consideration*. Leaders who engaged more in initiating structure tended to define and structure the task - what to do and how to do it. Leaders with a high level of consideration took care of interpersonal relations and focused on members' satisfaction and their needs. Team leaders who performed high in initiating structure and low in consideration went in a

similar direction to leaders regarded as authoritarian. In contrast, leaders who engaged high in consideration and low in initiation structure went in similar directions to the democratic leadership style, although these relationships were not totally congruent with each other (Levi, 2007). Additionally, according to the results of the Ohio studies, it was also possible for leaders to be high in both behavior categories, thus simultaneously oriented towards consideration and initiation structure, which was contrary to the previous research attempts by the Michigan University where an either/or behavioral category in a team leader was more pronounced.

These studies laid the foundations for many subsequent research attempts to come up with diverse taxonomies in order to best describe leadership behaviors. These taxonomies often differ in their kind of abstraction in defining leadership behaviors; some are more abstract with only a few categories (Fleischman et al., 1955), whereas other scholars went into more detail, referring to a number of different behaviors, such as Wilson et al. (1990) with 15 leader behavior categories (Yukl, 2010).

For Yukl (2010), however, the twofold classification of behaviors into task-oriented and people-oriented established during the 1950s can still be usefully applied: In his own words: "The distinction made between task-oriented and people-oriented behaviors…has been helpful for organizing specific types of leadership behavior into broader categories. The two-factor dichotomy includes many of the leader behaviors that are relevant to influencing individuals or a team." (Yukl, 2010: 117)

According to Yukl (2010), however, this twofold classification of leader behaviors into task-oriented and people-oriented lacks the leadership behaviors "stimulating" and "facilitating change". The idea of leadership behaviors stimulating and facilitating change is rooted in the emerging leadership research stream often under discussion today, namely of charismatic and transformational leadership (Bass, 1985). In contrast, however, meta-categories of leadership have not taken this dimension of change into consideration (Yukl, 2010).

Because of the absence of the change dimension of leadership in today's leadership behavior taxonomies, Yukl (2010) proposes an alternative conception of leadership,

highlighting three meta-categories[3] of leadership which make up effective leadership, namely task-oriented, relations-oriented and change-oriented leadership behaviors. Yukl (2010) explains his concept of this three-dimensional model as follows: "Each of the three meta-categories has a different primary purpose, and they are all relevant to effective leadership. *Task-oriented behavior* is primarily concerned with accomplishing the task in an efficient and reliable way. *Relation-oriented behavior* is primarily concerned with increasing mutual trust, cooperation, job satisfaction, and identification with the organization. *Change-oriented behavior* is primarily concerned with understanding the environment, finding innovative ways to adapt to it, and implementing major changes in strategies, products, or processes." (Yukl, 2010: 118) The following figure depicts Yukl's (2010) new understanding of effective leadership (the figure below is adapted from Yukl (2010: 118)).
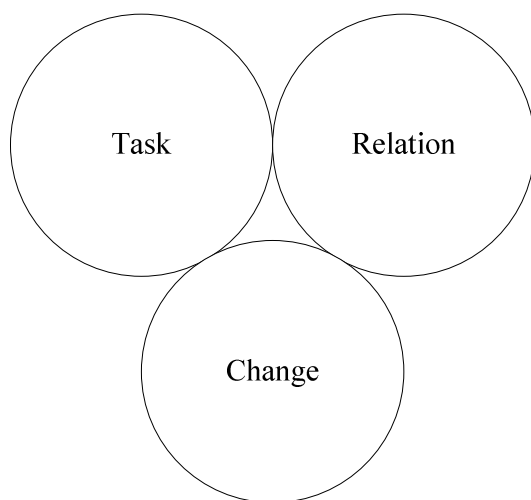
Figure 3: Task-, Relations- and Change-Oriented Behavior for Effective Leadership

Yukl (2010) takes his new leadership with this triple behavioral perspective into consideration when defining his leadership understanding. Yukl (2010) defines leadership as follows:

"Leadership is the 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, 2010: 26)

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[3] In accordance with Yukl (2010), the words meta-categories, roles, and substance of leadership are used interchangeably to depict a set of leadership activities directed at task, relations and/ or change.

Yukl's (2010) way of considering this threefold classification of leadership behaviors is reflected in his recent definition of leadership. This definition includes efforts to facilitate the ongoing work of the team or the organization - the task dimension, as well as preparing the team or organization to meet future challenges - the change dimension of leadership. The relation dimension is also touched on in his definition, as leadership includes the process of facilitating collective efforts.

Yukl's (2010) above mentioned definition of leadership also takes into consideration the possibility of leadership stemming from the team besides stemming from a single leader, the traditional form of leadership. In his own words: "The influence processes may involve only a single leader, or they may involve many leaders". He goes on to point out the possibility of distributing leadership roles among members as he states: "Leadership is treated both as a specialized role and as a social influence process. More than one can perform the role (i.e. leadership can be shared or distributed), but some role differentiation is assumed to occur in any group…" (Yukl, 2010:27). To better understand the meaning of role distribution, scholars in the group dynamics stream of research regard a role as a number of typical behaviors of a certain individual in a specific social context (Bowditch, 2008; Levi, 2007). Hence, a leadership role sums up specific behaviors or activities that fulfill specific functions in a group (Hiller, Day, & Vance, 2006).

2.1.3 Contingency Theory of Leadership

The contingency theory combines the idea of the trait leadership approach and behavioral theory of leadership. The underlying assumption is that the most effective leaders are those who can adjust their style to the needs of the situation, the group or their own values (Bowditch et al., 2008). In other words, there is no best practice leadership solution for all situations. On the contrary, the most effective style depends on, or *is contingent on* the actual situation.

Usually, contingency theories point first of all to some determinants that characterize the situation such as the type of task or the level of structure. The second kind of determinant defines aspects of a leader's personality or behavior including, for instance,

the leader's interpersonal skills. Based on these two kinds of determinant, the theory proposes either how a leader should behave, taking the actual situation into consideration, or what kind of leader is best suited to the actual situation (Levi, 2007). This stream of leadership theory has often been criticized due to its lack of practicability. Levi (2007) evaluated this school of thought as follows: "Contingency theories are complex and more difficult to understand and apply than others." (Levi, 2007: 173)

2.2   Level of Conceptualization for Leadership Theories

2.2.1 Dyadic and Strategic Leadership

These leadership theories have been applied at different levels, at the 1) dyadic, 2) strategic and at the 3) team level of leadership conceptualization (Levi, 2007; Yukl, 2010).

Most of the research to date has been done at the 1) dyadic level which focuses on the relationship between the leader and another individual who is typically a subordinate or another follower (Yukl, 2010). Such a relationship between the leader and the individual follower can be found at any authority level, ranging from chief executive to department leader, to production crew managers (Bowditch et al., 2008). The underlying reasoning here is how a leader influences the follower to be more capable of carrying out the assigned task and being motivated. "These theories usually focus on leadership behavior as the source of influence, and on changes in the attitudes, motivation, and behavior of an individual subordinate as the influence process." (Yukl, 2010: 35) The leader-member exchange theory (LMX) is based on the dyadic level of conceptualization (Avolio et al., 2009). The basic idea of the LMX theory is that leaders develop different exchange relationships with the follower (subordinate) whereupon the quality of such a dyadic relationship modifies leader and member outcomes (Cogliser & Schriesheim, 2000).

In contrast to the micro focus in the dyadic leadership understanding, strategic leadership focuses on executive work at the top of an organization (Gordon & Yukl, 2004; Vera & Crossan, 2004). Strategic leadership is characterized by a broader

perspective, involving internal and external processes. Strategic leadership, also called executive leadership, takes charge of the survival and prosperity of the organization (Yukl, 2010). This depends on the organization's adaptability to the environment and acquisition of necessary resources (Hunt, 1991). Activities such as gathering and interpreting information about the environment, identifying threats and opportunities, defining an effective strategy for adapting to the environment are, for instance, activities of the strategic leader in order to ensure organizational ability to adapt to the environment (Gordon & Yukl, 2004). Survival and prosperity also depend on an organization's efficiency to produce its product or services. This also lies in the responsibility of the strategic leader, for instance by designing an appropriate organization structure (Hunt, 1991; Yukl, 2010).

2.2.2 Team Leadership

In contrast to leadership at the dyadic and strategic level, leadership at the team level of analysis is a more recently emerged field of study (Mathieu et al., 2008). Only a decade ago, scholars still argued, "we know surprisingly little about how leaders create and manage effective teams." (Zaccaro, Rittman, & Marks, 2001: 452) However, before going into the literature on team leadership in more detail, I will first of all review the literature on teams.

2.2.2.1   Team Defined

Teams are more than solely a collection of individuals (Levi, 2007). Numerous different kinds of definitions on teams and groups have been given over the last years (Cohen & Bailey, 1997). Notably, these definitions often resemble similar characteristics such as interdependence or common objectives of team members (Mathieu, Maynard, Rapp, & Gilson, 2008). Authors such as Hackman (1987), or Kozlowki and Bell (2003), highlight the organizational context in which the team is embedded that, in turn, influences the team's functioning. Cohen and Bailey (1997) built on Hackman's definition, although they highlight the importance of the boundary spanning character of teams. McGrath (1984) and Fiore et al. (2001) additionally point to the number of people involved. Where Fiore et al. (2001) claim that two or more individuals make up a team, McGrath (1984) also indicates a kind of upper limit as regards the size of the

groups. In his own words: "For an aggregation to be a group, it must include two or more people, but it must remain relatively small so that all members can be mutually aware of and potentially in interaction with one another." (McGrath, 1984: 8) A selection of definitions on teams and groups is given in the following table.

Author(s)	Definition
Cohen & Bailey (1997: 241)	"A team is a collection of individuals who are interdependent in their task, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems (for example, business unit or corporation), and who manage their relationships across organizational boundaries."
Fiore, Salas, Cannon-Bowers (2001: 310)	"Two or more individuals who must interact and adapt to achieve specified, shared, and valued objectives."
Hackmann (1987: 322)	**"Work groups in organizations: this means…(1) real groups (that is, interactive social systems complete with boundaries and differentiated roles among members); (2) groups that have one or more tasks to perform resulting in discernible and potentially measurable group products; and (3) groups that operate within an organizational context."**
Kozlowski & Bell (2003: 334)	"…collectives who exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity."
McGrath (1984:8)	"...a group is an aggregation of two or more people who are to some degree in dynamic interrelation with one another." (1984: 8) "..size, interdependence, temporal pattern - really reflect degrees of 'groupness'. " (1984: 9)

Table 1: Team Definitions

In my thesis, **I adopt the team definition provided by Hackman (1987, 1990) who defines it as a work group that operates within a larger organizational context and shares the responsibility for a common product or service.** This adoption of Hackman' definition of work groups (1987) conform to recent scholars in my field of research, both in literature on team learning (Edmondson, 1999, Edmondson, et al., 2008) and on team leadership (Carson et al., 2007).

As seen above, some of the authors refer to groups and others to teams. But what is the difference between both concepts? For most scholars, these two terms are used interchangeably (Cohen & Bailey, 1997; Edmondson, 1999, Guzzo & Dickson, 1996). However, other scholars clearly differentiate between the two, namely between groups and teams (e.g. Katzenbach & Smith, 1993). For Katzenbach and Smith (1993), teams are more than groups. In particular, a group becomes a team when it establishes a shared purpose, for which every member is mutually accountable, and when it aspires towards synergy (Katzenbach & Smith, 1993). Additionally, similar to McGrath's (1984) concept, the size is also important in this aspect. For Katzenbach and Smith (1993), the concept of a team is said to apply to a limited number of people that interact directly with each other. In accordance with recent scholars in my field of research (Cohen & Bailey, 1997; Guzzo & Dickson, 1996; Edmondson, 1999), I will use these two terms - 'group' and 'team' - interchangeably.

Additionally, scholars define different kinds of teams depending on the team's task and its embedded organizational setting (Cohen & Bailey, 1997; Hackman, 1990; Sundstrom, 1999). For instance, Sundstrom (1999) differentiates between six kinds of teams with each one exhibiting a different function, including a 1) production team (e.g. factory team), 2) service team (maintenance crews), 3) management team, 4) project teams (e.g. R&D team), 5) action or performing team (e.g. sports team, surgery team), and a 6) parallel team of a temporary basis which acts outside normal work. Accordingly, I will focus in my thesis on project teams, bringing experts together to accomplish a specific project task within a defined period (Cohen & Bailey, 1997; Levi, 2007; Sundstrom, 1999).

2.2.2.2 Teams in Organizations: Historical Review

2.2.2.2.1 Foundations of Teamwork

Before the Industrial Revolution, working in small groups was rather conventional. This small group or family approach was the model for traditional farming and for the manufacturing guild system (Levi, 2007). In the early 1900s, however, the industrial revolution changed many organizational approaches. Organizations shifted to the hierarchical approach and applied *scientific management* to redesign the organization

and its jobs (Taylor, 1923). This resulted in simplified jobs in a highly hierarchical system in which efficiency was one of the main goals.

In the 1920s and 1930s, however, the scientific management model started being challenged. Although the production system operated efficiently, other problems began to emerge. People became increasingly de-motivated, and difficulties developed when trying to set up a new technical system involving higher complexity. The organization tended to be inflexible and new organizational goals differently from efficiency were difficult to achieve. Parallel to these weaknesses resulting from the scientific management model in organizations, the rise of unions and other worker organizations evolved which pointed out the problems people had in relation to their jobs (Bowditch, Buono, & Stewart, 2008; Levi, 2007).

This rethinking of the scientific management model was highly regarded by the *Hawthorne Experiments,* resulting in the *Human Relations School* (approximately 1930 - 50) (Bowditch et al., 2008). In Western Electric's Hawthorne plant, experiments were conducted to assess the impact of working conditions (e.g. lighting, rest periods) on productivity (Roethlingsberger & Dickson, 1950). The results of the Hawthorne experiments showed the importance of better understanding aspects of work involving social relations (Bowditch et al., 2008). One of the findings of these experiments, which pointed to the interdependencies of individual behavior at work and group norms, inherently started interest in better understanding group functioning. In the following years, scholars continued with their experiments, often carried out in laboratories. Yet these scholars neglected to take real work problems into consideration and often without building on previous theory, which resulted in little theoretical development (McGrath, 1984).

Following the Second World War, researchers such as organizational psychologists and engineers started to rethink the standard way of working in organizations, this time by looking at the military: Although the military was characterized by a hierarchical system, troops were built on a team structure. Based on this idea, these scholars started to experiment with this approach to organizing people and found out that the team

approach was one way of enhancing operations and productivity in organizations (Levi, 2007).

During the 1970s, teams returned extensively to academic and practitioner discussions due to the increase in importance of the Japanese management approach in which teamwork is one of the fundamental building blocks. As this Japanese model was characterized by the production of high-quality, inexpensive products, many western business experts visited these companies and highlighted the importance of teamwork in the form of quality circles as the key determinant for manufacturers' success (Levi, 2007).

During the 1980s, many European and North American companies experimented with this Japanese management model, introducing quality circle teamwork which later developed into total quality management. Although the work of the team mates was still quite individually oriented, the workers were organized in team structures in order to enhance the quality and other determinants of production. At the beginning, these efforts could be revaluated as mere copies of the Japanese management model, turning out with mixed success, partially due to the cultural differences (Levi, 2007). Efforts at further developing this management model were made until the late 1980s which inherently led to a wide spread of the concept of teamwork in organizations.

This quality movement established the foundations for teamwork; however, other factors also maintained and rather supported the use of teams in organization: The need to be innovative and adaptable, the increasing use of information technology, downsizing efforts and business process re-engineering attempts, among others, have all added to the usage of teams in today's organization (Edmondson, 1999; Levi, 2007; London & Sessa, 2007). "Teams are important when the goal is to improve the way a product is made or a service is provided, when the job is complex, when customer service and quality are important, or when rapid change is necessary." (Levi, 2007:9) At the beginning of the 1990s, more than 80% of medium-size to large companies used some kind of teams in their organization (Gordon, 1992). Even Cohen and Bailey (1997) claimed that 85% of enterprises with 100 people use teams in one way or another.

2.2.2.2.2 Foundations of Group Dynamics

Although the focus of this review lies on teams embedded in an organizational context usually published in management oriented journals and books, literature on groups rooted in the psychology literature, namely the 'group dynamics' school of thought should also be touched, as some of the management scholars refer to this particular field.

Parallel to the increasing usage of team structures in organizations, social scientists and psychologists have also started to concentrate on understanding how groups operate and the way members' relationships affect it (Gilette, 1990). However, the roots of the group dynamic stream lay some time before, namely at the beginning of the 20th century, with the studies of Norman Triplett (Triplett, 1898). Triplett compared the performance of individuals working alone with people working in a group by studying bicycle racers and found out that those who raced in a group outperformed those who raced the track alone. The studied phenomenon that the presence of others increased performance was labeled "social facilitation" (Levi, 2007).

Early studies by psychologists followed this line of research which focused on how groups impact individual performance and attitudes. Although these studies took the group into consideration, the centre of attention was still on the individual. This main focus on the individual rather than on the group changed with the research by Kurt Lewin at the Massachusetts Institute of Technology during the 1940s. He was the person who established the term "group dynamics" and laid the foundation for regarding the team as the unit of analysis and to study it scientifically. In his own words: "There is no more magic behind the fact that groups have properties of their own which are different from the properties of their subgroups or their individual members, than behind the fact that molecules have properties which are different from properties of the atoms or ions of which they are composed." (Lewin, 1947)

Lewin's work laid the foundation for group dynamics and established a new field in psychology and social science. Between the 1950s and 1960s, the interest in understanding groups was more related to psychology. Today, diverse scholars from disciplines such as sociology, political science, communication, education and, as

mentioned above, from organization studies are enhancing the understanding of how groups operate (McGrath, Arrow, & Berdahl, 2000; Levi, 2007).

But, what are scholars of group dynamics investigating in particular? As members of a group act on and influence each other, groups develop processes which distinguish them from a randomly selected collection of people. The interest of group dynamic scholars concerns the understanding of group processes emerging as a result of members' interaction while performing a task. Norms, roles, relations, the need to belong, effects on behavior are those group processes which lie in group dynamics scholars' research interests (Bowditch et al., 2008).

In the group dynamics tradition, a group is not approached as a static entity, but rather as an evolving system (Bowditch et al., 2008). This development character over a team's life span is reflected in diverse group process and development models in which groups pass through different patterns of development phases during the team's life span (Tuckman, 1965; Gersick, 1988). These models explain why teams need some time before becoming productive and doing their "assigned" task, and why a group engaged in periods of conflicts during its development (Levi, 2007). For instance, Tuckman (1965) distinguishes between four group development stages, namely forming, storming, norming, and performing. In a revised version of this stage model, Tuckman and Jensen (1977) supplement a fifth stage to this model, namely that of adjourning in order to highlight the finalization of the group's task and inherently the end of the group. In recent decades, scholars have often empirically investigated these patterns of group development and recommended practical advice in order to support teams in successfully performing these patterns of group development (e.g. Hackman & Wageman, 2005; Okhuysen & Waller, 2002).

2.2.2.3   Team Effectiveness Frameworks

In contrast to the group dynamics scholars who tend to regard groups as an evolving system that changes over time, traditional team effectiveness frameworks are rather of a static character (Goodman, Ravlin, & Argote, 1986) and often applied to teams in an organizational context (e.g. Carson et al., 2007; Edmondson, 1999). Classic works by

Steiner (1972), McGrath (1984) and Hackman (1987) explain team effectiveness by applying an input-process-output (IPO) system model. In Hackman's (1987) own words: "This framework posits that various input factors (such as features of the group, its task and its work context) affect group-interaction processes (i.e. the interpersonal transactions that take place among members), which in turn affect the output of the group." (Hackman, 1987:316)

In Hackman's framework (1987), he distinguishes between three different kinds of input, namely 1) individual team member skills such as competencies or personalities, 2) team-level factors like structure or size, and 3) organizational and contextual characteristics, such as organizational design characteristics. These three distinct inputs are regarded as antecedent conditions which drive the team's processes, namely the interaction of the team in order to accomplish its task. The outcome is often regarded as task performance or other affective outcomes such as members' satisfaction, or changes in attitude (Hackman, 1987; Mathieu et al., 2008). The following figure illustrates the input-process-outcome model (IPO) for investigating team effectiveness (the following figure is adapted from Hackman (1987) and Mathieu et al., (2008)).
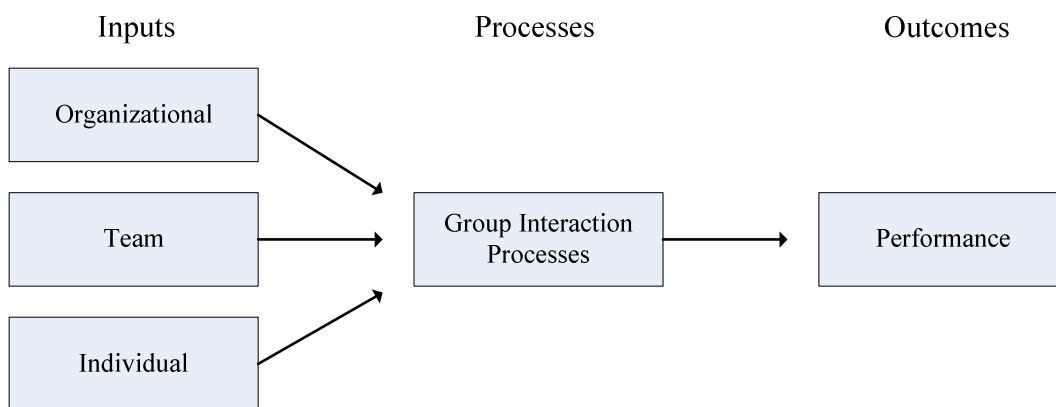
Figure 4: Input Process Output Framework

In the recent past, this classic input-process-output framework has often been criticized by team scholars for three main reasons (Goodman, Ravlin, & Argote, 1986; Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Mathieu et al., 2008): First, the input factors at the organizational, team and individual level have been studied separately when looking for their effects on team processes and outputs. However, recent literature points to the importance of approaching teams from a multilevel nature (Cohen & Bailey, 1997),

meaning that a team consists of individuals who are embedded in an organization which, in turn, is nested in an environment. The fact that these input factors shape each other to a greater or lesser extent has been overlooked in the traditional team effectiveness framework (Mathieu et al., 2008).

Second, the 'process' part of the IPO model has also been criticized as studies often intermingle processes with outcomes when applying the IPO model approach. Ilgen et al., (2005) noted that "many of the meditational factors that intervene and transmit the influence of inputs to outcomes are not processes." (Ilgen et al., 2005: 520) In order to obviate this mixing of diverse processes, Ilgen et al., (2005) differentiate between 1) real team processes and 2) emerging states, including cognitive motivational or affective states such as psychological safety or potency (Mathieu et al., 2008). Ilgen et al., (2005) reframed this traditional model of IPO to input-mediator-outcome in order to work against this confusing character of the concept team processes.

Third, although scholars have already criticized the static non-dynamic character of the IPO model, most scholars neglect to understand feedback loops in the IPO sequence. More than two decades ago, Goodman et al. (1986) already called for a more development character when studying teams, as these authors noted: "Basically, we need to learn more about dynamic processes in groups in organizations. We need to do more than indicate that there may be feedback loops." (Goodman et al., 1986: 13) In Ilgen et al.'s (2005) revised model of team effectiveness, these authors add an 'I', standing for input, at the end of this model to highlight the more cyclical and episodic process character of the team effectiveness model. Feedback gained from one team episode serves as an input for the next one (Ilgen et al., 2005; Mathieu et al., 2008). In Ilgen et al.'s (2005) revised approach, team effectiveness can better be understood as an Input-Mediator-Output-Input (IMOI) model (Ilgen et al., 2005). In this thesis, I take this dynamic perspective on teams into consideration and view how gained feedback from teams undertaken from time 1 influences a team's further life development.

2.2.2.4   Research Lines in Team Leadership

After having obtained knowledge on the teams, in the following, I will shed light on leadership at the team level of analysis. In comparison to leadership at the dyadic and strategic level of conceptualization, leadership at the team level is quite a recently emerged concept that has been highly discussed from the beginning of 2000s to now (Mathieu et al., 2008; Zaccaro et al., 2001). The following review highlights three kinds of leadership streams identified in the team leadership literature (Mathieu et al., 2008). In the following, external leadership, team coaching and shared leadership will be briefly reviewed, whereby the latter will be discussed in more detail at the end of this literature review (cf. chapter 2.5), as this involves the team leadership approach which I am applying to my research project.

Leadership at the team level of analysis traditionally focuses on the influence of the individual **external leader** who is responsible for, and has authority for the team's output (Mathieu et al., 2008). In this understanding, the actions of the external leader make or break team's success (Burke et al., 2006; Druskat & Kayes, 2000). Here, leadership is regarded as a crucial ingredient in achieving effective and behavioral-based outcomes (Foels, Driskell, Mullen, & Salas, 2000; Burke et al., 2006). In particular when applying the traditional team's effectiveness model (Hackman, 1987), leadership is regarded as an input factor which influences processes (coordination, creativity, team learning) and performance (Kirkman & Rosen, 1999; Lim & Ployhart, 2004; Tesluk & Mathieu, 1999).

The functional approach grasping the roles of the external leader of a team goes back many years (Hackman & Walton, 1986; McGrath, 1962). Although diverse kinds of functions have been identified which build up effective leadership in teams, these different functions can be crystallized to classify leader behaviors in person-oriented and task-oriented behaviors (Mathieu et al., 2008). In a meta-analysis by studying the relationships between leader behaviors and team performance outcomes, Burke et al. (2006) found that person-focused behaviors, including transformational and consideration behaviors, were beneficial for team effectiveness. Task-oriented behaviors, including initiating structure and boundary spanning, were also positively perceived for team performance.

Team coaching is another stream of team literature often referred to when studying team leadership (Mathieu et al., 2008). In contrast to external leaders who perform all leadership action, team coaching refers to "direct interaction with a team intended to help members make coordinated and task-appropriate use of their collective resources in accomplishing the team's work" (Hackman & Wageman, 2005: 269). Identifying team problems, process and problem consultation, and triggering and rewarding self-management are examples of coaching activities (Wageman, 2001). Research studying the impact of coaching on team performance is equivocal: some studies show a beneficial influence on team performance (Edmondson, 1999), whereas other authors found no influence (Wageman, 2001). Looking above the concept of performance, coaching, however, shown to be beneficial to self-management, members' relationships and satisfaction (Wageman, 2001), and psychological safety (Edmondson, 1999).

In contrast to external vertical leadership, in which leadership stems primarily from the leader, **shared leadership** in teams integrates the whole team, the team members and the officially designated team leader in leadership (Pearce, 2004). In this tradition, the leadership function is distributed among the team members. Such a leadership approach has been shown to positively enhance team performance (Carson et al., 2007; Tagger, Hackett, & Saha, 1999) and especially in those teams engaged in tasks characterized by complexity, creativity and interdependence (Cox et al., 2003; Pearce, 2004).

All these leadership approaches influence the team process to a greater or lesser extent in terms of building and maintaining members' relationships and taking charge of motivating and structuring the task behavior of team members in accordance with set goals. I consequently assume that leadership might well be in a position to influence a team process, namely team learning, as here too the two dimensions of task and social embeddedness are essential ingredients of engaging in learning. Before focusing on the relations between leadership and learning at the team level of analysis, I will, however, first shed light on the concept of team learning.

2.3   Team Learning

Over a decade ago, Senge (1990) was the person who set discussions on team learning rolling by suggesting that teams represent the vehicle for learning in organizations. Senge states: "Teams, not individuals, are the fundamental learning unit in modern organizations. This [is] where 'the rubber meets the road'; unless teams can learn, the organization cannot learn." (Senge: 1990:10)

Since the middle of the 90s, scholars from diverse fields have been working on understanding the concept of team learning. The ability to learn enables a team, inter alia, to handle unpredictable work situations, to solve complex problems in a creative way, to create new knowledge, to perform new tasks and to adapt to new technological approaches (Edmondson, Bohmer, & Pisano, 2001; London & Sessa, 2007). Hence, team learning is an essential ingredient for team performance especially for those teams engaged in complex, non-routine and creative tasks (Bunderson & Scutcliffe 2003; Edmondson, 1999; Wong, 2004).

In order to better understand the stream of research to which I am contributing with this thesis, I will review the recent team learning literature. Similar to Edmondsons et al.'s (2008) approach of classifying the learning literature at the team level of analysis, I distinguish between two main schools of thought. The first stream of literature considers teams primarily as information-processing systems. It regards team learning as a product of communication and coordination that builds up a team's shared knowledge basis regarding its task, context or resources (Edmondson et al., 2008). The second school of thought, which is the one I am following in this thesis, investigates team learning from the process perspective (Edmondson et al., 2008), as one aspect of a team's interaction process in the above reviewed traditional IPO model (Hackman, 1987). In the following, I will review in brief the first stream of literature, before focusing my attention on the second stream of research.[4]

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[4] An in-depth review of team learning literature from an outcome perspective is provided in my master's thesis "Team Learning: Past Suggestions, Present Findings, and Future Pathways" presented in September 2008 at ESADE. In the second school of thought I will also mainly review this literature in relation to the focus of my PhD research question. However, my master's thesis also provides a literature review beyond the PhD focus.

2.3.1 Team Learning as an Outcome of Communication and Coordination

The first school of thought looks at learning *outcomes.* It defines team learning as changes in a team's knowledge, achieved through communication and coordination that builds and thus enhances the knowledge base of the team's members concerning their team and tasks (Edmondson et al., 2008; Ellis, Hollenbeck, Ilgen, Porter, West, & Moon, 2003; Jehn & Rubert, 2008). Within this tradition, teams are regarded as information processing systems that learn as they engage in the intertwined processes of encoding, storing, retrieving and communicating information. Indeed, Wilson et al. (2007) defined group learning as the product of *sharing, storage,* and *retrieval* of group knowledge, routines, or behavior in which all three processes have to take place for group learning to occur. The following table gives an overview of team learning definitions from the outcome perspective.

Authors	Definition
Ellis, Hollenbeck, Ilgen, Porter, West, & Moon (2003:822)	"We define team learning as a relatively permanent change in the team's collective level of knowledge and skills produced by the shared experience of the team members."
Sarin & McDermott (2003: 709)	"We define team learning as occurring when the processing of experience changes the range of potential behaviors / actions (Huber, 1991)."
Wilson, Goodman, & Cronin (2007: 1052)	"Group Learning = Sharing * Storage * Retrieval"

Table 2: Overview of Definitions from the Outcome Perspective

Wilson et al.'s (2007) conceptualization of group learning resembles Wegner's (1986) concept of a transactive memory system (TMS), a stream with roots in the social psychology literature which constitutes a major area where research on learning as an outcome of communication and coordination has been focused on. A TMS is the cooperative division of cognitive labor with reference to the *encoding, storage, retrieval, and communication of information* from various areas that usually develops in close relationships (Wegner, 1986; Wegner, Erber, & Raymond, 1991). This reasoning of the strong interrelation of TMS with team learning crystallizes in Lewis et al.'s (2005) conceptualization of *TMS as Learning Systems* that create the knowledge needed for the ongoing task through a series of learning cycles.

More specifically, even though the concept of team learning was not always explicitly defined in early studies on TMS, researchers implicitly treated learning as an outcome, usually measured in the form of team performance, relating in particular to how teams manage to accomplish a new task in laboratory settings (Liang, Moreland, & Argote, 1995). A positive change of outcome, often in the form of higher team performance or effectiveness, provides evidence in most of these laboratory experiments that team learning has occurred (Argote et al., 2001; Edmondson et al., 2008; Lewis, Lange & Gillis, 2005; Zhang, Hempel, Han, & Tjosvold, 2007).

Studies that refer to group TMS tend to study this concept by comparing teams in laboratory experiments that engaged in assembling electronics-oriented kits (e.g. Liang et al., 1995; Moreland & Myaskovsky, 2000; Lewis et al., 2005). Recently, researchers have started to provide empirical evidence of group TMS in field settings of real work teams (Austin, 2003; Lewis, 2003; Zhang, et al., 2007) by building their own group specific constructs.

2.3.2 Team Learning from a Team Process Perspective

The second school of thought includes studies which regard team learning as a group process, particularly as ongoing activities (Edmondson et al., 2008). In this tradition, scholars build on constructs and methods of research from organizational learning (e.g. for a review, see Bapuji & Crossam, 2004, Sauquet, 2004) and from team effectiveness studies (Hackman, 1987). Scholars in this tradition usually analyze learning in teams embedded in real organizational settings by following case study methods (e.g. Brooks, 1994; Edmondson, 2003; Kasl et al., 1997; Sauquet, 2000), or quantitative, survey-research methods (e.g. Bresman, 2007; Edmondson, 1999; Tsjosvold, Yu, & Hui, 2004; Wong, 2004)

In this school of thought, team learning is understood as a "verb", as one aspect of a team's interaction processes (Edmondson et al., 2008). Hence, the bulk of studies adapts the traditional input-process-output approach and analyzes how managerial and contextual factors (input) influence the team learning process which, in turn, bear on the team's output, which is often evaluated by using performance quality or innovation measures (Edmondson, 1999; Edmondson et al., 2008). The following figure

exemplifies this classical approach of understanding team learning. Single input factors of the micro or macro context of teams are taken into account. In a subsequent step, it is then investigated how these factors, such as leader behavior, enhance team learning and how, in turn, learning encourages team performance.
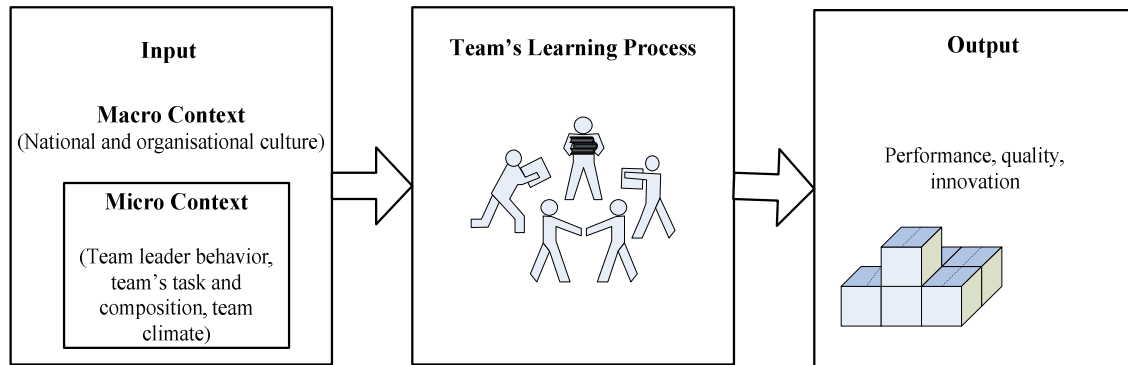
Figure 5: Typical Approach to Studying Team Learning as a Group Process

Before reviewing in detail the particular input factor of leadership - as this is the focus input factor of my dissertation - I will shed light on diverse kinds of team learning process concepts which have been discussed in the last 15 years. Additionally, I will analyze how these team learning process concepts have developed since the beginning of this research tradition.

Review of Team Learning Process Concepts

Many existing team learning process definitions (e.g. Edmondson, 1999, 2002; Kasl et al., 1997) are rooted in the American Pragmatism school of thought, and especially the work of the educational philosopher John Dewey (1859 – 1952), who wrote about inquiry and the nature of experience. In Dewey's understanding, people learn when they are trying to solve a problematic situation. Otherwise, it is automatic behavior that channels people's actions (Dewey, 1922). Hence, in this understanding, learning involves the iterative process of "designing, carrying out, reflecting upon, and modifying actions" (Edmondson, 1999: 353). Following Dewey's (1922) way of learning, an error made by individuals is rather like a test that enhances learning. It revises people's understanding of the current situation and modifies the action (Sauquet, 2004).

By investigating how professionals work and learn, Schön (1983) build on Dewey's (1922) understanding of learning. Professionals do not act on the basis of a predefined reality; instead, the work of professionals involves defining a situation as problematic and in a subsequent step acting upon this problematic situation by applying all the person's previously gained professional experience. The reflection on the new different situation resulting from the action includes the next step which might again necessitate a new problem definition. Taken together, the work of professionals is understood by Schön (1983) as iterative process cycles of *reflection and action*.

Based on the understanding of learning defined by Dewey (1922) and Schön (1983) as an iterative cycle of reflection and action, Edmondson (1999) conceptualizes her team learning processes by referring to particular learning activities. These learning activities include "asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of action." (Edmondson, 1999: 353) When a team is engaged in such learning behaviors, it is considered a learning team (Edmondson, 1999; 2002).

The understanding of learning of Schön (1983) also constitutes a fundamental building block in Watkins and Marsick's (1993) and Kasl et al.'s (1997) team learning model. Similar to Edmondson (1999), these authors also regard team learning as an integrated thinking and action process. Contrary to Edmondson (1999), who refers solely to a number of learning behaviors, Marsick and her colleagues distinguish between learning processes that are characterized either by 1) a cognitive or 2) an action-oriented nature. Cognitive learning processes comprise the process of *framing* an initial understanding of a situation and *reframing* it into a new understanding. The cognitive aspect of learning additionally includes the process of integrating perspective, the synthesis of different views among team members, yet not through a majority or compromise rule. Action-oriented processes imply *experimentation* to test a hypothesis and *crossing boundaries* in order to communicate ideas outside the team. In contrast with Edmondson (1999), for whom team learning is evaluated as either high or low, Kasl et al. (1997) explain in their case studies that teams run through evolutionary modes of learning, each of which displays the relative effective functioning of the proposed learning processes. The team modes begin with the fragmented mode characterized by

individualistic learning behaviors via pooled learning and range to the synergistic mode where members mutually create new knowledge.

Similar to Kasl et al. (1997) who integrate the importance of crossing boundaries in the learning processes, Wong (2004) clearly distinguishes between two source types of learning processes in her definition of learning: She defined *local learning* as the process of "the interpersonal knowledge acquisition, sharing, and combination of activities" (Wong, 2004: 646) among team members of the same team. The learning process of *distal learning* is similar to the local learning process, although these activities are engaged in with individuals outside the team's boundaries.

Taken as a whole, however, all these team learning definitions have in common that their focus lies in the learning processes. The processes of generating new knowledge (Kasl et al., 1997) or self-reflection (Edmondson, 1999) are evidence of team learning, and do not show whether these teams have 'really' acted on gained insights and profited from reflective processes (Edmondson, 2002).

Besides regarding the process, later concepts of team learning also include the outcomes generated by team learning activities. For example, Argote et al., (2001) defined team learning as follows: "We define group learning in terms of both the processes and outcomes of group interaction. As a process, group learning involves the activities through which individuals acquire, share and combine knowledge through experience with one another. Evidence that group learning has occurred includes changes in knowledge, either implicit or explicit, that occur as a result of such collaboration." (Argote et al., 2001: 370)

Likewise, Edmondson (2002) conceptualizes team learning as the interplay of reflection and action by differentiating between behaviors that *promote a team's insights* and those that *apply the team's gained insights*. For each of these two categories, Edmondson (2002) defines markers: the first category that focuses on the reflection part of learning includes behaviors such as sharing information, seeking feedback and discussing errors. The latter category stresses the importance of acting on gained insights and includes activities such as implementing results, transferring new

knowledge to others, and making changes and improvements (Edmondson, 2002). In contrast to Edmondson's (1999) previous concept of team learning, which focuses solely on the team learning reflection process, in Edmondson's (2002) refined understanding, however, teams need to engage in both learning categories - reflection and action - to perform complete learning cycles. In her own words: "This is in contrast with previous work in which learning in a team was presented as either high or low, and evidence of team self-reflection was considered evidence of learning behavior (Edmondson, 1999)." (Edmondson, 2002: 1333)

This non-substitution of learning patterns is also reflected in Gibson and Vermeulen's (2003) concept, defined as "a cycle of experimentation, reflective communication and codification." (2003: 202) In contrast to Kasl et al. (1997), who regard experimentation rather as an act of hypothesis testing, Gibson and Vermeulen (2003) understand *experimentation* as an exploratory activity by producing new ideas and insights. *Reflective communication* goes in line with Kasl et al.'s (1997) understanding of the cognitive process of integrating perspective. "To come to a common understanding of what the experience of information means, members transfer and combine insights through a process of reflective communication…which enables them to arrive at a potential solution." (Gibson & Vermeulen, 2003: 205-206) The third part of the team learning cycle includes *knowledge codification*. Team ideas need to be translated into concrete action items which, in turn, decrease ambiguity in the team (Gibson & Vermeulen, 2003). Here, too, all three elements of the learning cycle need to be present for team learning to occur.

The following table gives an overview of team learning definitions embedded in the team process school of thought, showing that the initial focus of these definitions lies in understanding how teams learn. It includes activities and behaviors concerning what team members are actually doing while they learn (Edmondson, 1999; Kasl et al., 1997). In this case, learning is regarded as a verb (Edmondson et al., 2008). Based on this idea, recent scholars also highlight the outcomes of these learning processes in addition to the process itself (Edmondson, 2002; Gibson & Vermeulen, 2003) in order to see whether the team really has profited from gained insights by acting and implementing them.

Author(s)	Definition
Focus: Processes of Learning	
Edmondson (1999: 353)	"...ongoing process of reflection and action, characterized by asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of actions."
Kasl, Marsick, & Dechant (1997: 229)	"We define team learning as a process through which a group creates knowledge for its members, for itself as a system, and for others. …We portray team learning as an interrelated set of processes in which collective thinking and action play a central role."
Van der Vegt, & Bunderson (2005: 534)	"We define team learning behaviors as activities by which team members seek to acquire, share, refine, or combine task-relevant knowledge though interaction with one another (Argote, Gruenfeld, & Naquin, 2001: 370). These activities may include asking questions, challenging assumptions, seeking different perspectives, evaluating alternatives, and reflection on past actions (Edmondson, 1999; Gibson & Vermeulen, 2003). We therefore view team learning behavior as one aspect of a group's 'interaction process' (Hackman & Morris, 1975)..."
Focus: Internal and External Learning Processes	
Wong (2004: 646)	"Local learning is defined as the interpersonal knowledge acquisition, sharing, and combination activities with *members in the same group*, and distal learning is defined as the interpersonal knowledge acquisition, sharing, and combination activities with *individuals external to the group*."
Focus: Processes of Learning + Outcomes of these Processes	
Argote, Guenfeld, & Naquin, (2001: 370)	"We define group learning in terms of both the processes and outcomes of group interaction. As a process, group learning involves the activities through which individuals acquire, share and combine knowledge through experience with one another. Evidence that group learning has occurred includes changes in knowledge, either implicit or explicit, that occur as a result of such collaboration."
Edmondson (2002: 1333)	**"To explore the process of team learning and the interplay between reflection and action, I first distinguished between team behaviors that promoted new insight and those that applied (or took action based on) new insight…This is in contrast with previous work in which learning in a team was presented as either high or low, and evidence of team self-reflection was considered evidence of learning behavior (Edmondson, 1999)."**
Gibson & Vermeulen (2003: 203-204)	"The exploration of knowledge through experimentation, the combination of insights through reflective communication, and the explication and specification of what has been learned through codification."

Table 3: Team Learning Definition from the Team Process Perspective

In this dissertation, I follow the latter tradition (process and outcomes of the process) and regard team learning from a process perspective, including the idea of conceptualizing team learning as a non-substitutable interplay of reflective behaviors and actions that need to occur in order to implement gained collective insights (Edmondson, 2002).

2.4   Leadership and Team Learning

As team learning occurs on a social basis, studying factors influencing team members' interactions promises to provide a better understanding of factors enabling team learning. In this sense, Brooks (1994) and Edmondson (1999) found first empirical support by highlighting the social context in which the team is embedded when studying team learning. Early studies highlighted the importance of decreasing power differences between the leader and his followers in order to facilitate learning (Brooks, 1994). Based on this idea, Edmondson (1999) focuses on the relationship perspective of leadership and highlights a team leader's need to decrease interpersonal perceptions and concerns involving power differences. In particular, team leader coaching and contextual support is shown to support a team climate characterized by psychological safety in teams, defined as "a shared belief held by members of a team that the team is safe for interpersonal risk taking." (Edmondson, 1999: 350) This open climate allows team members to speak up freely about their concerns and to discuss new ideas, seeking for feedback, behaviors that sum up team learning.

However, team learning is not only embedded in a social context that shapes team learning. Team members also need to reflect on the team's task, so-called task learning (Jehn & Rubert, 2008; Tucker et al., 2007). Maintained relations and a psychologically safe team climate give team members the possibility and inner freedom to openly reflect. However, team members also need a kind of frame of the task which guides the team to engage in learning activities (Bolman & Deal, 1993). Indeed, clarification of the team's goals has been shown to positively enhance team learning outcomes (Sarin & McDermott, 2003). Stating goals and task descriptions has been shown to create recurring communication patterns and enhance communication, and consequently learning outcomes, in new product development teams (Sarin & McDermott, 2003).

Taken together, in order to engage successfully in team learning processes, a team needs socially maintained relations among team members to make interactions such as seeking feedback or asking questions - namely learning behaviors - possible. However, team members also need to know the frame of the task and what they are supposed to achieve in order to reflect on the current common knowledge base (Sarin & McDermott, 2003; Wong, 2004). Especially these two dimensions, the social context to assure team interactions and the task dimension, are areas which are typically influenced by the leader.

However, the reviewed studies on linking leadership and team learning only considered specific aspects of leadership in conjunction with learning, such as, for example, Edmondson's field of research (Edmondson, 1999; 2003; Edmondson et al., 2008) which highlighted the need for a psychologically safe team climate. Indeed, Edmondson (1999) called for future research to take a broader perspective on leadership when studying team learning. In her own words: "It focused on two antecedent conditions with clear conceptual relationships to team psychological safety but did not examine a wide range of managerial factors that might also affect team learning. For example, team leader coaching was included in the study, but the data do not specify leader behaviors precisely." (Edmondson, 1999: 378) Also Sauquet (2000) highlighted the need for studying leadership and learning at the team level.

Even after seven years of research, two different literature reviews on leadership and learning performance, respectively, independently concluded that only little systematic research exists linking leadership and learning (Berson, Nemmanich, Waldman, Galvin, & Keller, 2006). Burke et al. (2006) came to the conclusion that, "although researchers have argued that team leaders play a key role in the creation and maintenance of effective teams, there has been little research conducted on the relationships between leadership behaviors and team learning." (Burke et al., 2006: 299)

As team learning is a crucial ingredient for teams' innovativeness, I will focus in the following on a specific team leadership approach which is particularly suitable for teams working on a task which is characterized by creativity, interdependence and complexity: **Shared leadership** is known to be especially suitable for such project

teams that are working on novel, non-routine tasks (Pearce, 2004) and has been shown to outperform teams led by a single external leader (Carson et al., 2007). A more detailed discussion on shared leadership is given in the following.

2.5   Shared Leadership and Its Benefits

The bulk of leadership theories still stick to the typical "leader as a commander" - the vertical leadership - approach which became dominant during the scientific management movement (Taylor, 1923). Although scientific management was questioned many years ago (cf., chapter 2.2.2.2), numerous leadership theories still adhere to this way of thinking, namely of having a single leader at the top of an organization or team (Ensley et al., 2006; Pearce & Conger, 2003). As well as this, although work on leadership has pointed to the importance of integrating followers in the leaders' decision-making process, these leadership concepts still keep on juxtaposing the team leader and the followers (Ensley et al., 2006; Kaiser, Hogan, & Craig, 2008)

Hence, leadership scholars have largely neglected to study leadership stemming from the team (Pearce et al., 2008), although early researchers indicated the potential benefits of shared leadership (Gibb, 1954). Gibb (1954) was one of the first scholars to stress the importance of integrating followers in the leadership process, as he stated: "Leadership is probably best conceived as a group quality, as a set of functions which must be carried out by the group. This concept of 'distributed leadership' is an important one." (Gibb, 1954: 884) Although the concept of shared leadership has been threatened to be sought into oblivion (Carson et al. 2007), this leadership concept has recently been revitalized (Pearce et al., 2008).

For the past couple of years, management scholars and organizational psychologists have listed the topic of shared leadership on their debating roster (Day et al., 2004) which has recently led to some theoretical and empirical studies in the Academy of Management (Carson et al., 2007), and the Academy of Management Executive Journal (Pearce, 2004). Additionally, a special issue in 2006 (Ensley et al., 2006; Mehra et al., 2006) and several further studies on shared leadership have been published in the Leadership Quarterly Journal (e.g., Day et al., 2004).

But what are the underlying reasons for and benefits of applying a shared leadership approach instead of the traditional top-down model of leadership in today's organizations?

The following three trends in team structure, design and organizational context are identified here, pinpointing the need to stem leadership from the team instead of from a single leader. The following figure depicts the need for organizations to rethink their current leadership model and adapt it to a more distributed model (Carson et al., 2007).
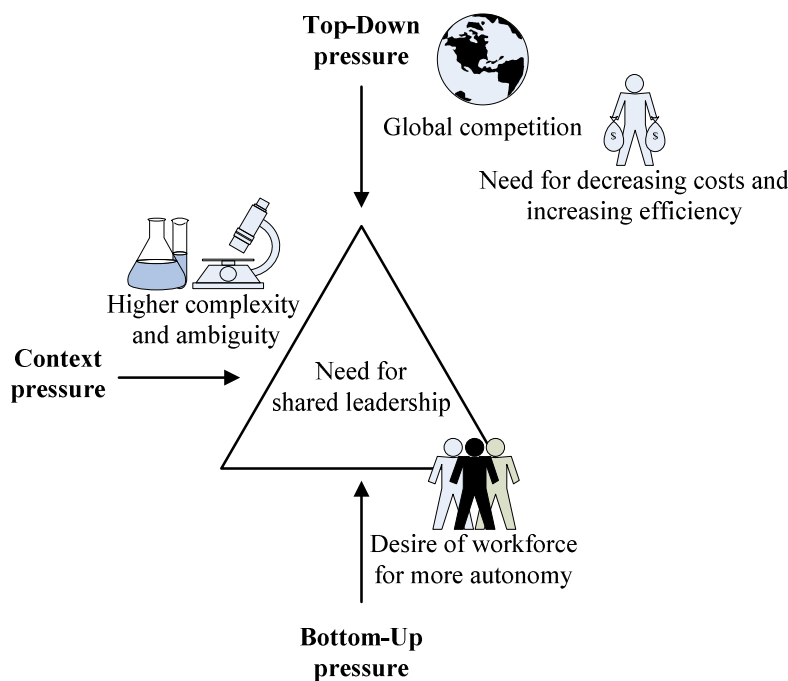
Figure 6: Trends Showing the Need for a Shared Leadership Approach

First, the tasks of the teams of today have risen in complexity and ambiguity, making it less likely for a single leader to have all the knowledge and skills at hand in order to effectively lead the team (Day et al., 2004; Cox et al., 2003). This is especially true against the background of the increase in knowledge-intensive tasks in organizations today. In Pearce's (2004) own words: "The reason [for the importance of shared leadership] is clear. It is ever more difficult for any one person to have all of the knowledge, skills, and abilities required for all aspects of knowledge work, and this is true in a wide variety of contexts ranging from cross-functional task forces to R&D labs, even to the executive suite." (Pearce, 2004:47)

Second, this trend concerns the shift from individually performing workers to teamwork (cf. chapter 2.2.2.2.1) with an inherent increase in knowledge-intensive work based on highly skilled organizational members. Typically, these knowledge workers seek for autonomy on how to best implement all their gained expertise (Hackman, 1987; Carson et al., 2007). Today's workforce is increasingly seeking more voice and meaningful influence, and therefore aims at shaping and participating in the leadership process in their embedded teams (Carson et al., 2007; Cox et al., 2003; Pearce, 2004) instead of following one single opinion given by the vertical leader.

Third, a further trend towards shared leadership comes from the top down. Today's organizations are facing pressure to find ways to be more competitive because of increasing global competition (Pearce, 2004). Ways of remaining competitive often involve reducing a firm's costs and increasing its efficiency. Higher efficiency and the reduction of costs in turn lead many firms to adapt to team structures. As mentioned above, this again points to the need for stemming leadership from the team as members aim to shape the team's life collectively (Pearce & Conger, 2003).

Indeed, studies on shared leadership have already shown that teams characterized by a shared leadership outperform teams that were characterized by a single leader (Carson et al., 2007; Taggar, Hackett, & Saha, 1999). Persons outside these teams evaluated the quality of the team projects in which the leadership was shared as being higher than those with vertical leadership (Carson et al., 2007).

Having explained the benefits of shared leadership in today's organization, I will now review for what teams a shared leadership approach is most appropriate, followed by a review of diverse definitions existing in the literature of shared leadership.

2.5.1 Indicators for the Appropriateness of Shared Leadership

In comparison to the traditional vertical leadership approach, shared leadership is a rather complex, time consuming process of guiding a project. Hence, not every task should be done by adapting a shared leadership form (Barry, 1991; Pearce, 2004). In order to evaluate the appropriateness of shared leadership, three intertwined criteria are

reviewed, namely interdependence, creativity and complexity (Day et al., 2004; Pearce, 2004). The following figure illustrates these three criteria.
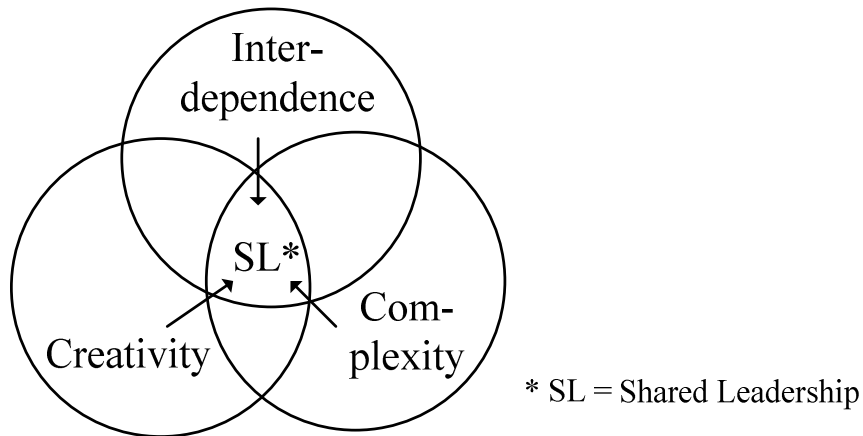
Figure 7: Indicators for the Appropriateness of Shared Leadership

Interdependence of task work between members is one of the criteria that highlight the potential for a shared leadership form (Pearce, 2004). According to Pearce (2004), "The more interdependent the knowledge workers, the greater the need for shared leadership." (Pearce: 2004: 48) In highly interwoven tasks with a high need for coordination, team members often require "…dynamic prescription, feedback, encouragement, and inspiration between skilled professionals who have clear and compelling expertise to share – in other words, shared leadership." (Pearce, 2004: 49)

Tasks that necessitate members' **creativity** also benefit from a shared leadership form (Cox et al., 2003; Day et al., 2004; Pearce, 2004). By its very nature, creative work necessitates inputs from diverse team members. That is why, for example, a study has shown that teams in charge of a creative task outperformed those which were led by directive leaders (Somech, 2006). This fact led Pearce (2004) to deduce that as shared leadership is an extreme form of participative leadership, shared leadership would also be beneficial to teams in charge of creative tasks. In order to support this reasoning, Pearce (2004) looked for the authorship in publications on hard-science discoveries. In the latest volume of Science, Pearce (2004) found that, of a total of 195 published articles, only 3 percent of these papers were published by one individual and 77 percent were published by three or more authors. This beneficial role of shared leadership in

solving creative tasks has also been recognized by Hooker and Csikszentmihalyi (2003) who claim that shared leadership is highly interwoven with flow and creativity.

Another determinant which highlights the need for shared leadership is the **complexity** involved in a team's task. "The more complex the task, the lower the likelihood that any one individual can be an expert in all task components." (Pearce, 2004: 49) To make the high complexity of the tasks tangible, team members should rather share the responsibilities in such a way that the individual members are accountable for the areas they have the most expertise in (Cox et al., 2003). Furthermore, in distributed leadership this often leads to the fact that team members' roles and responsibilities overlap. "An advantage of role overlap is that it reduces the likelihood of decision errors, because when two or more people share roles they tend to cross-check each other's performance." (Gronn, 2002a: 432)

To sum up, as a team's task increases in the highly interwoven characteristics of interdependence, creativity and complexity, the need for shared leadership also increases (Day et al., 2004; Gronn, 2002a, b). But what does shared leadership mean? In order to answer this question, I will review definitions of shared, collective and distributed leadership by grouping them into categories that highlight particular aspects of this leadership form.

2.5.2 Shared Leadership Defined

Similar to the emerging and increasing attempts to gain knowledge on a leadership theory stemming from the team (Day et al., 2004), scholars have also defined this collective team phenomenon in various ways by referring to terms of distributed, shared and collective leadership (Mathieu et al., 2008). *Distributed leadership* often refers to the field of educational leadership in the context of schools and universities, where leadership stems from many leaders (Bennet, Harvey, Wise, & Woods, 2003; Gronn, 2002a; Spillane, 2005): "Some use distributed leadership to indicate that school leadership involves multiple leaders." (Spillane 2005: 143-144) Business management scholars primarily tend to use the term *shared leadership* (Pearce, 2004; Pearce & Conger, 2003; Carson et al., 2007) and sometimes, but more seldom, refer to *collective*

leadership (Hiller, Day & Vance, 2006) when explaining a leadership stemming from multiple members in a team. This distinction in the context of whether the scholars refer to either distributed or shared leadership is very general and should only be regarded as an indication of the context. Moreover, both streams - shared (Carson et al., 2007) and distributed leadership (Gronn, 2002a) - follow the same initial idea by referring to Gibb's (1954) early frame of this collective leadership phenomenon by distinguishing between two forms of leadership, namely focused and distributed leadership, with the latter occuring when more than one team member engages in leadership. Additionally, in both the business and the educational context, the authors cross-refer to each other's concept in their definitions. The business scholars Carson et al. (2007), for instance, define shared leadership in project teams as follows: "We define <u>shared leadership</u> as an emergent team property that results from the <u>distribution of leadership</u> influence across multiple team members." (Carson et al., 2007: 1218) (underline added)

As the terms shared and distributed leadership both refer to the same phenomenon, I will use them both interchangeably in accordance with recent papers (Avolio, Walumbwa, & Weber, 2008; Carson et al., 2007; Day et al., 2004; Yukl, 2010). For example, Avolio et al. (2008) claim in their leadership review in the section on shared leadership: "We refer to the terms 'shared leadership', 'distributed leadership', and 'collective leadership' interchangeably, paralleling their usage in the leadership literature." (Avolio et al., 2008:811) In order to get a better understanding of this collective leadership phenomenon, I will now review a variety of definitions by referring to papers from management leadership literature and also from the educational leadership stream.

On reviewing the definitions of shared leadership, five main characteristics can be identified that distinguish definitions on shared leadership from each other. However, these five groups should not be regarded as totally exclusive; instead, these conceptualizations on shared leadership build on each other and are hence interrelated. The following figure gives an overview of the five identified groups which will be explained in more detail in the following.

Shared Leadership Definitions	
Group 1	Number of Individuals Involved in Shared Leadership
Group 2	Shared Leadership as a Group Phenomenon
Group 3	Shared Leadership as a Conjoint Agency
Group 4	Shared Leadership as a Dynamic Concept
Group 5	Dynamic Concept including a Vertical Leader

Figure 8: Identified Groups of Shared Leadership Definitions

2.5.2.1 Group 1: Number of Individuals Involved in Shared Leadership

The first group of these definitions of shared leadership focuses on *the number of people* involved in leadership. Some scholars argue that shared leadership exists when two or more are engaged in the leadership (Gibb, 1954). Others, in turn, claim that shared leadership "occurs when <u>all</u> members of a team are fully engaged in the leadership process." (Pearce, 2004: 48) (underline added)

Taken together, the number of members, or to phrase it differently, the source of influence (high or low) is critical in order to constitute shared leadership (Carson et al., 2007). Each individual contributes towards leadership. In other words, a team consists of many individual leaders that make up shared leadership. In this sense, Mehra, Smith, Dixon and Robertson (2006), for example, defined it as a "shared, distributed phenomenon in which there can be several…leaders." (Mehra et al., 2006:233) Still, it seems to me that the focus of attention is on the individual, the leader, even though there are several in the team.

This also goes in line with the methodology used to measure shared leadership in this group. Mehra et al., (2006), for instance, took a network approach and asked team

members of a single team "to check the names of the people they perceived to be leaders." (Mehra et al., 2006: 237) The following figure exemplifies the focus on several individual leaders which sum up a shared leadership form.
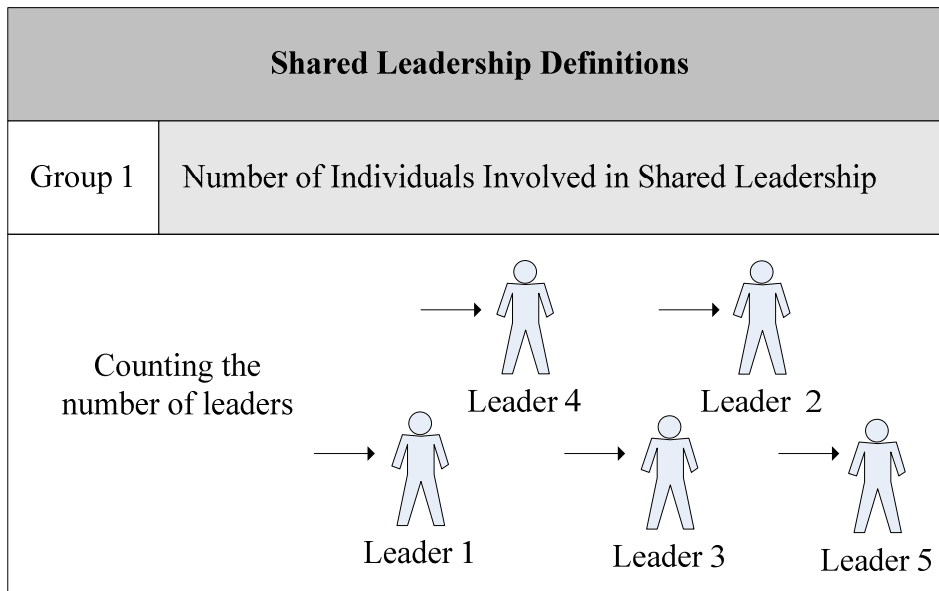
Figure 9: Group 1: Number of Individuals Involved

2.5.2.2   Group 2: Shared Leadership as a Group Phenomenon

From a slightly different perspective, but still differentiating vertical from shared leadership based on the number of sources of leadership, as referred to above, Ensley, Hmieleski and Pearce (2006) regard shared leadership as a group phenomenon, focusing on the group instead of on the individual leaders that make up the group (Mehra et al., 2006). Ensley et al. (2006) defined shared leadership as a "team process where leadership is carried out by the team as a whole, rather than solely by a single designated individual." (Ensley et al., 2005: 1219) The focus is on the team as a whole engaging in leadership instead of vertical leadership performed by a single leader, the traditional leadership approach. Contrary to group 1, however, the focus is on the collective that builds up leadership, not on the individual co-leaders who engage in leadership as seen in group 1.
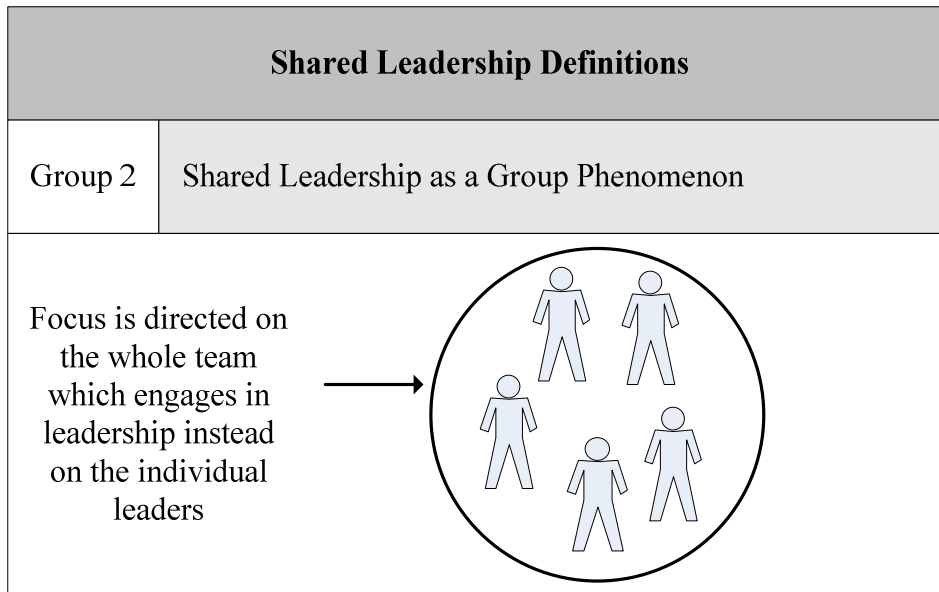
Figure 10: Group 2: Shared Leadership as a Group Phenomenon

2.5.2.3   Group 3: Shared Leadership as a Conjoint Agency

In this group, shared leadership is more than the sum of individual parts as seen in group 1. The focus shifts from the individual team members engaged in leadership to the group, and influences among team members successively build on each other and, in turn, affect team members. In other words, the leadership process has a reciprocal character, meaning that team members influence their colleagues while they themselves are also influenced. Gronn (2002a) defined this concept as *conjoint agency* in distributed leadership, explaining it by referring to the following example: "Reciprocity denotes the influence of two or more parties on one another and it occurs in a manner akin to a virtuous cycle or zigzagging spiral. Here, A influences B and C, and is influenced in turn by them…, with each person subsequently bearing the accumulated effects of successive phases of influence, as they begin influencing one another again." (Gronn, 2002a: 431) Gronn (2002a, b) described distributed leadership as concertive actions. His focus is not on the individual member, but rather on the "conjoint agency, or the concertive labor performed by pluralities of interdependent organizational members." (Gronn, 2002b: 28) The following figure exemplifies the idea of conjoint agency in Gronn's (2002a, b) understanding.

Figure 11: Group 3: Shared Leadership as a Conjoint Agency

2.5.2.4 Group 4: Shared Leadership as Dynamic Concept

Although the previous conjoint agency group initiated by Gronn (2002a, b) has indicated the dynamic successive character of distributed leadership, the focus lies primarily on the reciprocal influence process. This definition group of shared leadership built on this successive character of shared leadership and defined it as a *dynamic concept* that emerges over time. Contrary to the first two groups which take a snap-shot of team leadership at one point in time, scholars in this group take the time factor into consideration when defining shared leadership. Applying this line of thought, Carson et al., (2007) define shared leadership as "an emergent team property that results from the distribution of leadership across multiple team members." In a similar vein, Pearce and Conger (2003) regard shared leadership as "a dynamic, interactive influencing process among individuals in the group for which the objective is to lead one another to the achievement of group or organizational goals, or both." (Pearce & Coger, 2003: 1)

This group of definitions is rooted in Day et al.'s (2004) understanding of collective team leadership, namely to consider team leadership not only as an input factor, but also as an output for the team's next episode. Here, a team's collective leadership is understood as a team capacity which develops over the team's life cycle.

However, these referred studies only define shared leadership as a dynamic concept that develops over team's life span, and so far no empirical studies have ever explored the emergence and development of shared leadership (Mathieu et al., 2008; Yukl, 2010).

2.5.2.5   Group 5: Shared Leadership as a Dynamic Concept and a Vertical Leader

The fifth identified group of definitions on shared leadership also takes this dynamic emerging character of shared leadership into consideration. However, scholars of this group add a further characteristic when defining shared leadership. In this group, scholars argue that shared leadership can emerge even though the team is characterized by a formal project leader. At a first cursory glance, having a formal leader might be regarded as a contradiction per se. However, recent research has proposed the supporting effects of vertical leaders on shared leadership (Cox, Pearce, & Perry, 2003; Locke, 2003; Pearce, 2004).

Hence, shared leadership in this definition group, including the idea of a dynamic character, is defined as "a simultaneous, ongoing, mutual influence process within a team that is characterized by a 'serial emergence' of official as well as unofficial leaders." (Pearce, Yoo, & Alavi, 2004: 1219) In a very similar vein, Pearce and his colleagues (2003) proposed that, besides the simultaneous presence of vertical leadership, shared leadership is "a collective, emergent process of group interaction in which members engage in peer leadership while working together. Shared leadership might emerge as a sort of behavioral mechanism through an unfolding series of fluid, situationally appropriate exchanges of lateral influence." (Cox et al., 2003:53)

This figure exemplifies the dynamic character of both kinds of "dynamic" shared leadership definitions (groups 4 and 5), regardless of whether a team leader is assigned to the project, as in the shared leadership model, or the officially designated team leader acts more like a regular team member than as a superior.

Shared Leadership Definitions	
Group 4/5	Shared Leadership as a Dynamic Concept
Over time more and more team members emerge as a co-leader of their team	
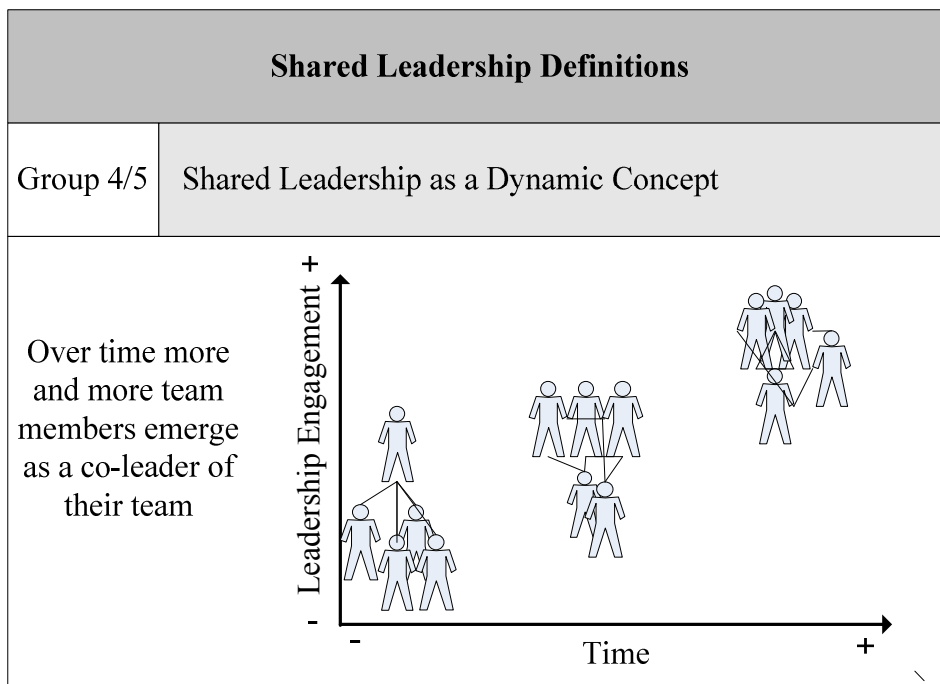
Figure 12: Groups 4 and 5: Dynamic Perspective of Shared Leadership

2.5.2.6   Overview of Shared Leadership Definitions

The following table gives an overview of the various definitions of shared leadership reviewed above, classified into these five groups.

	Authors	Definition
Group 1	**Number of Individuals Involved in Shared Leadership**	
	Pearce (2004: 48)	"...occurs when all members of a team are fully engaged in the leadership process."
	Mehra, Smith, Dixon, and Robertson (2006: 233)	"Shared, distributed phenomenon in which there can be several…leaders."
Group 2	**Shared Leadership as a Group Phenomenon**	
	Ensley, Hmieleski and Pearce (2006:1219)	"Team process where leadership is carried out by the team as a whole, rather than solely by a single designated individual."
Group 3	**Shared Leadership as a Conjoint Agency**	
	Gronn (2002a: 431)	"Reciprocity denotes the influence of two or more parties on one another and it occurs in a manner akin to a virtuous cycle or zigzagging spiral. Here, A influences B and C, and is influenced in turn by them… with each person subsequently bearing the accumulated effects of successive phases of influence, as they begin influencing one another again. The internal relationship of the conjoint agents is one of reciprocal influence."
Group 4	**Shared Leadership as a Dynamic Concept**	
	Carson, Tesluk, and Marrone (2007: 1218)	"We define shared leadership an emergent team property that results from the distribution of leadership across multiple team members."
	Pearce and Conger (2003: 1)	"We define shared leadership as a dynamic, interactive influence process among individuals in the group for which the objective is to lead one another to the achievement of group or organizational goals, or both."
Group 5	**Dynamic Concept including a Vertical Leader**	
	Pearce, Yoo, and Alavi (2004: 1219)	**"Simultaneous, ongoing, mutual influence process within a team that is characterized by 'serial emergence' of official as well as unofficial leaders."**

Table 4: Shared Leadership Defined

In this dissertation, I follow Pearce and colleagues' (2004) and Carson et al.'s (2007) way of thinking and regard shared leadership as an emerging dynamic concept that evolves over a team's life span. Most of these definitions integrate the idea of leadership influence in the form of strengths of influence (quality or effectiveness) and source of influence (few or many team members) (Carson et al., 2007), but do not specify what leadership influence really means and hence stick to this abstract terminology of "influence". I tend to follow Cox et al.'s (2003) empirical concept, namely to precisely link shared leadership to the behavioral concept of leadership (Cox et al., 2003). Carson et al., (2007) also relate their shared leadership understanding to the behavioral school of thought and refer to specific leadership activities that individuals engage in to influence their team mates. These authors argue that "shared leadership originates with individual members of a team engaging in activities that influence the team and other team members in areas related to direction, motivation, and support Yukl (1989)." (Carson et al., 2007: 1218-1219) In the empirical part, however, these authors neglect to apply this behavioral understanding of leadership and treat is as an abstract concept when more than one is engaged in leadership.

2.6   Concepts Relating to Shared Leadership Literature

After having reviewed the literature on shared leadership, it is also important to debate team concepts which are closely related to shared leadership literature. In the review of the team literature, concepts such as self-managing teams, team empowerment and emerging leadership are identified which, at first sight, seem to be highly interrelated with shared leadership (Carson et al., 2007; Pearce & Conger, 2003). The following description is intended to help differentiate such concepts in the literature on shared leadership to which I am contributing with this thesis.

Self-managing teams, also called autonomous teams, assume responsibility for their context and their design. Additionally, self-managing teams are in charge of planning and monitoring their tasks (Hackman, 1987; Cohen & Bailey, 1997). Although the presence of autonomy in self-managed teams (Langfred, 2004) may support the development of shared leadership, the presence of such a team design does not necessarily lead to a distribution of leadership among team members (Carson et al.,

2007). In contrast, literature on self-managing teams rather tends to focus on the one team member who has been appointed the new leader of this autonomous group. In Pearce and Conger's (2003) own words: "Although recognizing that team members can, and do, take on roles that were previously reserved for management, this literature focuses more on the role of the appointed leader and less on the role of the team members in the leadership process (cf. Stewart & Manz, 1995). Thus, although the literature on self-managing work teams acknowledges the role of team members in the leadership process, it does not go so far as to suggest a systematic approach to the examination of how, and to what effect, the process of leadership can be shared by the team as a whole." (Pearce & Conger, 2003: 11)

The research stream of **empowerment** has also received high dedication in the recent past (Manz & Sims, 1989; Kirkman & Rosen, 1999). In contrast to the traditional models of management where power originates from the top, literature on empowerment highlights the importance of decentralizing power (Pearce & Conger, 2003). Empowerment is regarded as a motivational construct for team members as team members perceive their task with a high level of meaningfulness, autonomy, and potency (Kirkman & Rosen 1999). The bulk of research to date has focused on the impact of empowerment on the individual (e.g. Conger & Kanungo, 1988), and only little research has turned its focus on the team level of analysis (e.g. Kirkman & Rosen, 1999; Mohrman, Cohen, & Mohrman, 1995). Sharing power with team colleagues is, however, not congruent with distributing leadership originating from the group (Pearce & Conger, 2003). This is true because, "Shared leadership only exists to the extent that the team activity engages in the leadership process. As such, empowerment is a necessary, but not sufficient, condition for shared leadership to be developed and displayed by teams." (Pearce & Conger, 2003: 12) Additionally, an empowered team may also be characterized by an external leader providing the most leadership influence which, in turn, leads to very little leadership influence being engaged in by team members (Carson et al., 2007).

Shared leadership literature also has two similarities with the literature on **emergent leadership** (Carson et al., 2007; Pearce & Conger, 2003). Emergent leaders are the persons in a group who engage in significant leadership influence on their team

colleagues even though no formal authority has been assigned to them (Schneider & Goktepe, 1983). Shared leadership literature is in agreement with early results by Bales (1953) who explored the phenomenon that two leaders often emerge in leaderless groups. These findings indicate that one emerged leader takes charge of the task and the other one of the relations among members. Furthermore, in both streams, scholars are interested in whether leadership is provided informally (emergent leaders) in addition to or as a substitute for a formal leader. The difference in both concepts is, however, twofold: firstly, papers on emergent leadership focus primarily on the characteristics of individuals (e.g. personality attributes and cognitive ability) that predict emergence of particular leaders (e.g. Taggar, et al., 1999). Secondly, the emergence leadership approach narrowly assumes that, at most, two leaders emerge from the team. Hence, the emergence leadership tradition ignores the possibility of leadership emergence of diverse leaders over a team's life span (Carson et al., 2007; Pearce & Conger, 2003). In this sense, Carson et al. (2007) remark: "In sum, shared leadership is distincted from emergent leadership in that the former can take place in a team with or without a designated leader, can be either formal or informal, and addresses the distribution and sharing of leadership among all team members, in contrast to only one or two leaders." (Carson et al., 2007: 1221)

2.7 Shared Leadership and Team Learning as a Research Topic

The first purpose of this doctoral thesis is directed at better understanding the nature of shared leadership. In comparison to the bulk of research conducted on vertical leadership, only little has been done on understanding shared leadership (Carson et al., 2007; Pearce et al., 2008; Yukl, 2010).

I follow the future research suggestion by Carson et al., (2007) who claim, "Future work should focus on a more detailed understanding of the nature of shared leadership" (Carson et al., 2007: 1230). I apply Yukl's (2010) behavioral leadership understanding: he differentiates between three substances of leadership, regardless of whether it is shared or focuses on the individual leader: The task-focused substance of leadership includes activities of planning, clarifying roles and objectives, and monitoring. The relations-focused substance of leadership comprises the building and maintenance of

members' relationships. The change-focused dimension implies leadership activities of boundary spanning and intellectual stimulation. By applying Yukl's (2010) leadership understanding, the question which concerns my interest is how teams share such leadership activities that belong to the leadership substance of task, relations and change. As teams are dynamic constructs which change over time (Hackman & Wageman, 2005; Gersick, 1988), I also assume - in accordance with recent, shared leadership definitions (cf. chapter 2.5.2.5) - that a team's distribution of leadership also changes over the team's life cycle. For this reason, I also look for its emergence and development when exploring the shared leadership distribution.

Research Question 1: How are leadership activities shared?

The second purpose is directed at better understanding the relationship between shared leadership and team learning. As leadership activities are directed at influencing team processes in terms of building up and maintaining social relations, framing the team's task and opening team members for something new, it is interesting to study a team process which necessitates and is built on the conditions created by leadership. Indeed, team learning literature points to the importance of maintained social interactions through a safe team climate (Edmondson, 1999) as a precondition for team members to engage in learning. Furthermore, literature on learning stresses the importance of a structuring of the team's project to be undertaken as a starting point for the members' task reflection (Sarin & McDermott, 2004; Wong, 2004). Team learning does not only depend on maintaining relationships that allow one to freely discuss and speak up, and on exploiting and reflecting on team's task. A team also needs to look for something new, which might be stimulated through rather change-oriented leadership behaviors (Schippers et al., 2007).

However, recent papers studying leadership and team learning have only investigated some particular expects of leadership (e.g. Edmondson (1999) with her concept of psychological safety) and have not taken a broader picture of leadership when studying learning. That is why recent papers have stressed the need to study the relationship

between leadership and team learning in a more complete way (Burke et al., 2006; Sauquet, 2000).   I specifically explore how leadership activities engaged by team members influence team learning.

Research question 2: How do shared leadership activities influence team learning?

The following table illustrates the relationships between shared leadership and team learning. Following the discussion in the literature review, I adapt to the behavioral leadership understanding by Yukl (2010), who claims that effective leadership is built on three leadership categories of task, relation and change. For each substance of leadership, Yukl (2010) proposes leadership activities which operationalize those categories (left column of the table). In terms of team learning, I apply Edmondson's (2002) understanding of learning. For Edmondson (2002), a team engages in complete learning cycles when it engages in 1) reflective behaviors in order increase collective insights, and 2) action to implement gained insights in order to produce change for the team.

This table serves me as an aid for building a conceptual framework to classify and analyze the data in respect of shared leadership and team learning. It supports me by showing how data can be approached and organized in each of the three case studies, which again is of great help for further interpretations.

Leadership (Yukl, 2010)	Team Learning (Edmondson, 2002)	
	Reflection	Action
Task Substance		
Planning		
Clarifying Roles and Objectives		
Monitoring		
Relations Substance		
Building and Maintaining Members' Relationships		
Change Substance		
Intellectual Stimulation		
Boundary Spanning		

Table 5: Relations between Leadership and Team Learning

3   Methodology and Design

In this section, I present my case study-oriented research design. According to Yin (2003), the preparation of a detailed research design helps to anticipate possible threats to validity, offering the opportunity to conduct a highly rigorous empirical study. In addition, a research design which has been prepared prior to any data collection makes it more likely that the collected data is logically linked to the study's initial research questions, namely 1) how are leadership activities shared and 2) how do these leadership activities influence team learning?

Hence, in the following subchapters, I discuss, firstly, the most viable methodological choice for my research question by means of juxtaposing different research method characteristics with each other. This leads me to choose case studies as the most appropriate design to answer my research questions. Secondly, I provide a thorough discussion of the decisions made in tailoring the case study method to my research goals. This includes the choice of the unit of analysis, decisions concerning multiple case study design rather than single-case design, the choice of "real-time" case studies rather than retrospective analysis options, as well as a discussion on how I selected the cases. Thirdly, I will review the different data collection methods. Fourthly, after describing the data collection, I will review how the data was analyzed. The final section ends with a discussion on validity and reliability in my case studies and limitations.

3.1   Reasons for a Case Study Approach

After presenting the literature review and resulting two research questions, the following step is to find out how to methodologically approach these research questions. In so doing, I firstly followed a schematic comparison (Hammersley & Gomm, 2000; Yin, 2003) by deciding which kind of research strategy (experiment, survey, archival analysis, history, and case study) best suited the aim of my PhD research. Thus, a schematic comparison of different methodological approaches with six criteria (type of research question, extent of control, degree of focus on contemporary events) is presented in the following.

According to Yin (2003), the first and most important determinant for differentiating among these methodological approaches is to identify (1) the type of research question stated in the project: Basically, researchers differentiate between *"who"*, *"what"*, *"where"*, *"how"* and *"why"* questions (Yin, 2003).

If the research question stresses mainly *"what"* questions, two possibilities emerge: It can be either of an exploratory or a more standardized survey nature. By asking "what" questions, we also ask a form of "how many" or "how much" as well as asking about a specific outcome from a particular setting, such as "what is the outcome of a particular restructuring process?". By answering this kind of questions, survey or archival strategies are the most adequate research strategy. Additionally, *"who"* and *"where"* questions are also favored for survey strategies or the analysis of archival records. "These strategies are advantageous when the research goal is to describe the incidence or prevalence of a phenomenon, or when it is to be predictive about certain outcomes." (Yin, 2003: 6)

In contrast, *"how"* and *"why"* questions are more of an *explanatory character* and favor the use of case study research, histories and experiments. "This is because such questions deal with operational links needing to be traced over time, rather than mere frequencies or incidences." (Yin, 2003: 6)

The second criteria focuses on the investigator's (2) *extent of control over behavioral events*. "In experiments, the researcher *creates* the case(s) studied, whereas case study researchers construct cases out of naturally occurring social situations." (Hammersley & Gomm, 2000: 3) In other words, contrary to *experiments* by which investigators can manipulate behavior directly, systematically and precisely, I was interested in acquiring a rich knowledge of how teams share their leadership and how this affects learning. Therefore, this research did not aim at a manipulation of the team setting within an organization.

Additionally, this PhD research aimed at considering not merely how teams managed to share leadership in the past, but also how teams (3) do this *contemporarily* – which is contradictory to the historical method that deals "with the 'dead' past" (Yin, 2003: 7).

Indeed, recent scholars of shared leadership (Carson et al., 2007; Conger & Pearce, 2003; Day et al., 2004; Yukl, 2010) and team learning (Wilson et al., 2007) have called for longitudinal real-time research methods by observing the teams over time.

With regard to Yin's (2003) argument that case studies are advantageous as a research strategy when "a 'how' or 'why' question is asked about a contemporary set of events over which the investigator has little or no control" (Yin, 2003: 9), I decided that case study research was the appropriate strategy for my PhD investigation.

Additionally, according to Eisenhardt (1995) and Eisenhardt and Graebner (2007), case study research is most appropriate for new, unexplored topic areas. In fact, scholars in the Leadership Quarterly recently assessed shared leadership as follows: "Given the infancy of the shared leadership theory, it is not surprising that this is an issue that requires attention – shared leadership is, after all, still a 'primitive term'" (Pearce et al., 2008: 626). Along the same line, team learning is also assessed as a relatively new research stream: Wilson et al. (2007) in the Academy of Management Review also made much the same point as they asserted that "there has been a growing body of theory and empirical research on group learning, but, as in most early stages of research, definitions of the construct have varied considerably across studies, and there are gaps and ambiguities in these conceptualizations." (Wilson et al., 2007: 1041)

The table below summarizes the main arguments as to why **the case study methodology** has been regarded as the most appropriate research strategy for my PhD research topic on the role of shared leadership in team learning.

Strategy	Form of Research Question	Requires Control of Behavioral Events?	Focuses on Contemporary Events?
Experiment	How, Why?	Yes	Yes
Survey	Who, What, Where, How many, How much?	No	Yes
Archival Analysis	Who, What, Where, How many, How much?	No	Yes/No
History	How ,Why?	No	No
Case Study	**How, Why?** √	**No** √	**Yes** √

Table 6: Case Study Research Methodology as an Appropriate Research Strategy

3.2   Overall Research Design of Case Study Research

3.2.1 Unit of Analysis

The definition of the unit of analysis is regarded as a key element of the research design as decisions of the samples and data collection techniques depend on prior decisions about the appropriate unit of analysis (Patton, 2002; Yin, 2003). According to Yin (2003: 23), "Your tentative definition of the unit of analysis (and therefore of the case) is related to the way you have defined your initial research question."

In this thesis, my attention is on the team as the level of analysis. I analyzed the interactions among team members who made up the whole team. This not only applies to my leadership analysis for the teams, but also to indentifying the occurrence of learning in the studied teams. In contrast, in team learning literature in particular, some of the scholars have investigated individual learning in the team context. However, in accordance with Wilson et al. (2007), it is important whether the team has learnt as a whole, not if the individual learnt in the team context. In their own words: "Some treatments of group learning confuse levels of analysis by not distinguishing 'individual learning in the context of groups' from 'group-level learning'. What we mean by this is that individuals can learn within the context of a group, and their learning may improve

the group's performance, but it is still individual learning unless shared by members of the group. If an individual leaves the group and the group cannot access his or her learning, the group has failed to learn." (Wilson et al., 2007: 1042-1043)

3.2.2 Single vs. Multiple Case Studies

Prior to any data collection, one has to decide whether (1) a *single case* study or *multiple case* studies are best suited to addressing the research question, and (2) whether the case is studied *holistically* (single unit of analysis) or *embedded,* meaning that the same case study involves more than one unit of analysis (Yin, 2003).

A *single case* study design is appropriate when the single case represents a *critical test* of existing well-formulated theory – "the single case can then be used to determine whether a theory's propositions are correct or whether some alternative set of explanations might be more relevant." (Yin, 2003: 40) Additionally, a single case is an appropriate research design when the case represents an *extreme* or *unique* case or, contrary to this, represents a *typical case* that covers circumstances of an everyday or common situation. Moreover, a single case study design is eminently justifiable when the case holds a *revelatory* or a *longitudinal* purpose (Yin, 2003).

Within the single case study design, one has to decide whether to follow either a *holistic* or an *embedded* fine-grained case study approach involving more than one unit of analysis (Yin, 2003). By following an embedded single case study design, these subunits may often add significant room for extensive analysis that may enhance the insight into a single case. However, if one's attention is too much focused on these subunits and the holistic aspect of the case begins to remain out of consideration, the case study itself might shift its orientation (Yin, 2003).

Besides following a single case design, many researchers choose to adapt a multiple case study approach (Yin, 2003). According to Yin (2003), "The evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust." (Yin, 2003: 46) By applying a multiple case design, "…each case serves as a distinct experiment that stands on its own as an analytic unit.

Like a series of related laboratory experiments, multiple cases are discrete experiments that serve as replications, contrasts, and extensions to the emerging theory." (Eisenhardt & Graebner, 2007: 25). Along the same line, Yin (2003) suggests that in designing multiple case studies, the researcher has to carefully select the cases so that they either (a) represent *similar results* (literal replication), or (b) produce *contrasting results* but for predictable causes (theoretical replication).

Within the multiple case study design, Yin (2003) also suggests distinguishing between the holistic and the embedded approach, depending on whether the multiple case study is based on multiple holistic cases, or on multiple embedded cases (different units of analyses). The following diagram represents Yin's (2003) basic types of design for case studies.
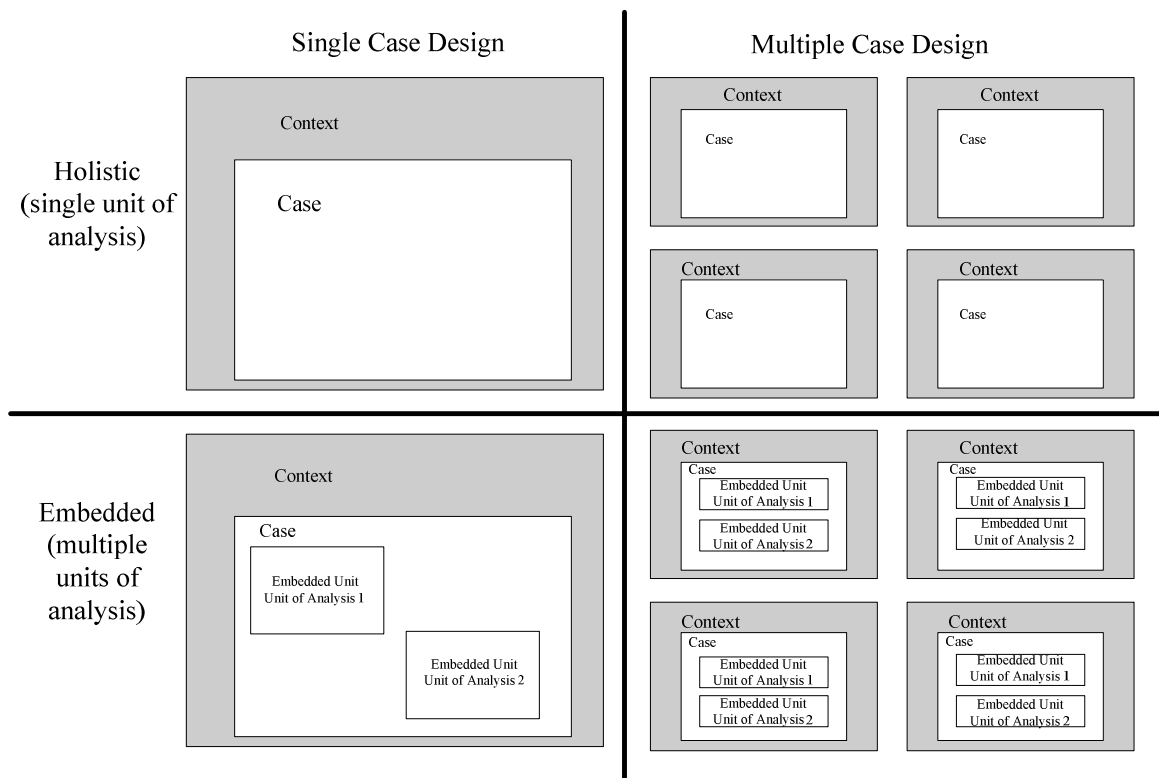
Figure 13: Basic Types of Design for Case Studies (Yin, 2003)

As my interest with this PhD project is to study how different leadership activities are shared in a team and how these leadership activities influence team learning, I am interested in a contemporary phenomenon which is neither a critical test of existing

theory nor a rare or unique situation, and thus, **I chose to go for a multiple case study design in this PhD research.**

Yin (2003) also favors the multiple case study design as he claims, "Even if you can only do a "two-case" case study, your chances of doing a good case study will be better than using a single-case design. Single-case designs are vulnerable because you will have to put 'all your eggs in one basket'. More important, the analytic benefits from having two (or more) cases may be substantial." (Yin, 2003: 53) For this reason, I have followed a multiple-case instead of a single-case study design. This decision also had a positive effect on the external validity of my research project (Leonard-Barton, 1995; Yin, 2003) as I "tested" the emerging "theory" by replicating the findings in a second or even in a third team. Using multiple-case designs, multiple biases such as misjudgment of the representativeness of a single event (Tversky & Kahneman, 1986), or possible observer bias was reduced (Leonard-Barton, 1995).

In accordance with Yin (2003), it has to be decided whether the **multiple-case study** is based on *multiple holistic* cases or on *multiple embedded* cases. As my PhD project aimed to understand how different leadership activities are shared in a team and how they affect team learning, I restricted myself to the team level unit of analysis which called for a **holistic approach** because my study only focused on **one unit of analysis**.

3.2.3 Real-time Case Study Design

Time has been regarded as an important factor when studying teams. Both in literature on shared leadership (Day et al., 2004; Yukl, 2010) and on team learning (Edmondson, 2002; Wilson et al., 2007), scholars stressed the importance of studying the phenomenon over time.

However, the bulk of studies on shared leadership apply the classical input-process-output model of team effectiveness (Hackmann, 1987; McGrath, 1984; Steiner, 1972)[5] by studying input factors that enhance shared leadership which, in turn, are causally associated with effective outcome (e.g. Carson et al., 2007; Mehra et al., 2006). Hence,

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[5] For more information on the IPO and IMOI models, please compare chapter 2.2.2.3 in the literature review.

this approach of studying teams neglects the time dimension. However, recent scholars such as Yukl (2010) and Mathieu et al., (2008) called for longitudinal studies to better understand the emergence and development of shared leadership.

In accordance with the general understanding of viewing shared leadership as an emerging team construct (Day et al., 2004; Pearce et al., 2004; Yukl, 2010), I rather follow the proposed team framework of I-M-O-I (Input, Moderator Output, Input) by Illgen et al. (2005) which differs mainly in the last "I" from the above mentioned traditional team effectiveness model. The new input, incorporating the feedback loop gained from the output, is regarded as crucial in order to understand team developments over time (Illgen et al., 2005). Based on this idea, Day et al. (2004) conceptualize shared leadership as the outcome of the team process comprising teamwork, team learning and team member's input, including each individual's knowledge, skills and abilities. Day et al. (2004) propose that a team leadership cycle is not complete after the first round, but rather that a team's enhanced or decreased leadership capacity serves as an input for the next team leadership cycle phase.

This theoretical shared leadership model by Day et al. (2004) has recently been pointed out as a rich future possibility for studying shared leadership, as Mathieu et al. (2008) claimed in their literature review on teams, "...there are clear opportunities for future research to enrich the theory by taking into account the dynamic, interactive, and temporal elements that underlie Day et al.'s (2004) shared leadership model…" (Mathieu et al., 2008: 451)

Similarly, team learning has often been researched from a quantitative, retrospective approach as well (Edmondson, 1999; Edmondson et al., 2001; Sarin & McDermott, 2003). Here too, scholars have called for more studies over time, for instance Wilson et al. (2007:1043) who recently postulated "learning is a necessarily dynamic construct." These authors refer to the study by Edmondson (2002) as a good way to grasp learning over time, and continue "Edmondson (2002) provides a good example of the kind of observation that can identify implicit learning. By repeatedly observing a senior team over time, she was able to identify learned behavior patterns (e.g. using metaphors to

score philosophical points) that members were not consciously aware of." (Wilson et al., 2007: 1055)

Hence, longitudinal real-time studies have been regarded by recent scholars of team leadership (Day et al., 2004; Mathieu et al., 2008; Yukl, 2010) and of team learning (Edmondson, 2002; Wilson et al., 2007) as the appropriate and fruitful research strategy for exploring shared leadership and team learning.

However, longitudinal research approaches can also be supplemented by retrospective case study methods (Leonard-Barton, 1990). This is especially important against the background of balancing the distinctive tradeoffs each mode inhibits when it is conducted in isolation (Leonard-Barton, 1990). In particular, a dual strategy supported the construct validity of this identified phenomenon. I first observed the teams over a specific period of time and identified the changes and developments in the teams. At the end of the project, I interviewed the team members, asking in a retrospective way about their experience with the team. In doing so, I validated the findings emerging from my observations throughout the project with the team members' statements and assessments of their project experiences at the end of my research stay.

3.2.4 Selecting Cases

As shared leadership is most appropriate for tasks that involve creativity, complexity and interdependence (Pearce, 2004), I chose to explore this phenomenon in three project consulting teams that were faced with complex tasks that called for non-routine approaches. Two teams came from a Spanish business school and were responsible for advising an external medium-sized company, and the third project team was from a German research center.

Gaining access to the observed teams was done in a similar way in all three teams. Through the network of my supervisor Alfons Sauquet, I gained contact to the responsible manager of a student business consulting project in December 2008. This project was for an exchange class of the CEMS program (Community of European Management Schools) on a master's degree level. I met this CEMS business project

manager and explained the purpose and scope of my research to him. He described the structure of the CEMS business project, in particular the competition between three consulting firms, with all three organizations advising the same client, though competing against each other for the best solution. Each consulting company was based on six teams, each with different expertise fields ranging from marketing and business policy to information systems, finance, human resources and operations. At our first encounter, the CEMS business project manager and I agreed to accompany two teams from two different consulting firms. Additionally, we both agreed to accompany teams that were in charge of marketing and business policy, as the manager was additionally the contact person for the teams that were responsible for business policy. Additionally, another lecturer of my acquaintance, who was in charge of marketing, also agreed to support the collaboration with the teams who had been assigned the marketing task.

In February 2009, at the beginning of the CEMS project, the teams had an introductory session with lectures at ESADE for each expertise field. I took this session as the opportunity to introduce myself and the general purpose of my PhD project. I asked teams in the fields of marketing and business policy for their collaboration, indicating that I would need to attend all project meetings and receive their e-mail communication, as well as the participation of each member in an interview after project finalization (cf. Annex 11.2.1). Two teams, one marketing team from consulting 3 and the business policy team from consulting 1, agreed to participate in my PhD research. Each of the two teams consisted of five students who did not know each other beforehand.

The team at the German research center was selected in a similar manner. I received the contact data of a manager in the research center who helped me gain access to teams. For me, it was important not to select a very strict science-oriented research team; on the contrary, in the project task it was necessary for me to be understood as a trained business scholar. For this reason, I agreed with my contact person to liaise with an institute whose interests lay in social science. This gave me the possibility to follow the ideas and insights of the team and the general development of the project. In April 2009, I contacted the head of this research center, explained the purpose of my study, and asked him for his collaboration. He agreed to this and, after asking the team members, proposed the Radar team. This team was responsible for providing consulting work to

the German State concerning the identification of innovative future topics. During my first encounter with this group, I introduced myself briefly and explained to the group members my general interest in researching teams.

Similar to Edmondson's (2002) qualitative study on team learning, this selection of cases produced a convenience sample which satisfied my request to accompany and observe the teams in their project life with subsequent individual interviews after project finalization.

These three studied teams belonged to two main kinds of organizational context. The two student consulting teams were embedded in a temporary student consulting organization that was in charge of advising a medium-sized company on their international expansion strategy and product portfolio. The consulting team of the research center was responsible for advising the ministry on innovative topics which might be interesting for future in-depth studies. Although the teams were from different contexts, they had in common that they were in charge of complex, non-routine and interdependent project tasks.

Other scholars at the group level of analysis have also studied teams from very different kinds of organizations (Gersick, 1988; Harris & Sutton, 1986; Sauquet, 2000) which gave me the theoretical support to do so. Gersick (1988) even argues in favor of observing teams with different project contents and in different organizational settings to enhance the generalizability of her model: "I sought groups that fit into the research domain, but that varied as much as possible in project content and organizational setting. As Harris and Sutton pointed out: "Similarities observed across a diverse sample offer firmer grounding for…propositions [about the constant elements of a model] than constant elements observed in a homogenous sample (1986: 8)." (Gersick, 1988: 12)

3.3   Data Collection

Case study research typically combines different data collection techniques (Eisenhardt, 1995; Marshall & Rossman, 2006; Stake, 2005) with the intention to use many different

sources of evidence, but aimed at corroborating the same phenomenon (Yin, 2003). Patton (2002) defines *the triangulation of data sources* as "checking out the consistency of different data sources within the same method." (Patton, 2002: 559) The data collection in case study research constitutes a unique position when compared to other research strategies such as surveys, experiments, or histories (Yin, 2003). Survey researchers, for instance, rely only on the information gathered through the questionnaire (Yin, 2003). In fact, "the use of multiple sources of evidence in case studies allows an investigator to address a broader range of historical, attitudinal, and behavioral issues." (Yin, 2003: 98)

In my research project, the data was collected by means of several data sources. However, I have put the main emphasis on observations during the project and subsequent interviews with project members after the end of my research stay.

In the following, I describe the data collection techniques I applied to better understand how leadership activities are shared in a team and how these activities influence team learning. The data collection was inspired by recent studies of my research topic, in particular by Edmondson's (2002) observational study. Additionally, as a result of my literature review, I took the lack of qualitative longitudinal studies in the research field of shared leadership (Day et al., 2004; Mathieu et al., 2008; Yukl, 2010) into consideration which also highlight the need for exploratory observational and longitudinal studies.

The data collection methods included the following procedures:
1. Pilot study
2. Document analysis
3. Observation of the teams
4. Researcher journal
5. Interviewing the team members

In the following, each of the five data collection methods is explained in detail by referring to the underlying reasons for choosing this data collection method and the

exact procedure for collecting data. At the end of this subchapter, a table lists the various data sources I referred to for this research.

3.3.1 Pilot Study

The pilot study aimed at finding out 1) the extent to which my research problem can be studied, and 2) the quality of data that could be gathered and accessed.

In October 2008, I started my pilot case study in the 18-month MBA program at ESADE Business School. With the support of my second supervisor, Jordi Trullen, I presented the purpose of my study in brief as well as the possible collaboration with some of the students who worked in teams. I then handed out a list, asking students to fill in their contact details and team projects they were involved in if they were interested in collaboration. To my surprise, more than thirty MBA students showed interest in participating in this research project.

Most of these students named a marketing project as their ongoing team project. To receive the exact group constellations, I contacted the marketing professor at ESADE to obtain the list of group composition and some additional information on the marketing project. Based on this list, I checked the names on the list with the students who showed interest in participating in this study. I did this cross-check to guarantee that I did not only have students from different projects, but that I studied teams in which most of the members had agreed to collaborate in this study.

After having found two teams that met these requirements, I asked the individual members of the two teams for an interview. In this interview, I questioned team members about their experience of working together, their progress in their project and their project management. In these interviews, I found out that their teams were not characterized by a single leader or head of the group, but rather that different team members were engaged in different leadership tasks in these two teams. As I continued with my interviews, I gained knowledge of members' project life experience by interviewing six team members in sum.

This pilot case study helped me to focus my research better. Before this pilot case, the focus was still on leadership and learning; in the pilot case study, however, a new leadership phenomenon emerged, namely that of shared leadership. Having this new concept in mind, I went to one of my supervisors, Alfons Sauquet, and explained to him what I had found out in the MBA project teams. As qualitative researchers, we took this as a chance and expanded my leadership understanding to a rather new perspective, namely that of shared leadership. I went back to my desk to study the literature on distributed and shared leadership and found out that this is a very new and promising research field (Carson et al., 2007; Mathieu et al., 2008; Yukl, 2010) to which I could contribute with my PhD thesis.

In terms of my data collection technique, this pilot case study also showed me how difficult it is to obtain commitment for me to observe the team over its project life. The studied MBA teams often met spontaneously on an as-needed basis during their breaks and forgot to contact me. I had the opportunity to attend three meetings; however, I felt that I was not really welcome, although nobody communicated this to me specifically. I took this as a lesson learnt, namely to be really involved right from the beginning of the project in order to get a better relationship to the teams which would help me to assure consistent contact to the teams for ongoing observations.

3.3.2 Documents

I took also documents as a data collection technique into consideration (Yin, 2003). In all three cases, the contact person for each case provided me with basic background information of the organization and the team. Using documents as a technique provided me with the opportunity to look behind the scenes. Hence, it laid the foundations for gathering information which could not be observed (Patton, 2002).

The CEMS program manager provided me with information concerning the structure of the CEMS program for both student teams, as well as the task of each team, and contextual information about the company to be advised. This helped me to better understand the task the two teams were in charge of. I was additionally given the performance evaluations of the two teams because, especially at the end of the project,

the faculty and representatives of the company needed to assess the performance of the individual teams as well as the overall performance of each consulting company. I received this information and used it to check the assessment of performance against my overall appraisal of the two teams, although this was not related to performance per se, but rather to learning.

Similarly, at the Radar project, I also received from my contact person at the research center an abundance of information material explaining the general culture, structure and financing of the research institute. The official homepage also gave me a good overview of the research center. I also took advantage of the website of this particular research institute in which the Radar team was embedded. All research lines were presented online, including the projects which were being conducted at this particular institute. Additionally, the institute staff were introduced briefly on this website, showing the former career and involved projects of each staff member. This also gave me a good opportunity to get a good overview of the project members of the Radar project whom I observed during my research stay. In addition, it helped me in my interviews to be knowledgeable of the academic backgrounds and previous project experience at this institute. Furthermore, after some time during my research stay, I also received the proposal for this Radar project with which the team I studied had applied to the ministry. In this document, the Radar project was explained in-depth, including each step and milestone for this five-year project. This document was regarded by the institute leader as highly confidential. I interpreted the fact of their handing out this confidential document as a positive sign for honest participation in my research project.

3.3.3 Observations

The main data collection technique was gathering as an unobtrusive *observer* (Marshall & Rossman, 2006) by following in sum *42* project meetings. All meetings were digitally recorded and additionally transcribed. I did the transcription process of the various student team meetings on my own which took a lot of time and effort. However, this transcribing process gave me a very good feeling and understanding of what was going on in the teams. The records of the Radar team's meetings were transcribed by a professional transcription service. The transcripts of the meetings of the three observed

teams additionally allowed me to identify good examples of regular meeting situations or interactions between team members which I then used for further detailed analysis. I additionally took notes during the meetings and always indicated the time that something caught my attention. As the tapes were digitally recorded, I could easily determine the exact moment of this incident and listen to the team situation again. I also took advantage of describing in my field notes aspects related to body language, space and seating arrangements of team members during meetings (Marshall & Rossman, 2006) as this kind of data could not be captured by a recording. After each observed team meeting, I wrote down all my impressions of the meetings, including my field notes taken during the meetings in a research diary, one for each of the three teams. These observed incidents during team meetings additionally provided me with a good basis for knowing when individual interviews were conducted, even after my research stay. I could refer to specific incidents I had observed and could ask team members for their appraisal of this particular situation.

Specifically, I observed *16* team meetings of the student business policy team which were held between February and April 2009 and lasted between one hour and half a day. Such a high amount of observational data was also gathered for the marketing team, in which case I observed *19* team meetings. Contrary to my experience with the pilot case study, these two teams were open for and became used to my physical attendance. Instead, these teams were seriously committed to helping me do my PhD project: These students always copied me in their e-mails and even when talking on skype to arrange their next meetings. This enabled me to follow their projects and attend nearly every meeting. I had to miss some meetings as both of these student team projects were done simultaneously and I needed to decide which one to attend. In such cases, I asked one team mate to review the content and happenings at these missed meetings briefly by e-mail so as not to lose contact and the red line of the project. Additionally, my observations of the student teams were not restricted to the regular meetings. Instead, I joined the teams during their coffee and lunch breaks and even on their way home which, in turn, strengthened my relationships to the teams, and eliminated their anxiety of being observed.

At the Radar team in the German research center, I observed *7* team meetings lasting from two to four hours. I observed all the project team meetings between May and September 2009. Although I always needed to fly from Barcelona to Germany for each meeting, the logistics of attending was made possible for me as the team always planned their upcoming meetings at the previous one. Knowing the meeting dates around two weeks in advance enabled me to attend the Radar project meetings at which I had the opportunity to tape all the discussions and to take field notes which were later entered, together with my thoughts, in the researcher's diary. At this institute, the team members were also very open to being observed. According to the leader of the research institute, this was due to the fact that these team members applied similar qualitative research approaches when studying their topics. As a result, this also helped me to get such an in-depth perspective of the Radar team.

3.3.4 Researcher Diary

As the observational phase of my research started, I created a diary, a written history, for each of the three teams. This diary comprised all the notes and information I had taken in the observed meetings. During the observed meetings, I took notes of many impressions and then reviewed them after each meeting. I wrote down all my notes in the form of a deep narrative description of the team meeting (cf. Annex 11.2.2), ranging among others, from the meeting arrangements to agreed project steps. Moreover, I used each diary to incorporate all the e-mails I received from team members' e-mail communication. In the student teams, I received 82 e-mails from the business policy team, and 239 mails from the marketing team. The number of e-mails I received from the Radar team was much lower in contrast. This might have been due to the fact that, in sum, team members did not send so many e-mails around as they were located close to each other and, additionally, that team members only rarely copied me in their e-mails. I included these e-mails in each team's diary in order to get a chronological order and keep track of the high number of e-mails I received. I also put some photos I had taken at the meetings into these diaries.

After the meetings, I also wrote down my ideas and reflections as regards the research questions I had in mind. At the beginning, I indicated many possible themes that

emerged, but, as the observational phase proceeded, my notes and comments on the team meeting became more reflective and analytical. Altogether, these three diaries provided me with a good basis for recognizing the developments of the three teams and recalling specific incidents that had happened during the teams' life cycles.

3.3.5 Interviews

Conducting interviews is a powerful data collection method in qualitative research (McCraken, 1988). It is targeted and focuses directly on the case study topic (Yin, 2003). For Marshall and Rossman (2006), in-depth interviews are regarded as "conversations with a purpose" in which the researcher explores the field of interest. Additionally, the conducted interviews gave me the opportunity to grasp knowledge that was in the participants' minds, which was particularly significant for those aspects which could not be easily and clearly observed in the team meetings (Patton, 2002). This was especially valuable for the links between shared leadership activities and team learning. Although these links between shared leadership activities and reflection and action emerged during my observational phase, I used the interviews to get an in-depth perspective of what team members thought about it.

I prepared a general interview guide which I presented to my supervisor before conducting the interviews. This guide served as a check-list for my themes of interest in order to ensure that all topics were covered (Patton, 2002). I asked the members of each team to describe their team's development from the beginning to the end of the project, including the team's task, the members' role allocation and problems that arose in the team. I encouraged team members to relate incidents from their daily project life. Additionally, when team members did not refer to examples, I hinted at the ones I had observed in the meeting. This again stimulated the team members to recount stories about their team, instead of answering the questions with a short 'yes' or 'no'.

In total, I conducted 19 interviews, each lasting around 90 minutes. All conducted interviews were digitally taped and transcribed. In the two student teams, I interviewed all five team members of each team. Although I started the interviews directly after project finalization in May 2009, in order to reflect on the interviews and after

conducting a preliminary analysis of the interviews, I timed the remaining ones for the end of May, June and the beginning of July 2009, always having some days and free time between the previous interview. In the Radar team, I had a total of 9 interviews with the team leader and the members. In this case, I started the interviews before instead of after my final observation for logistical reasons. After the fourth observed team meeting, I started the first interview with a team member at the beginning of July 2009. This member told me the history of the team prior to my arrival. After this interview, a guideline similar to the student team interview was applied for the remaining interviews in July, August and September 2009 in order to get members' insights on the team project. When I was visiting the team for observations, I used this research project trip to also conduct one or two interviews with team members of the Radar project.

To sum up, the following table lists the various data I collected for this research project.

Data	Student Team Business Policy / IS	Student Team Marketing / OP	Radar Team
Time window	February - July 2009	February - July 2009	May - September 2009
Documents	Structure of the project and company, performance evaluation of the team	Structure of the project and company, performance evaluation of the team	Webpage of the research center and institute, research proposal for the project
Observations	16 team meetings	19 team meetings	7 team meetings
Researcher Diary	History of the team including photos, e-mails and reflective thoughts	History of the team including photos, e-mails and reflective thoughts	History of the team including photos, e-mails and reflective thoughts
Interviews	5 interviews	5 interviews	9 interviews

Table 7: Data Collected and Triangulation

3.4   Data Analysis

Analyzing the data took a long time. I started this process by developing a preliminary list of themes which I extracted from literature, primarily on themes relating to leadership substance and its proposed activities (Yukl, 2010) and team learning (Edmondson, 2002). I proceeded with the analysis of the data by looking at one team and selecting the interviews which seemed to be rich in the involved data. In doing so, I used this preliminary list of themes as a basic coding schema. Besides the themes which I had extracted from literature, I was also open for new themes which emerged from the data in the spirit of grounded theory (Glaser & Strauss, 1967), adding these to the preliminary list of codes. A sample of the preliminary list is given in the following table. The complete version is listed in the annex (cf. Annex 11.3.1)

<u>Main Theme 2: Team Learning</u>	
Sub-theme:	**2.1 Reflection** 2.1.1 Sharing Information within the team 2.1.2 Seeking feedback 2.1.3 Discussing errors or problems **2.2 Action** 2.2.1 Making a change 2.2.2 Finalizing a plan 2.2.3 Transferring new knowledge to others
<u>Main Theme 3: Links between leadership activities and team learning</u>	
Sub-theme:	**3.1 Task substance and team learning** 3.1.1 Planning and Reflection 3.1.2 Planning and Action

Table 8: Sample of Preliminary List of Codes

The preliminary list was revised after the first round of analyzing one case. I reduced the complexity of the codes by grouping codes which were more or less double. Additionally, through discussions with my advisor during my stay at Columbia University, I slightly changed the markers of reflection and action, as proposed by Edmondson (2002) in order to grasp the interdependence and interactions of learning activities among team members, instead of only looking, for instance, whether information was shared. For this reason, I reframed Edmondson's (2002) markers to the following codes (cf. Annex 11.3.2):

In accordance with recent team learning process conceptualizations (Edmondson, 2002; Gibson & Vermeulen, 2003, Kasl et al., 1997), the reflection included learning behaviors such as seeking help and feedback, giving help and feedback, and reframing. I reframed Edmondson's (2002) proposed markers for this category slightly in order to take the collective character and interactions between team members more into consideration rather than the individual learning activity performed by a single member, for instance through sharing information, as proposed by Edmondson (2002).

The subtheme, action, entailed behaviors that take action based on new insights, therefore decreasing the team's ambiguity (Gibson & Vermeulen, 2003), as well as including behaviors such as codification, transferring new information to others, and making change and improvement. At this stage, I also added a marker for the action category to Edmondson's (2002) model of team learning, namely that of codification, as proposed by Gibson and Vermeulen (2003) in their three categories of the team learning process. In my analysis, the marker codification gave me a good, practical way to observe whether a team managed to come up with very broad ideas for concrete decisions, or action in order to put ideas into practice (Gibson & Vermeulen, 2003).

For the leadership codes, I adopted those proposed by Yukl (2010) categorized into task, relations, and change. Yukl (2010) refers to each leadership substance with specific leadership behaviors which I adopted in order to identify more specific leadership activities for each leadership substance. I coded different kinds of such leadership activities and investigated who, when, and how these different leadership activities had been performed.

After having identified shared leadership activities and team learning occurrence for each team, I identified the links between both concepts (theme 3). I also coded the data in terms of team (theme 4) and team's context (theme 5) (cf. Annex 11.3.2).

First of all, I coded the data manually, then, after having coded the interviews, I used the coding software ATLAS ti 5.0. I uploaded the interviews and transferred my coding into the software. This helped me to have an overview of all my data, thus facilitating my subsequent analysis.

Triangulation was also given in the data analysis. Not only did the data come from different sources (interview, observation, e-mails), but a colleague of mine also coded a selection of interviews.

3.5   Validity and Reliability

Yin (2003) proposes four case study tactics in order to judge the scientific quality. Construct validity, internal validity, external validity and reliability are subsumed under those tests. In the following, I will refer to each one in order to show the quality of this research design.

Construct validity is assured by having used diverse sources of evidence as shown in the former sub-chapter (cf. chapter 3.3). The data collection not only relied on one single type of source. On the contrary, I took data from interviews, observations, e-mails and internal and external documents into consideration. Hence, data triangulation is given through combining these multiple data sources which, in turn, attenuate the threats of construct validity (Yin, 2003). Construct validity was further supported through combining longitudinal and retrospective data collection approaches. By observing the teams over time, I had the chance to derive precise definitions of the constructs, whereas the retrospective approaches via interviews later on gave me the possibility of validating whether the identified relationships between the constructs were consistent with what I had previously observed (Leonard-Barton, 1990).

Internal validity is supported by this research design as I followed a multiple case study approach. Not only did I study shared leadership and its role in team learning in one case, but rather I studied two further teams in which I could directly assess the identified phenomenon. These multiple cases served as the bases for continuously moving backwards and forwards and pattern-matching (Yin, 2003).

External validity "deals with the problem of knowing whether a study's findings are generalizable beyond the immediate case study." (Yin, 2003: 37) In contrast to survey research which aims at statistical generalization, in case study research, one relies on analytical generalization (Yin, 2003). This analytical generalization can be assured when applying "replication logic" in multiple case study design. "A theory must be

tested by replicating the findings in a second or even a third neighborhood where the theory has specified that the same results should occur." (Yin, 2003: 37) In this PhD project, three case studies were conducted. Hence, the requisite for analytical generalizability of these case study findings is given.

The objective of **reliability** is "to be sure that if later investigators followed the same procedures as described by an earlier investigator and conducted the same case study all over again, the later investigator should arrive at the same findings and conclusion." (Yin, 2003: 37) This does not aim to "freeze" the social setting of the case studies (Bryman & Bell, 2003), but rather this means that the researcher should avoid extensive ambiguity in the steps conducted in each case. The best strategy in doing so is to document the conducted research procedures at a very detailed level. In this PhD project, I wrote a detailed diary for each case in which all the information I obtained was documented. In these diaries, I also documented the procedures, i.e. what I did during my research period in each team, beginning at the first encounter with the manager of the student project (cases 1 and 2) and manager of the research institute (case 3), and extending up to my final interviews. After this interview phase of my research project, I came up with a digital database, as suggested by Yin (2003). Using AtlasTi analytical coding software, I incorporated all my digital documents, including transcribed interviews, research diaries with written e-mails and further documents into this software. With the help of this software, all the steps conducted, are documented and traceable, including the coding.

3.6   Limitations

Although this research design took much advice from case study researchers into consideration in order to decrease potential threats for internal and external validity, reliability and validity (Eisenhardt, 1995; Patton, 2002; Yin, 2003), results still show some limitations. These limitations primarily concern the specific methods used for data collection.

One of the limitations come from the fact that I conducted interviews as a data collection technique which, in turn, depends on the honesty of the interviewees

(Marshall & Rossman, 2006). In all three cases, I gained access to the teams via their official supervisors. As far as the student teams were concerned, the lecturers in charge supported me in gaining access to the marketing and business policy teams of the student consulting project. The same is true for the Radar team in which case I asked the institute leader for a team which would be available for my research project. In all three cases, there may have been the possibility that the team members felt the need to answer my questions because it was expected of them, due to my close relation to the team's supervisor. However, this social desirability effect in the interviews with the team members is limited for the following reasons: Firstly, the team members in the student consulting project knew that I did not have any influence on their grades. The same is true for the Radar project where the team members knew that my concern addressed my PhD research project with no consulting output. Secondly, I claimed at the beginning of the project, and also in each interview, that all record keeping was confidential. That is why the interviewees could be assured of confidentiality and be open to me as no information was associated with any names.

A further limitation coming from the interview as a data collection technique is the fact that team members may have forgotten certain aspects in their team life as my questions often referred to events and incidents that lay in the past. However, I could mitigate this limitation of memory and perceptual filters as I often addressed incidents in the interviews that I had already observed during my stay. Whenever team members could not remember such situations, I gave the interviewee a memory aid to recall a particular situation. This, in turn, helped the interviewee to give me an exact account of those incidents. The verity of these stories and the activities involved were additionally tested by asking all the team members the same questions following the interview guideline.

Observation as a data collection technique may also involve limitations. When observing a team, the presence of the observer may make the team members less likely to act spontaneously and hence control their conduct. In other words, team members might be more cautious about their own behavior when being observed. I found this kind of reservation on the part of team members in my pilot case study when I entered the team during an ongoing project. However, in the three cases used for this PhD project, such reservations against my presence were not perceptible. This might be due

to the fact that I got in touch with both student teams just when the project was starting: The team members did not know each other at the beginning of the project and they became used to my attendance similar to that of their team members. The Radar research team did not show any reservation to my attendance either, as most of them were also social scientists who applied qualitative research and were used to such research techniques. In sum, all team members in the three cases were really open towards me and felt very much at ease in my presence.

4   Case 1: The BPIS Student Team

4.1   Introduction

Data providing information for this chapter was collected between spring and summer 2009. The process started in February 2009, when I first made contact with the coordinator of the CEMS business project, a faculty member of ESADE Business School. After explaining the purpose and extent of my research, the coordinator assured me that he would facilitate access to different teams of the business project by 'putting in a good word for me' to the students in the introductory class.

During the first session of the CEMS project at ESADE, the coordinator of this project announced the composition of the three consulting companies and their expertise teams, respectively. I chose to study one of the business policy teams as the project coordinator was tutoring this area and agreed to support me in gaining access to the students. After the general introductory session, all the students were divided into their relevant expertise fields and received a general picture of this field from their corresponding tutors. After this meeting, I went to the business policy team of the first consultancy company in order to ask the team members for their collaboration in my research project. It was agreed that I would attend most of the project meetings taking place throughout the business project, namely from the beginning of February to the end of April 2009. During these meetings, I would tape and take field notes. Additionally, the team agreed to copy me in their e-mail communication and to participate in individual interviews after the end of the business project (cf. Annex 11.2.1).

Thus, the data contained in this chapter is mainly the result of direct observations of project meetings, team members' e-mail communication, individual interviews with team members, client company visits, and archival data. In particular, I had the chance to observe and tape a) 16 project meetings lasting between one hour and half a day, with the average duration of these meetings lying at 90 minutes; b) a one-day client-company visit and two half-day client company presentations (at ESADE). Additionally, I gathered c) 82 e-mails from the communications of these team project members and conducted d) five individual team interviews that lasted around 90 minutes. On the

following pages, the presented data will be explicitly referenced to the source of information (observation of team meeting, interview, e-mails or archival data).

This chapter is organized as follows; firstly, I present an overview of the CEMS business project in which this team is embedded. That is followed by a section that includes a description of the team, its task and effectiveness. Thirdly, I discuss the underlying reasons for its effectiveness by referring to shared leadership and learning. The closing section explains how shared leadership impacts team learning.

4.2   Overview of the Business Project

Academic members of the CEMS community, an alliance of leading European business schools, carry out the so-called CEMS business project for students enrolled in international management. One of these CEMS partners is ESADE Business School. Every year since 2000, ESADE has hosted the CEMS business project which is designed as "real life learning experience for students" (CEMS website) for their own CEMS master students and their CEMS visiting students. The aim of this project is to enable these nearly graduated students to solve real life business problems of an authentic case, namely a company that has asked for consultancy services.

The structure of the business project resembles a business consulting company. In 2009, 81 CEMS students were enrolled at ESADE. These students were divided into 3 main universes with each universe constituting an independent consultancy[6] company. Hence, these three consultancy companies contended with each other to provide the best business solution for their client. The internal structure of each consultancy company was similar and defined by the project coordinator: the structure of each consultancy incorporated six expertise teams, namely business policy, finance, marketing, operations, human resources and information systems. Each expertise team designed by the coordinator consisted of 4-5 team members so that, in turn, each of the three universes could call on 27 international CEMS business students. Additionally, the business project was scheduled in two phases: The first phase was designated for the analysis of the business context, whereas the second phase was for making decisions

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[6] In the following, I will use the words "universe" and "consultancy" interchangeable.

based on results of the previous analysis. After the first and second phase, each consulting company was supposed to present its findings from the analysis and decision phase, respectively. A further structural restriction was specified for each consultancy company: each predefined expertise team changed their expertise field from the analysis phase to the decision phase. This meant, for example, that the team assigned to business policy in the first phase switched to the expertise field of information systems in the second phase.[7] Consequently, the composition of the team with its members stayed the same, although the expertise task changed from the analysis to the decision phase (Source: internal documents from coordinator).

Structure of Consultancy

| Team1 |
| Team 2 |
| Team 3 |
| Team 4 |
| Team 5 |
| Team 6 |

Single Project Team

Project Start:
Beginning of
Feb. 2009

Analysis Phase   **Decision Phase**

Project End:
End of April 2009

Expertise 1   Expertise 2

Presentation of
Findings of
Analysis Phase

Presentation of
Findings of
Decision Phase
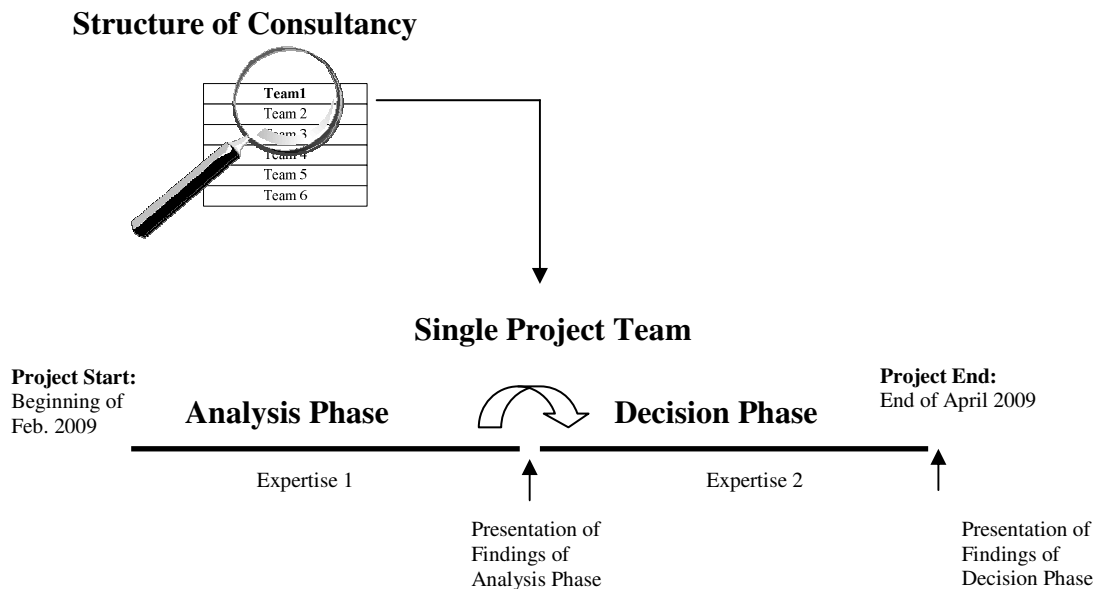
Figure 14: Overview of Business Project

Besides this predetermined structure of the business project with six expertise teams, each consultancy company with its teams possessed autonomy with regards to content. However, each team was supposed to meet a mentor, a specialist in the corresponding expertise field, twice in each phase, in order to present the team's plans and their final presentation before giving it to the representatives of the client company.

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[7] That is why I named this team BPIS team (Business Policy Information System).

4.3   The Client Company

Gimbert[8] is a winery – a producer of cava and wines - located 40 km west of Barcelona within the DO Penedés region of Spain. The origins of cava from this family business go back to 1872, when the first 3000 bottles of cava were produced. Today, the company's product portfolio offers three main categories, namely cavas, white wines and rosé / red wines, with cavas making up 79% of the total sales. Cavas from this family business are highly recognized in the Spanish gastronomy and have won several different Spanish cava awards in recent years. Additionally, a number of "Michelin stars" awarded by Spain's top gastronomes listed the Gimbert products in their menus (Presentation Gimbert II, February, 2009).

During the past years, the main target market for Gimbert has been Spain. Additionally, highest priority was given, among others, to the values of *"family, tradition, pioneers, highest quality, professionalism, dynamic, trustiness"* (Presentation Gimbert, February, 2009). Although these values have led to successful business in the last couple of years, Gimbert have recently tried to reposition the company as a more internationally oriented enterprise. Reasons for this purposeful internationalization strategy were, for instance, their business differentiation to other local wineries and a decrease of cava consumption in Spain.

4.4   The Client's Need for Change

At the beginning of February 2009, the representatives of the winery Gimbert approached the three CEMS consultancy companies in the CEMS business project to advise the winery Gimbert in their internationalization plans. One of the corporate managers presented the vision of the new company, namely *"To become an internationally prestigious winemaker brand"* (Presentation Gimbert II, February, 2009). In particular, Gimbert aimed at increasing international sales from 16% in 2008 to 40% in 2012. Hence, the representatives pointed to the importance of this targeted increase in international sales having to be in accordance with their highly recognized reputation of their products. In particular, the representatives of Gimbert aspired to *"become the Brand of reference among prestige cavas and wines from Do Penedés,*

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[8] Gimbert is a pseudonym for the actual winery.

*showing the personality of every wine, across the integration "soil-vines-wine-cava"
with a professional and competitive organization, to achieve the satisfaction of our
consumers, customers and distributors."* (Presentation Gimbert II, February, 2009)

The representatives of Gimbert requested each consultancy company to find and finally
present ways to achieve this internationalization goal. Additionally, the managers
highlighted more specific points for each expertise team which were to be taken into
consideration by each team (Presentation Gimbert II, February, 2009):

- General objective / Business Policy: Increase international sales from 16% in
  2008 to 40% in 2012; revise Gimbert's standing to an international level
- Marketing: Revise the positioning and the communication of Gimbert's values
  in the global market
- Information systems: Analyze the entry and treatment of information – web,
  navision, excel
- Human Resources: Dimension the export department
- Operations: Outline a more adequate traceability system - from the vineyard to
  the final client
- Finance: Analyze the costs for the products

4.5   Team's Objective and Context

The team observed in this case study consisted of five international students who were
in their mid twenties. Marie[9] and Angelina were both home university students at
ESADE, though from different programs, whereas Ina, Mathias and Marcus were
enrolled as visiting CEMS students from different universities. *"We did not know each
other at the beginning,"* (Interview: Mathias) stated one of the team members, referring
to his first encounter with his team mates during the introductory session for business
policy expertise teams, the first expertise field in which this team was involved in.

In this session, the mentor reinforced the client company's already communicated long-
term goal, namely to *"increase international sales from 16% in 2008 to 40% in 2012*

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[9] Team members' names are pseudonyms for their actual first names

and to revise the standing of Gimbert at the international level" (Presentation, Gimbert). The mentor highlighted the importance to the team to analyze methods for Gimbert to achieve this targeted internationalization strategy. According to Marie's own words, *"We had to basically see what was going on in the company, what was going on in the market. Not to take any strategic decisions but only present the situation. … So, we had to look at the mission, the vision of the company, their past goals and what they did in the past, how they went, and also how the market was doing in the different countries. To just analyze, see what where the possibilities are."* (Interview: Marie) Hence, the challenge the team was confronted with during this project phase was to present an analysis of Gimbert's business in such an innovative approach that the management would never have conceived. The analytical tools for doing this were basically known; the difficulty for this team was, however, to gather relevant information, to compare and present it in a highly creative and comprehensive way in order to infer new internationalization approaches for the client (Researcher's Diary).

Midway through the CEMS business project, this team switched from the analysis phase of business policy to the decision phase of information systems. That is why I named this team BPIS. Due to this, only the team's task changed while the membership remained the same. Up to that time, the client company had neglected the role of information systems; Gimbert's management had only implemented basic IS systems which were, however, mostly outdated by then. Therefore, according to Marie's own words, the team's task goal was to show *"The strategic advantage of IS for the company, really communicate to them the importance of IS and show them that they can really have a competitive advantage thanks to IS."* (Interview: Marie) Based on the analysis report of the previous IS team, this team had to take decisions on what kind of information systems to implement in the near future. The major difficulty of the team was, however, to become acquainted with this expertise field by acquiring all the basic IS knowledge needed to understand this task. *"...it was really a big challenge because I didn't know anything about IS, I have never worked in that sector, so it was really hard… I wasn't and I am not an expert, but now I know something more, but when I knew that I had to do IS I was totally lost. I didn't know anything about IS, how it works, so it was really demanding, the first part of the second phase was really demanding for me personally because I really had to look up information."* (Interview:

Angelina) Additionally, in this decision phase, the team was expected to deliver a customized IS map, including the type of systems, the costs, when and how to implement these different systems. This customized information was not easily accessible for the team so that, after they were faced with having to acquire the IS knowledge and skills, team members also experienced difficulties in detecting more customized IS information for Gimbert.

The team tasks were defined by the broader context. The client company constituted the first context dimension as Gimbert's needs to increase international sales led to their asking the CEMS business consultancies for their services. Thus, in both phases, the overall objective of the team was shaped by the client company which, in turn, was reinforced by each tutor who gave the team some general guidelines and feedback on the corresponding expertise area. However, it is important to note that both mentors granted high autonomy to the team by stating for example in feedback meetings "*That is your project. You as a team have to decide what you want to do. It is up to you*" (Researcher Diary). Consequently, the team's overall goal was set by its context, but how the overall goal was to be achieved lay within the team's scope for development.

A further context dimension that impacted the team's task was displayed by the consultancy organization in itself with its six expertise teams. Each expertise teams was supposed to support and to keep track of the main internationalization strategy. Hence, a strong collaboration was aimed at especially with the business policy team, but also among the other expertise teams.

To keep track of the main business strategy, all members of this consultancy organization decided to define a representative for each expertise team: This fact impacted the role allocation in each team to a certain extent. The team I observed appointed Angelina for this role. According to her own words "*We [the universe] thought that the representative was supposed to be the person in charge of maintaining the communication and the coordination among the different teams. So I proposed myself… I really enjoyed that because I like to, not to be the leader because it's not about being a leader in this case, but just to coordinate and to motivate my team, I like doing that.*" (Interview: Angelina) The idea of defining a representative was for these

six specific members to meet on a regular basis to enhance the communication between the expertise groups and to adapt each team's work to the main direction of the business strategy and, in turn, to inform and update the respective team on the progress of the holistic project. However, in the observed team all its members attended these representative meetings, as Angelina explained: *"In fact, from the other teams nobody came; generally there were just the representatives, but from my team, that's why I am really happy because even if it was not necessary they spontaneously say, yes, I am coming with you to the representative meeting just to see how the situation is going, how the situation is developing, how the overall project is going, what's the workload or the general development achieved by the other teams. And that was good, but that was done voluntarily, I mean, they could have clearly skipped the meeting if they wanted, they were not obliged to come but they came and I was really proud of that."* (Interview: Angelina)

4.6   The Project Team Meeting

From February to the end of April 2009, I observed and taped 16 team meetings. These meetings were usually held in quiet group study areas at ESADE and some were also held in a pre-reserved room on the ESADE campus. From time to time, this team also met at a coffee house located in the city centre of Barcelona, to reduce the members' traveling time whenever the team members did not have other obligations at ESADE.

The team meetings were usually attended by most of the five team members. From time to time, some members did not participate due to personal or other student project commitments, but this was only rarely the case. According to Mathias, the team *"…met on a regular basis, and most of the time, all were present. There was nobody in the team who stuck out and never would have time [to meet]."* (Interview: Mathias) Ina also pointed out that in the case of members' being absence from team meetings, the others were appreciative of the lack of absenteeism in the course of the project. In her own words, she stated: *"I liked to go to the meetings. Yes, and in case that I could not attend, there was no huff, nobody felt cheated in the sense that he or she would have to work more."* (Interview: Ina)

The atmosphere of the team was enjoyable, though with the clear purpose to proceed in the project. *"I was always happy to meet. It was happy to be there and I knew that every time we were meeting it was for something good"* (Interview: Marie) stated Marie. At the beginning of the meetings, which usually started on time, the team members briefly engaged in non-project-related talk, but quickly switched the topic to project-related discussions (Researcher Diary), as described by one member *"When we started the meetings we were doing a bit of talk at the beginning that was not necessary on the topic. We were talking a bit around, then we said okay now let us focus and let us do this [our project]."* (Interview: Angelina)

In team meetings, this clear focus on project discussions was supported by a pre-established meeting agenda, *"When we met we were really addressing the topics and the issues of the day. Every time we had kind of an agenda, but it was already pre-established, so we knew that the next meeting we had to deal with that problem."* (Interview: Angelina) Before each meeting, one of the team members sent an e-mail to all including points that needed to be discussed at the following meetings. The following extract of an e-mail exemplifies this clear focus on project tasks at meetings *"As we have arranged today, our team is going to meet ….Remember that for this meeting everybody is supposed to have read the report from the previous IS team and to be ready to discuss the working plan that we need to present…"* (E-mail: 16.03.2009). Along the same line, by looking in the meetings attended, project discussions often started with the question *"What is the agenda of this meeting?"* (Observation of team meeting: 23.03.2009) The main reference points for the next agenda were usually discussed in advance, at the end of the previous meeting by clearly defining each member's duties, *"We need to decide what we will deliver for next meeting!"* (Observation of team meeting 11.02.2009), and one of the team members was appointed for planning the next duties for the following meeting. Hence, meetings were usually scheduled on a meeting-to-meeting basis. Additionally, some of the meetings attended were also called ad-hoc, when team members had experienced problems in their respective subtask and needed to talk about them to their mates. One of the team-mates remembered such a situation and stated the following: *"Guys, [I] have an important problem, I have an important question, I have a problem with this and I need to coordinate with you on this, just please help me, just schedule a meeting; and we did*

that because we knew more or less the time that we were going to be at university."
(Interview: Angelina)

4.7   Team's Effectiveness

BPIS team was regarded by their peers in the universe as a well-performing team. Even some *"were very jealous"* (Interview: Marie) that one team mate was part of such a good group. Also, according to the team's self- assessment and external evaluation from all members of consulting company 1 and team's tutors, this BPIS team appeared to outperform the other teams in the business project. Particularly the internal and external assessment of team effectiveness (Hackman, 1987) showed a high rate of satisfaction with regard to the team's task output, team experience, and a maintained and increased capability to work as a team together in future.

In the interviews, team members showed a high degree of **satisfaction in the quality of the final team project outcome**. In Marcus's own words, *"I thought that I was working with the best team in the universe because we were doing well and we always delivered it [project results] on time."* (Interview: Marcus) Angelina also showed herself satisfied with the team members' performance of tasks. *"Yes, 100% [satisfied]. It couldn't have been done better, they really did everything, their task was fulfilled and even more because they didn't limit themselves just to what they were asked for"* (Interview: Angelina) responded Angelina when I asked her to assess team performance. Along the same lines, the two mentors of the corresponding expertise team also appraised the final team output quality as good. Further evidence for the team's good task effectiveness is based upon the evaluation of expertise groups within the whole universe. At the end of the project, all the universe 1 members were asked to evaluate the expertise teams. The BPIS team was assessed as the second best performing expertise team, ranking just behind the first group (internal information / evaluation received from project coordinator).

Team members also showed a very high degree of **satisfaction with this team experience** over the course of the team project. Angelina even felt enthusiastic when thinking back to her team. In her own words, *"I think it's very clear, I am really*

satisfied with my team. I couldn't ask for anything more, I am really enthusiastic, we had a great experience, we did a good job." (Interview: Angelina) In a slightly different way, Marie also showed satisfaction with her team experience, she even took pride in being part of this team, as she stated, *"I was always proud of being a member of this group because it is really good; we were regarded very well and - listening to what other people had done and the progress we made - I think that made me very proud in the sense that I could really see that they were working hard, and then I could only be happy to be part of the group."* (Interview: Marie) Ina likewise experienced an increase of value through teamwork, comparing the benefits of collective teamwork to the sum of the individual members' work by stating, *"I really enjoyed attending all the meetings...the team creates more than the sum of individual tasks - a problem shared is a problem halved."* (Interview: Ina) Moreover, team members could well imagine **doing further work together on a team project,** constituting an additional indicator for team effectiveness (Hackman, 1987). One of the members stated, *"Yeah, sure, definitely. I think it was a really productive team and for me, if I get a working team like my present team, awesome really, because it was the best."* (Interview: Marie)

4.8   Factors Enabling Team's Effectiveness

According to internal and external evaluation, this team was characterized by highly effective functioning. Yet at this point the question arises as to how the team could achieve such performance levels. Data reveals that an answer to this question has to be grounded in more than one single factor, namely in leadership and learning.

The team member's statement, *"a problem shared is a problem halved"* (Interview: Ina), exemplified the behavioral pattern of this team. Issued were solved collectively in the team, not left to one single superior member who is supposed to deliver a project. For example, after receiving feedback from the tutor on their initial presentation shortly before the analysis presentation, this team needed to reframe its presentation. Indeed, this team collectively solved the emerging problem, as Ina explained, *"We discussed everything, we worked closely together, we brainstormed and - due to the fact that we really got together and did not simply divide the parts and say 'everybody goes home and does it individually and sends it back' - no, we spent a lot of time together on*

revising the presentation." (Interview: Ina) This example shows that no single team member always came up with big decisions and solutions, respectively, to overcome the team's problem. On the contrary, according to Marie, *"All the time, we were all deciding the goals all the time."* (Interview: Marie)

This was not only the case with the project task itself. At the meetings, I observed that team members collectively engaged in the team's management beyond a pure task perspective. Team members naturally emerged as co-leaders in those areas where each member was most knowledgeable and comfortable in. *"…Every member was contributing to leading in his or her own way."* (Interview: Angelina) For instance, one of the team members said about herself, *"Personally, I really need to see where everything fits in and if we are going the right way and to be sure that everybody understands"* (Interview: Marie); or another member acknowledged that she was the *"Critical activator"* (Interview Ina) of the team. Still another member characterized herself as the *"coordinator"* (Interview: Angelina) of the group, or described herself as being *the "HR person"* (Interview: Marie) in the team.

As team members together made progress in the project the individual members' commitment to the project rose. They felt dedicated to complex tasks, and spent a considerable amount of time reflecting together on the team's project. *"I was always happy to be there and I knew that every time we were meeting it was for something good. So maybe we were not that efficient in all the meetings because there were lots of slow discussions going on around the same topic, but I think that is what it takes to get a good group, and that is actually a price you have to pay…"* (Interview Marie)

The team's shared responsibility for its management motivated the members to collectively keep working through challenging tasks, to seek for each other's feedback and hence to help each other as best as they could. *"I think that we were all motivated to motivate each other. I do not know if it is the right thing, but we were motivated to motivate others and that would motivate us even more. So, it was thanks to the group's cohesion."* (Interview: Marie)

This resulted in an increase in the members' team task knowledge and learning, respectively, *"We are becoming experts, do you realize that?"* (Observation of team meeting: 22.04.2009), stated one of the team members at the end of an observed team meeting, exemplifying the team's creation of knowledge in this particular field. In the course of the project, it seemed that an increase in the team's shared leadership capacity was equivalent to an enhancement of team learning. Details of how shared leadership activities influenced team learning will, however, be the subject of following discussion. Before introducing a detailed analysis of the relationships between shared leadership and team learning, I will first of all analyze the nature of shared leadership. In doing so, I apply Yukl's (2010) leadership understanding, including leadership activities related to the task, relation and change dimension.

4.9   Nature of Shared Leadership

4.9.1 Leadership Substance: Task

4.9.1.1 Planning

As discussed at the beginning of this chapter, the team was asked to advise the winery Gimbert in its internationalization proposals. Hence, the team's overall long-term goal was given and set by the client. The team's responsibility, however, was to come up with solutions for achieving this internationalization as a long-term goal. At the beginning of each phase, after each member had looked through all the distributed documents, the team members came together to first of all grasp their task objective as the basis for planning their work activities. In both phases, this seemed challenging to the team members due to their lack of experience in these fields. At one of the observed meetings, at the beginning of the IS decision phase, members were making sense of client's needs which, in turn, allowed for planning their further steps:

Angelina: "So just declare it with what's our objective?"
Marie: "In this reading here it states that the objective is to do a plan of systems, and then implement it. So we have to have it here, plan of IT systems and then implement it."

Ina: "Okay, I don't understand what you mean by implementation. How concrete does he want this, for example, do you think they want the consulting?"

Angelina: "That's us."

Ina: "Yeah, but no, I mean them, they want someone to consultant with on IS? Do we have to find, like, three different possible partners or –?"

Marie: "No, but I think that is the role that we are taking on. We are in consulting now."

Mathias: "And we have to say who is actually installing it, who is taking up the maintenance?

….."

Marie: "The objectives it's also – it's written that it's very important that we communicate so that they know and understand every system, what it is for and how does it increase efficiency. Because they really say that they are not, Gimbert is not at all concerned about IS, they don't care about it, they think it has nothing to do with their business. So we have to take this into the objective. We have to stick with the fact that is it not an IS company, so we have to – everything we communicate we have to make very simple and clear, what it is for, explain it so that they see we really understood it and that it's really to increase efficiency."

Angelina: "Yeah, we have to let them know that this is really useful, this is really important; what are the actual, you know, what is the advantage, we should have to get it done."

Marie: "Okay, we need to actualize Navision, that was one thing."

Angelina: "Wait, this is not an objective though."

Marie:" No? That is not an objective?"

Angelina: "No, because you are talking about the solutions for achieving it!"

(Observation of team meting: 18.03. 2009)

This piece of dialogue between team members exemplifies the collective sense-making of pre-established team goals. Through collective discussions, by stating everyone's idea of the project target, team members aimed to, *"Clarify our understanding of the task, whether we have all the same picture of it,"* as stated by one team member (Interview: Mathias). Based on this common understanding of the project assignment, the team members started to debate what solutions existed in terms of IS to meet these

objectives. *"We did this meeting and we discussed, we brainstormed and then … we saw exactly which parts were coming up."* (Interview: Marie) For each of these emerging parts, the team members shared their initial ideas, understanding and concerns about IT application systems and whether or not to take these systems into further consideration. The following piece of dialogue exemplifies this interplay of planning their work activities in terms of what had to be done, as well as collective debating on the importance and relevance of this specific system in order to achieve the project target.

Ina: "Okay, so what else? We have Navision, the website.."

Angelina: "Microsoft XP"

Mathias: "RFID maybe"

Angelina: "That's really expensive. – Yes, we have to address the problem of traceability. Are we going to do something with that, or…?"

Marie: "Yeah, the thing is that's really expensive".

Mathias: "How important is it for Gimbert?"

Ina: "I think, actually, when it comes to internationalization depending what way of distribution they choose, but it could be even more an issue then to trace back."

Mathias: "But in the end, why do they need it? What do they want it for?"

(Observation: 18.03. 2009)

Similar to this extract of dialogue, team members planned and decided on future information systems by running through and debating each possible solution for achieving the team's overall long-term goal. This step of collective planning and deciding was regarded as crucial by the team members in order to gain everybody's commitment to the project, as Marie said, *"So, once we all agreed on something we were definitely sure that everybody was committed to that decision. So, I think that is why we did not have so many problems."* (Interview: Marie) Based on these agreed potential solutions, the team members chose subtasks in which they were most knowledgeable. At the meetings observed, Angelina stated, after the team had listed the topics, *"If somebody is more comfortable with something, this is the time to say it!"* (Observation: 18.03.2010: 21) After distributing the subtasks to each member, Angelina again showed high concern for everyone's satisfaction with the project outline. One of

the members had this situation in mind, *"When we decided something, she [*Angelina*]* *was, "Are you all okay with this? Are you sure you want to do this?"* (Interview: Marie) After the distribution of subtasks to the team members, the team agreed to follow a uniform procedure on how to analyze the information systems in more detail. *"In the second part, we agreed that each part should address certain issues. So we agreed before that each part should satisfy certain criteria."* (Interview: Angelina)

After the members had decided where to focus, Ina often pushed the team to define clear deadlines for delivering and sharing each other's subtasks. At one of the meetings at the beginning of the first phase, Ina said, *"So, how should we proceed in general, I think we should do a timeline! I think it is better if we set a schedule!"* (Observation of team meeting: 11.02. 2009) In a similar vein, during the observed IS meeting referred to above, Ina also proposed milestones for when to deliver the subtask to the others, as she stated in the meeting, *"What would you think of 29th of March, if we would be ready with having the different project, costs, resources, time, etc., then we could draw this communication map."* (Observation of team meeting: 18.03.2009)

All in all, this team shared its planning activities in terms of deciding what to do, how to do it, who would do it and when it would be done by. There was no single member who individually planned and decided where to go and what to focus on in the project. On the contrary, as one team member stated, *"Every decision we took was made as a group decision. So, each of us, we did our task individually, but it was only operational. It was not about thinking how we should do the project."* (Interview: Marie) Indeed, team members individually stated that planning activities needed to be distributed in order to receive the commitment of the others to their respective project task. In Marie's own words, *"I think that the more strategic side of leadership must be shared so that everybody agrees with it."* (Interview: Marie)

4.9.1.2   Clarifying, Reminding and Coordinating Team's Objectives

These collectively agreed team working goals and plans were reinforced through one team member who took over the leadership role of clarifying team's goals. *"All the time we were all deciding together the goals all the time. Because she was only reminding us*

of them [the goals]" (Interview: Marie) In so doing, Angelina communicated already agreed plans and role expectations to the group at meetings and via e-mails. At the end of the meetings, Angelina briefly summarized each one's responsibility in the team project and, at the same time asked members about their satisfaction with the division of tasks. Usually, after the meeting, Angelina sent an e-mail to all the members with the minutes of the meeting, clearly specifying each member's duties.

Besides this reinforcement of agreed team members' duties, she also kept an overview of the whole team project. She reminded team members of what they were expected to fulfill in the team's assignment. For instance, at the beginning of the first phase, Angelina brought to the members' attention that they had to come up with some specific questions for a meeting with the representatives of their client. She sent the following e-mail to all members: *"Hello guys!!! Tomorrow we have the meeting with the company and, as the tutor has already explained us in our first meeting, we are supposed to present our question to Gimbert in advance. Could you please send me all your questions so that I can put them together and send them before tonight hopefully?"* (E-mail communication: 25.02.2009) Angelina was regarded by her mates as the *"coordinator"* (Interview: Ina) of the team who, *"…put things together and kept track of things."* (Interview Mathias) Even team members asked her how subprojects were linked to the achievement of the team goal. In one e-mail, for instance, Ina requested Angelina to clarify the project status quo, characterizing Angelina's role: *"....have we touched these points? If I missed that I want to apologize, but I kind of lost the overview on who does what. Angelina, could you please send us a list where this is clearly defined?"* (E-mail: 01.03.2009)

At times when Angelina was not present at team meetings, Marie stepped into the breach by engaging in this leadership role. From time to time over the course of the project, she also sporadically engaged in some additional clarifying behavior in terms of summarizing and repeating discussion points during team meetings. For example, when Marie realized that Angelina would not be available to meet during the Easter break, she took over the responsibility of arranging a group meeting with her teammates. At the end of this meeting, Marie summarized what had been collectively agreed upon and said, *"I will send an e-mail to Ina and Angelina what we just said to clarify what was*

said in the meeting and that we want to…" (Observation: 17.04.2009). In her following e-mail, she clearly defined team members' duties which the three members had determined in the meeting.

Yet Angelina was usually the one who took charge of communicating the already agreed team plans and members' role expectations. She took over the role within the team to support clarification to the team of work activities in terms of what had to be done. According to Marie, *"Everybody understood what they needed to do, there were no misunderstandings, meaning that somebody maybe did something and then everybody was, 'No, this is not what you were supposed to do'."* (Interview: Marie) According to Marie, however, this role should not be shared among all the members. As in this team, a single team member was to be in charge of this role so that this function would not sink into oblivion. In her own words, *"I think it is better when it is always cohesion and shared leadership. But I think that it is also important that there is a person responsible for some things, like Angelina, she was responsible for sending e-mails, …and I think these operational leadership things do not have to be shared. They really have to be taken care of by someone."* (Interview: Marie)

4.9.1.3 Monitoring

This team collectively gathered information on the team's progress and the development of subtasks. At the beginning of project meetings, team members often updated each other on the status quo and on emerging difficulties they experienced in their subprojects. One team member described this collective supervision of project progress as follows, *"… in the end we were really controlling the different tasks of each single person and we were making progress in the general development of each task for each individual part of the project, and that was really good because in this way you clearly see that everybody is working, everybody is looking actively for information and everybody is involved…"* (Interview: Angelina) Even this update of members' progress in subprojects was additionally encouraged through specifically asking each other about the status of the others' work, as exemplified by Mathias' inquiry to Marie, *"How is your part going?"* (Observation: 17.04.2009). This collective monitoring in the form of reviewing each others' action seemed to motivate the group members since the

members knew that everybody was actively participating in each part from the viewpoint of the team's progress. In Angelina's own words, *"… and that was the best thing because, I mean, if you know that you are not the only one that is working and you are putting effort within the project, you work a little easier because you feel satisfied, you feel motivated, you see that the people around you are responsible, that they care about what we are doing and so it's much easier, I mean, it just makes it easy."* (Interview: Angelina)

Yet no individual members of the group experienced the need to check the individual state of readiness for work, on the contrary, *"No one wanted to…not deliver, like, good work, not to fulfill the expectations of the others"* (Interview: Marcus). Indeed, members ascertained in interviews that group pressure among one another led to the fact that all the members delivered their parts on time, as described by the following statement: *"There was, if you want to say, a kind of monitoring or checking mechanism, but it was totally informal. It was just by group pressure, not that they needed to have a leader or somebody pointing at a person saying you are not working."* (Interview: Angelina)

As this team approached the mid to end of each expertise phase, the team members also reviewed the progress of the whole team project, including the interconnections between all the members' subprojects and the comparison of the team's actual performance to their requirements. Besides this collective monitoring observed at the meetings, single members also reviewed the whole project in order to detect possible discrepancies to external expectations. At that time, Ina, for instance, compared the team's actual performance with their external set goals and sent the following e-mail to her mates: *"I briefly went through our mentor's fact sheet about objectives, and I am not sure if we touched all the points we wanted with the current work distribution."* In her e-mail, Ina listed those points which, in her opinion, were still not covered and went on, *"Have we touched these points?"* (E-mail: 01.03.2009)

Hence, this team did not need a single superior who admonished members. Team members collectively kept an eye on each other's work as well as on the overall team performance.

4.9.2 Leadership Substance: Relations

4.9.2.1 Building and Maintaining Members' Relationships

Building interpersonal relationships between members was mainly encouraged by one single team member at the beginning of their project. In the words of one team mate, *"Angelina kept the team together… she was the one who contributed that we had a good group climate, that we built up a friendship between each of us. She is really good in building up these kinds of relations."* (Interview Mathias) In a similar vein, Marcus admitted that, *"Dealing with people I think she [Angelina] was great.*" (Interview: Marcus) Building relationships between members was especially important as team members were not acquainted with each other prior to project start. Before the team meetings started, Angelina stimulated non-project-related discussions in order to get to know each other better, as explained by one team member: *"She did a lot of work in getting to know each other so that when we start the meetings we were doing a bit of talk at the beginning that is not necessary to the topic. We were talking a bit around, then we said okay now let us focus and let us do this. And I think that this talk at the beginning helped us to create the cohesion."* (Interview: Marie) Additionally, Angelina was the one who encouraged team members to meet for social activities, she was, *"…organizing: let us go for lunch, let us go party, let us see our friends together and all that. She was really the HR person…"* (Interview: Marie) in this team.

These leadership activities resulted in a friendly, cohesive and trustworthy team environment. Hence, members felt identified with a joint project and did not struggle through the project as lone fighters. On the contrary, for Marie, trust between members was important to this collective project thinking, as she stated, *"I think there was 100% trust, because when somebody said, 'I can do this,' nobody doubted that he or she could do it. And there was no, 'This is my part so, I want to show in the report that I did this'. No, everybody was sharing the information and we did not really care about which part was from whom once we put everything together. We shared all the work. There was no merit fragmented. It was a group merit."* (Interview: Marie) One of the members even claimed that, due to Angelina's initial relationship building activities among team members, members agreed on common team values, as Marie stated, *"Because of her [Angelina] we had our own little group culture… I think it was things like respect, and*

we had our values. We had integrity and respect and also openness and real communication." (Interview: Marie)

The team's interpersonal relationships were additionally maintained by Angelina's supporting and caring behavior. She was the one in the team who also behaved very considerately to members and looked after team members' interests. One of the members described her as follows: *"She was a lot listening, observing. She was very concerned about what the people were comfortable in doing or not, all the time."* (Interview: Marie) For instance, before the division of individual subtasks in the IS task, Angelina stated in the meeting: *"If someone is more comfortable with something, this is the time to say it!"* (Observation of team meeting: 18.03.2009) This extraordinarily considerate behavior towards the rest of the group was also acknowledged by Marie: *"When we decided something she [Angelina] was, 'Are you all okay with this? Are you sure you want to do this?' And she was really good in that."* (Interview: Marie)

In the course of the team project, other team members also started to engage in highly supportive behavior towards each other and therefore adopted Angelina's style. For instance, members offered to take over other members' work in order to unburden individual members. Here, Marie volunteered Angelina in her e-mail *"Please send me some more slides to change, Angelina, so that you finish earlier!!!"* (E-mail: 06.03.2009). The basis of this highly cooperative and trustful team climate was, however, built by Angelina; the others complemented this through their friendly and considerate behavior in such a supportive climate. In Ina's own words, *"I think the whole team was really constructive. Yes, and also productive. But I think this constructive environment was mainly forced by her [Angelina]. Yeah, we had this team spirit, especially in the second phase!"*(Interview: Ina)

4.9.2.2   Facilitating Resolution of Tensions in the Team

Interpersonal relationships between team members were also maintained through a proactive management of rising tensions in this team. One of the members stated, *"If we had an important issue, we discussed that in the meeting. Marcus, for example, he did*

not now how to tackle his problem. And then we approached it together." (Interview: Mathias)

Mathias referred to a situation in which a conflict would have arisen if the team had not proactively resolved this issue: Namely, after the first phase, each team member was asked by the CEMS program to evaluate each other. Besides the collective team evaluation, conducted by the client company and the mentor, all the team members openly received each others' peer assessment. Marcus polled badly in this peer evaluation in comparison to his mates. In response to this, Angelina raised this difference in peer evaluation at one of the team meetings and stated, *"Talking about the feedback, I think – because I think that his [Marcus's] feedback is not fair! This grade is too low. I personally think…"* (Observation of team meeting: 23.03.2009) Hence, the team started to collectively discuss this difference in peer evaluation, as one team member recalled, *"We all had the need to talk about this as we all were really satisfied with our team and we had a good group feeling and, therefore, we did not support that one member was graded lower."* (Interview: Mathias) They decided to recommend the mentor to adjust Marcus's individual grade in order to facilitate a resolution of this issue. Angelina sent an e-mail to the team's tutor, including the following, *"We discussed the individual performance in our group meeting and felt that Marcus's individual grade did not reflect our overall impression. If the grade reflects the peer evaluation only, we would be very glad to get the opportunity to revise it. I am forwarding you this request on behalf of the entire team."* (E-mail: 14.03.2009)

During the interviews, team members highlighted how important it was for the entire team to have sorted out this problem. In the words of one member, *"I think, when we received the results of the evaluation, a conflict could have been emerged. But due to Angelina's proactive issue solving, a conflict could not emerge…I also think that we needed to correct the grade and it was worth to do it, it was better for the group feeing."* (Interview: Ina)

Marcus really appreciated the teams' supportive behavior and gave his mates high credit for this undertaking. In the interview, he acknowledged: *"I had an issue in the first phase about the grade…, but I got a grade that I didn't like but I didn't say anything to anyone, but Angelina came to me and said we don't think it's fair [this grade]…. I*

wouldn't take the initiative to go there and complain about it because it was, like, peer evaluation - you have to accept that, but they felt that it was not fair; they decided to do that and they did it. I thought they helped me in that situation, and the others - they were really, people – really considerate!" (Interview: Marcus)

4.9.3 Leadership Substance: Change

4.9.3.1 Intellectual Stimulation

Team members' proposals and suggestions were often challenged by one member. Ina was the one who tried to encourage others to rethink their ideas and to see things in a new light. One of the team members acknowledged, *"Ina was very challenging on that. She always had the question, 'I don't know'.... I think she was a very important member in the group."* (Interview: Marie)

Indeed, Ina described herself as the *"critical activator"* (Interview: Ina) of the team by encouraging her peers to view their project undertaking from different angles. *"She was often very direct, very concrete… when the others were hovering, did not know where to go, then she [Ina] was the one who down-to-earth said: 'hey guys, we are on the wrong track, we have to concentrate here on this'. This was her role in the group!"* (Interview: Mathias) stated one member when explaining Ina's role as a team member.

At one of the observed meetings, at the beginning of the second phase, Angelina updated the others about her IS subtask, namely the proposal to trace Gilbert's marketing campaigns with the aid of a customer relationship management (CRM) system. The following excerpt illustrates Ina's questioning role during group discussions:

Angelina: "For CRM you have a lot of different products. Navision license costs €2000, and all the services and that is the basic."
Marie: "Maybe because of Navision, we could ask for one that is not so expensive."
Ina: "But it is also about complexity! Because if you have a system that has it all, then you don't have this interface problem. Because if you have a different CRM, ERP then

you have different interfaces, you have to export the data, report it again. I think it should be as easy as possible, because otherwise they will lose time.”

Angelina: “Everybody already works with Navision”

<u>*Ina*</u>*: “Yes, that is why I’m saying maybe it’s an advantage to have an “all-in-one” solution, even if it is much more expensive than having three different systems. We can’t say this like this – this is very high hypothetical discussion.”*

Angelina: “The easiest one is an expansion from outlook.”

Marie: “But this is not linked to Navision again. You said it’s more intelligent to combine things?”

<u>*Ina*</u>*: “I said, it depends, but even if it’s more expensive, its worth it to pay this price for not having the high number of interfaces.”*

Angelina: “But I read that some companies have several different programs. I don’t know if it’s worth to separate things or one solution.”

<u>*Ina*</u>*: “It also depends on the person who is working with it. Who is going to work with it? It depends on the suppliers. I don’t know how much is the data exchange? If we propose one system and for our company it can do everything - but if it doesn’t fit to any distributor - and the exchange is very important - then it doesn’t make sense, either. We really need to find out what are the important information flows.”*

Angelina: “Yeah, and we don’t know that at the moment.”

(Observation of team meeting: 23.03.2009)

This fragment of the team’s dialogue exemplifies Ina’s intellectual stimulation role within the team. She often tried to encourage the others to question their assumptions and the underlying factors of whether a system was appropriate or not. In the dialogue referred to, Ina encouraged her team not only to take a first glance at emerging decision criteria - costs - but also to look for other determinants like complexity, compatibility of the IS, and connectivity to clients into consideration when proposing new IS solutions to the client.

Particularly with regard to the beginning of the project, some team members even felt attacked by all Ina’s challenging questions during the team’s discussions. Especially Marie, who needed to grasp that Ina’s putting her comments and proposals into questions was not targeted at questioning her person and capabilities. After some time

had passed and the members got to know each other better, Marie recognized the positive aspects of Ina's intellectual stimulation role in the team. She acknowledged, *"I don't know, I think that in the first, Ina is, when you do not know her, maybe you can misunderstand what she tells. Because she is very direct... I know that she is very strong when she says and when she question things, and that maybe I was thinking that she was very direct so at the beginning maybe I was a bit shocked, I would not say angry, because, no, but I was maybe shocked and maybe I thought, why is she asking me so many questions. I asked myself, why so many questions. So yeah, maybe at the beginning, I did not take it so well, but then with time I realized that is her way of doing it."* (Interview: Marie)

Ina even took over this challenging role beyond the team's boundaries. At meetings with members of the whole consultancy, she was also the one who encouraged other expertise teams to rethink their project proposals. Ina described herself, *"I was on the one hand really critical within our group, but also towards the universe by raising concerns and passing criticism in the meetings."* (Interview: Ina) One of the members remembered an example of a universe meeting situation during which Ina forced the Human Resources expertise team members to rethink their proposals by putting their status quo into question. Marie described this situation as follows, *"It was in a universe meeting and we had this presentation on I think it was HR for the first part, and she [Ina] was there and she was making them so many questions and she was really helpful because the HR group did not do a lot for the first part.... So they did not do any in-depth analysis and with her questions I think she [Ina] made them realize that they had to do much, much more work. And the other people were not doing that as she [Ina] was to make them realize. Because, more people were criticizing, saying, 'No, but look this is not enough. You need to do more, you need to do more.' And Ina was more, 'Okay, it is good but what do you think about this? What do you think about this?'"* (Interview: Marie)

In the course of the project, Mathias also increasingly engaged in this intellectually challenging role within the team. One member acknowledged, *"Mathias also was very focused on the level of the discussion."* (Interview: Marie) In a slightly different way, Ina described him as a team member who queried the team's proposals, *"...like we can*

not do that or he proposed constructive new ways of approaching the problem." (Interview: Ina) But, according to Marie, Mathias did not always engage in this intellectual stimulation behavior, *"He [Mathias] was more questioning things because he was a bit more like Ina, questioning and asking, and even not only questioning his own work but questioning others' work which he did not do in the first phase. [At the beginning] He did not really question other people's work, whatever we said he was like, 'Okay, okay' and then it was more, ' Ah, but are you sure because you think…?'"* (Interview: Marie)

Similar to Ina, he put a lot of questions to the people who presented the status of the teams' subprojects. Mathias forced the other members to identify the underlying reasons for choosing certain solutions and to rethink their assumptions. Through questions like *"How important is it for the client? But, in the end, what do they need it for? How did they find that out?"* (Observation of team meeting: 18.03 2009) he stimulated his peers to regard their problems from an in-depth IS and client standpoint and to look for underlying corresponding reasons why certain IS solutions should be preferred to others.

4.9.3.2   Boundary Spanning Activities

The team's boundary spanning involved two main activities, scouting for information about the team's task as well as collaborating with others outside the team. By the nature of the team's consulting task, the team members needed to scan their task environment intensively to figure out trends and technologies in order to elaborate and recommend new ways of achieving the client's internationalization proposals. At the beginning of the first phase, Ina in particular took over a dominant role within her team by gathering external information about the winery context from online databases. Marcus acknowledged, *"Ina brought some really good inputs from outside and this makes us, like – it helps to guide us through our work, so that's why I did say that she was sometimes quite kind of a leader because she was pointing in some direction."* (Interview: Marcus) Marcus' comment was referred, among other things, to one highly informative analysis of the wine market which Ina detected online. Shortly after her discovery, Ina shared this information with her mates by presenting this market

analysis. At the observed meeting, Ina stated to her mates at end of her presentation, *"I think this presentation gives a good input what you should think about when you are watching the wine-industry."* (Observation of team meeting: 11.02.2009) With her presentation, she inspired the team's discussion on Gilbert's internationalization plans concerning where to go internationally. Besides online research on further contextual information, another member took advantage of her personal network to gain more general insight into ongoing development movements in the Spanish and international wine markets, as one member acknowledged, *"During the first part, Marie did the interview with a friend of hers who was working in the wine industry… [and]…he was saying general statements or general trends of the winery industry…"* (Interview: Angelina)

As the requirement for more detailed information for the decision phase of IS increased, most of the team members changed their sources of external information, namely from engaging in general online research to conducting interviews with IS-solution providers to gain more specific, customized information. At one meeting observed, for instance, Marie had experienced difficulties in gaining information on the costs of implementing and maintaining a traceability system at Gimbert. Yet she sought for Mathias's feedback during team discussion at one of the observed meetings:

Marie: "I tried to find the real costs of it [RFID], I don't know who to call!.. What is your suggestion?"

Mathias: "The only way to do it is to try to find some companies and call them".

Marie: "Yes, how do you approach Navision? Do you write them an e-mail or contact them by phone directly?"

Mathias: "I tried to call them but there was only an answering machine, and then I went there".

(Observation of team meeting: 17.04.2009)

This fragment of dialogue exemplifies this change of source of external information from pure online research to seeking and acquiring information via personal contacts with experts in the IS field in order to receive detailed, customized information. In a similar vein, Angelina described her external information acquisition as follows, *"In the second phase, I took so many interviews for the CRM system and generally internet and*

extranet that was really…, to get as much information as possible, especially for the costs because costs are unavailable online. There is no way you can find the costs clearly stated online, only sometimes in blogs. And is it a good and trustworthy source? I don't know. So I had to contact different offices and ask and check. So once I contacted one office, I was trying to contact another one to see if, I mean, the prices were really the same, just to have a clear picture." (Interview: Angelina) At the beginning of the IS phase, the team members experienced challenges in gaining this customized IS information. Members needed to pursue this customized information by, for instance, frequently calling and visiting the relevant contact person at these IS solution companies. To assure correctness and quality of thus gained external information, members even contacted different registered offices for one issue.

Similar to collective scouting activities, this team also managed their boundary spanning activities together as regards coordination and collaboration with external groups. Although the universe as a whole defined the role of an official representative for each expertise team who was supposed to be in charge of maintaining communication and coordination between the various expertise groups, the representative of the team under observation usually attended these "representative meetings" with most of her teammates. Angelina, the official representative, stated, *"In fact, from the other teams nobody came, generally there were just the representatives, but from my team, that's why I am really happy because, even though it was not necessary, they spontaneously say, yes, I am coming with you to the representative meeting just to see how the situation is going, how the situation is developing, how the overall project is going, what's the workload or the general development achieved by the other teams." (Interview: Angelina)* Along the same lines, Marie also highlighted the importance of the team attending these representative meetings together, as the discussed directions of the overall consulting project were not only of the highest interest to the representative, but also to each member of her team. In her own words, *"At the beginning, only Angelina [attended those meetings] but then we figured out that we all had something to bring in, we all had different perspectives on the project because we all were working on different parts and it was much more efficient to go there, ask our questions, rather than give them to Angelina so that she ask them for us.*

Because maybe she could ask the question, they would answer but maybe with the answer we would have more questions coming up." (Interview: Marie)

Besides the collective participation and interest in these universe meetings, some team members, and particularly Angelina, also fostered collaboration and coordination between certain expertise teams of the universe. Angelina often took charge of organizing meetings with other expertise teams, particularly whose teams' tasks were highly interdependent. At the beginning of the first phase, for instance, Angelina often tried to arrange meetings with the marketing team to discuss and arrange together the main internationalization strategy for Gimbert. In one of her e-mails directed to the marketing team, she wrote the following: *"As you already know, our groups have clearly many overlaps in terms of topics that need to be addressed in our presentation, for this reason we have thought it could be a good idea to meet in order to better organize our work."* (E-mail: 25.02.2009)

The observed team showed itself very open to external collaboration and coordination. In the words of one team member *"Our group feeling was that we were really open and accessible to the others. Particularly due to the fact that we attended the universe meeting with several team members."* (Interview: Mathias) Despite this, the team experienced several difficulties in collaborating with other teams within the universe. This team needed to urge other teams to work in collaboration with them. They sent several e-mails to the representatives of the marketing team to arrange meetings to share each other's proposals in order to deliver a uniform consultancy approach. Angelina experienced this situation as, *"We had problems with the marketing team because, for example, Ina was in charge of the website part; she tried several times to get in contact with the marketing team, but most of the time they were not answering and when we met with the people in person and we were asking about this part, they were just saying yes, yes, of course, but they were not giving us anything to coordinate with. So we were, for example, giving them our information, but we were not receiving anything back. So it was very hard to coordinate but, again, I think that the problem was connected to the generalization of the team. Even collaborating with operations was not simple because I think their team had internal problems. So if a team is not united, it's really difficult to coordinate."* (Interview: Angelina)

In sum, data revealed that this team shared its leadership activities, including the task-, relations- and change dimensions. The following table shows the leadership activities of the team members engaged in these three substances of leadership.

Leadership substance	Leadership activities	Illustrative data
Task-oriented	Collective planning	"So just declare it by what's our objective?" (Observation of Team Meeting) "So how should we proceed in general, I think we should do a timeline! I think it is better if we set a schedule!" (Observation of Team Meeting) "Every decision we took was made as a group decision." (Interview: Marie) "I think that the more strategic side of leadership must be shared so that everybody agrees with it." (Interview: Marie)
	Clarifying, reminding and coordinating team's objectives	"All the time we were all deciding together the goals, all the time. Because she was only reminding us of that [the goals]." (Interview: Marie) "Angelina was the coordinator." (Interview: Ina) "Angelina put things together and kept track of things." (Interview Mathias) "I think it is better when it is always cohesion and a shared leadership. But I think that it is also important that there is a person responsible for some things, like Angelina, she was responsible for sending e-mails, …and I think these operational leadership things do not have to be shared. They really have to be the responsibility of someone" (Interview: Marie)
	Collective monitoring	"How is your part going?" (Observation of team meeting) "There was, if you want to say, a kind of monitoring or checking mechanism, but it was totally informal. It was just by group pressure, not that they need to have a leader or somebody pointing at a person saying you are not working." (Interview: Angelina) "I briefly went through our mentor's fact sheet about objectives, and I am not sure if we touched all the points we wanted with the current work distribution" (E-Mail: Ina)
Relations-oriented	Building and maintaining members' relationships	"Angelina kept the team together… she was the one who contributed that we had a good group climate that we built up a friendship between each of us. She is really good in building up these kinds of relations." (Interview Mathias) "She did a lot of work in getting to know each other so that when we started the meetings we were doing a bit of talk at the beginning that is not necessary on the topic. We were talking a bit around then we said, okay, now let us focus and let us do this. And I think that this talk at the beginning helped us to create the cohesion" (Interview: Marie)
	Collective facilitating of resolving tensions in the team	"Talking about the feedback, I think – because I think that his [Marcus] feedback is not fair! This grade is too low, I personally think." (Observaion of team meeting) "I think, when we received the results of the peer evaluation, a conflict could have been risen. But due to Angelina's proactive issue solving, a conflict could not emerge." (Interview: Ina) "If we had an important issue, we discussed that in the meeting. Marcus, for example, he did not now how to tackle his problem. And then we approached it together." (Interview: Mathias) "But they felt that it was not fair, they decided to do that and they did it. I thought they helped me in that situation and the others they were really, people–really considerate!" (Interview: Marcus)

Change-oriented	Encourage members to view points in a different way	"… the one that was always ready to see, this and this could be improved, or I have a question here, can you explain this better…" (Interview: Angelina) "critical activator" (Interview: Ina) "Ina was very challenging on that. She always had the questions 'I do not know.'… I think she was a very important member in the group." (Interview: Marie)
	Collective boundary spanning	"Ina brought some really good inputs from outside and this makes us, like – it helps to guide us through our work, so that's why I did say that she was sometimes quite, kind of a leader because she was pointing some directions." (Interview: Marcus) "At the beginning….only Angelina [attended those meetings] but then we figured out that we all had something to bring in, we all had different perspectives on the project because we all were working on different parts, and it was much more efficient to go there, ask our questions rather than give them to Angelina so that she ask them for us. Because maybe she could ask the question, they would answer, but maybe with the answer we would have more questions coming up." (Interview: Marie) "Our group feeling was that we were really open and accessible for the others. Particularly due to the fact that we attended the universe meeting with several team members." (Interview: Mathias)

Table 9: Shared Leadership (BPIS Team)

4.9.4 The Emergence and Development of Shared Leadership

This team collectively shaped project progress and decided together at the meetings what was to be done in the project. This team decision process is described by one member who stated, *"I think that the way we arrived at a decision [was] very rational, everybody was okay with it."* (Interview: Marie) Hence, no commands or clear directions were given by a single superior member in the team. On the contrary, every member had the opportunity to apply his or her skills and knowledge in those fields in which members were most competent in order to achieve team goals. In Angelina's own words, *"Everybody was contributing to the overall team performance in his or her personal way. So within the team you could really see, I don't know, like an expression of personality of the people, the way they think, the way in which they behave, the things that are important to them."* (Interview: Angelina)

Team members not only seemed to leverage each other's capabilities best, but also influenced each other on various occasions in the achievement of the final goal. The team did not solely rely on a single team representative for leadership. In this team, the team representative only took over the leadership activity to coordinate the project. One

of the team members described the situation, *"There was no difference in maintaining group dynamics and showing responsibility for the team task among team members. It [representative task] was only the organizational task, yeah, to put things together and to keep an overview"* (Interview: Mathias) of the team's project. Along the same lines, the team representative stated that, *"Between the representative and the other team members there was no difference to me"* (Interview: Angelina) She continued, *"I like not to be the leader because it's not about being a leader in this case, but just to coordinate and to motivate my team"* (Interview: Angelina)

In so doing, team members took on different leadership activities, some of which were performed individually and some shared with other teammates. These shared leadership roles seemed not to have been defined in advance; this diffusion rather happened naturally over team's life span. Whereas, right at the beginning the team representative was the one who emerged as the coordinator of the project, other members emerged as different co-leaders over the course of the project. For example, Ina was referred to in the group as the one who, *"…brought some really good inputs from outside and this makes us, like – it helps to guide us through our work, so that's why I did say that she was sometimes quite, kind of a leader because she was pointing some directions."* (Interview: Marcus) Or Marie, who showed the greatest change in behavior in respect to leadership in the course of the project, *"In the end, she took over the lead…..she developed herself from being part of the team to framing the team project."* (Interview: Ina) Also Mathias was regarded as the one in the team who adapted over time to *"Ina's critical questioning behavior"* (Interview: Marie). Taking the time dimension into consideration a shift from a focus on the team representative right at the beginning of the project to a concentration on most team members as co-leaders was observed. Hence, leadership influence was not only given by the team representative, rather most team members were influenced and influence his/her colleagues in or another aspect of leadership at the mid to end of the project (Researcher's diary).

4.10   Team Learning Process

After having presented team's distribution of leadership, I will focus in the following on team's leaning process. As noted elsewhere (cf. chapter 2.3), the team learning process consists of two main learning behavior categories, a) reflection - behaviors that promote collective insight, and b) action - behaviors which implement those gained collective insights in order to produce change or improvement (Edmondson, 2002). Each of these two categories is constituted by specific learning behaviors: In accordance with recent team learning process conceptualizations (Edmondson, 2002; Gibson & Vermeulen, 2003, Kasl et al., 1997), the former category includes learning behaviors such as seeking help and feedback, giving help and feedback, and reframing. The latter category entails behaviors that take action based on new insights and therefore decrease the team's ambiguity (Gibson & Vermeulen, 2003). In particular, this sub-category of learning comprises behaviors such as codification, transferring new information to others, and making change and improvement. In the following, each of these learning behaviors will be analyzed on the basis of data based on team members' discussions and activities and members' stories and recapitulation in personal interviews.

4.10.1   Reflection

4.10.1.1   Seeking Help and Feedback

The field data identified a set of activities which members engaged in to invite others to participate in problematic situations during the business project. In the observed team meetings, team members admitted to being confronted with difficulties regarding their subtasks. At the beginning, team members often took a long time to define task problems which needed to be answered over the course of the project. Members often approached the others to discuss the member's subtasks in order to frame the basic problem together. One team member recalled such a situation in which she felt stuck and asked the others for help, "*What I did is that, when we got to the meetings and there was something I did not know, I just said it, 'Okay, I have a problem here…' or 'I am a bit lost, I do not know where to go', or 'I do not see it very clearly. Maybe we can discuss it'.*" (Interview: Marie)

Over the course of the project, as members acquired knowledge in each field, team-mates' help-seeking activities were reflected in more concrete questions, such as where and how to obtain specific kinds of information to approach each problem. One member acknowledged in the interview, *"If someone of us had doubts during the meeting, we could just talk about our problems. I had many doubts, so I just said, 'listen, I have to do this and I have to come up with information related to this tasks so do you know, I mean, how I could find this specific information'."* (Interview: Angelina) Additionally, as members investigated solutions for approaching each problem, they needed to trade off different kinds of solutions and asked each other to assist in this decision. Marcus remembered in the interview that he approached his mates to gain feedback, including which proposal to follow, *"I was trying to discuss to get some help from them, like opinions, how they think that I should proceed."* (Interview: Markus)

Additionally, collective insights were enhanced by proactively seeking feedback from the team's tutor: Team members regarded their tutors as a steady source of feedback for their project. In most cases, all team members attended feedback meetings, and even prepared these meetings in advance. Angelina recollected, *"It was really important to go prepared to the meeting with the professor, so we prepared the questions before and even prepared the possible linkages between the persons …."* (Interview Angelina) In these meetings, the team aimed at receiving feedback from their tutors on the entire project, not solely on a single subproject, therefore tried to allocate time for each member to put specific questions to their faculty advisor. These specific feedback conversations for each single subproject were dominated by the corresponding project member and the tutor, respectively; however, in the observed meetings the other members were also integrated in these discussions. Angelina described these meetings as follows: *"I think it's just the problem of team spirit because, what I was saying, if I was saying something it was not an individual or personal thing. It was something related to the teamwork…Again, when we were talking to the professor, of course, there were specific questions related to each specific part, but the way in which we put the questions, because the questions were set before the meeting, was agreed among us. So we already knew that, for example, Ina or Marcus was going to ask this specific question and the answer to that specific question was also important, for example, to me because in my part there was a reference. So I had to be there, actively listening and*

maybe replying if I had a doubt." (Interview: Angelina) After these external feedback sessions, the team members got together again and collectively reviewed the received feedback and inherent insights gained.

4.10.1.2 Giving Help and Feedback

While help-seeking activities invite others to participate in solving problematic situations, these activities do not guarantee collaboration. As a response to help-seeking activities, others need to invest some time and effort in assisting when open questions are raised by others. In this team, the team members clearly acknowledged each other's willingness to help. In the words of one team member, *"They didn't limit themselves just to what they were asked for… So they were asking me, come on, I mean, if you need help just ask me. I will be there, just send me something, I will work with that. So we were, really, always available, always kind, they worked even for tasks that they were not supposed to fulfill."* (Interview: Angelina)

Team members described their meetings as a good possibility to find out what difficulties the others were facing and also ways to help. In Mathias's own words, *"Each of us worked on a topic. [In the meetings we] see: where are rising problems? Are we all on the same page? Where can we help each other until next week?"* (Interview: Mathias) For example, at one meeting observed in the middle of the business policy analysis phase, Marcus experienced difficulties in how to frame his macro analysis, the so-called "PESTEL" analysis, standing for "Political, Economic, Social, and Technological" analysis. Team members joined in the effort to resolve his problem and started to discuss it. Mathias, in particular, was the one who gave him a "leg up". This member linked various subparts and came up with a proposal as to how Marcus should organize his macro-analysis.

Marcus: "I am not sure about my part. What should I present? You are saying something about quantitative, there are some qualitative data. That is also in my part, no? To analyze the economic system?"
Ina: "Probably it makes more sense to do secondary research because we did not do any interviews."

Angelina: "Marie did one."

Ina: "Very general and so –"

Marcus: "But then again, to be honest, in a way it is impossible to research all elements for four, five regions. Usually when you do a PESTLE analysis you do it for one country, right?"

Ina: "Yes."

Mathias: "Yeah, I mean, don't we agree that would be too much, I mean, even in the paper you don't want to have, like, PESTLE analyses for 10 different countries."

Marcus: "Not even in the paper."

Mathias: "I don't know, for the presentation, I mean for my part, I can do, like, a slide on the five forces and I can do a slide on this…"

Anna: "…Criteria?"

Mathias: "Yes, criteria, and at the end of this criteria put, like, a few countries which we say okay, those might be interesting; and then you take over, for example, with PESTLE and you try to identify a few factors which might be, like, applicable to all of those countries or globally, or like, I mean, you can talk about recession or you can talk about wine consumption, I don't know what, like more people are drinking at home than in restaurants, and then if you feel like those countries which we came up with, like, some of them have, like, a very specific aspect in one of the PESTLE factors; then you can pinpoint that."

Marcus: "Okay".

Mathias: "For example, Russia, which might be a very important country, you could, like, do the PESTLE a bit more towards Russia, you know, and you have to customize it somehow."

(Observation of team meeting: 27. 02. 2009)

To engage in the team's problem-solving efforts presupposes an active, collective listening among team members (Hargadon & Bechky, 2006) which acted as a basis for helping to know what the problem was about. One team member even described this collective listening as a shared team value, *"We all agreed on values of sharing information all the time, and we were prepared to listen to each other."* (Interview: Marie) She continued in the interview, *"Everybody was very respectful all the time to what everybody was saying and we all listened to each other, and I think that the way*

we get up to a decision was very rationally, so everybody was okay with it.” (Interview: Marie)

Although each member was assigned to individual tasks, these tasks were highly interdependent. When working on individual subtasks, team members appeared to know the overall project outline in the back of their minds and made use of synergies between each other's work, for example, by scouting relevant project information. In one member's own words, *“If I had an interview with a person, I said that during the meeting, so everybody was aware of the fact that, for example, I was going to contact an CRM expert for that interview or my friend in Italy, or that I was contacting that kind of company even because maybe our team members were suggesting me the questions to ask. So it was absolutely necessary to talk about that during the meeting because maybe you could ask for other kinds of information that I didn't need, but they need.”* (Interview: Angelina)

Besides being supportive in the sense of scouting and sharing lots of project information among each other, members also received feedback from their peers. Members were highly open and willing to give advice on each other's part. According to Marcus's own words, *“If someone needed help in his part, everyone would give an opinion on that. So I think we supported each other during the process.”* (Interview: Marcus) Particularly Ina was the one in this team with challenging questions and advice. *“In each session everybody talked about what one was doing and, well, Ina was maybe also challenging these, so that was the best feedback“* (Interview: Marie) acknowledged one member when recalling Ina's provocative feedback which, in turn, stimulated an energetic exchange of ideas and arguments among the team members.

4.10.1.3 Reframing

By collectively planning the team's goals at the beginning of each phase, this team framed its initial overall perception of the project and separated it into interdependent sub-areas which needed to be investigated by its team members. Although general fields were defined during these early planning activities, team members often recognized the need to ask the others for assistance in further defining pathways for single project

areas. Based on this collective understanding, there were several occasions observed in team meetings when team members made new sense of what other members had already known. This transformation of the team members' perception into a new understanding appeared to be incited by internal energetic discussions as well as by external insights.

The team collectively reframed initial perspectives as a result of internal team project discussions. Angelina described this reframing of initially agreed standpoints over the course of the project as follows: "*Sometimes we initially took decisions together to do certain things, but then we had to adopt these decisions, but not because we forgot, that was done intentionally because we saw the project required this shift.*" (Interview: Angelina) This shift in the team's plans and decisions was the result of an open energetic exchange of ideas and comments in the team's discussion. *"It would be totally unrealistic that we would have all the same position in the project. I think we always came up with some arguments"* (Interview: Mathias) when discussing specific issues among team members. Ina in particular was the person in the team who stimulated the team's argumentation by questioning decisions and assumptions which often led to a reconsideration of the team's conceptions. *"She was always making the questions that questioned what we had all decided. So I think that was very challenging for the group."* (Interview: Marie) Ina's provocative questions and comments often led to the members exchanging arguments, ideas and concerns; over the course of the dialogue this led to a successive reshaping of the initial starting position. This kind of cycle of members' arguments and questions together brought new frames in observed team meetings to light.

For example, in the middle of the Information Systems (IS) decision phase, Ina questioned the team's approach in copying parts from the previous analysis team on "the role of IS" at Gimbert. Due to Ina's provocative questions, the team reconsidered its approach and came up with a new argumentation line on the significant role of IS at Gimbert.

Ina: "Yes, we need to deliver, but first we need to know what to deliver, before we start writing; and I think, we don't have yet that argumentation."

Angelina: "What is missing?"

Ina: "I think we don't have the argumentation why Information Systems is so important and how we are going to develop the arguments? And we should collaborate with Marketing. I don't know what they are doing now."

Angelina: "The problem is marketing is not telling you what they want. They don't know…"

Ina: "But I think this with the role, this we don't have."

Mathias: "But we can still do it. The role of IS, defining it, some general bla, bla on it."

Ina: "I don't think that is fine."

Mathias: "What is the role? Facilitating the functions?"

Ina: "I think we need a profile, what skills and profile this person needs."

Mathias: "But that is not the role of IS. I thought it would be what is the role, why actually we talk about this. Then you can talk about the necessities, talk about the different projects and then what you actually need."

Angelina: "You are talking about two different things, and both are right because we have first to talk about the general idea of IS and why it is important."

Ina: "And I think we can not do the general bla, bla!"

Mathias: "I do not know what you want to have then."

Ina: "I think we need numbers or something!"

Angelina: "What numbers? What numbers do you need?"

Ina: "I think we need to say, in order to increase the sales, we need to enhance this, and this process, no?"

Angelina: "OK, if we start with the general objective."

Ina: "Because the general bla, bla, the previous group has done it already. And I do not want to repeat it."

Mathias: "I don't want to include it. But I thought if there is one slide on the role of IS, where it stands in the company, with a chart."

Ina: "And how? How are you going to convince them? By saying it is really important?"

Mathias: "But then you come from what they really need, from the necessity side."

Angelina: "It is fundamental. You don't have it. We show you why. Make up your own mind now. We show you why it is important. This is what you need, it can be achieved through IS. And now we explain you how."

Mathias: "Then you say, you need this, these are the solutions, these are the different modules we identified. Then it comes out to the implementation."
Ina: "And then we have a plan. ….."
(Observation of team meeting: 01. 04. 2009)

This piece of dialogue exemplifies the gradual change in the team members' standpoints. Members built on each other's comments, some of them more challenging than others, which in time led to a reframing of the previously held conceptions of the team.

Additionally, this team showed instances where they transformed their previously held conceptions based on external insights, particularly feedback from its external faculty advisor. A week before the final presentation of the business policy analysis, this team arranged a meeting with its faculty advisor. The tutor advised the team to reconfigure its competitor analysis, part of the presentation (Researcher Diary). Based on this external feedback, team members decided to "*turn some parts inside out*" (Interview: Ina). After this feedback meeting, the members made sense of the received feedback and worked together on the areas which needed to be re-conceptualized. Mathias recollected, "*We sat down as a group for two days and worked together on the project. … This was like an emotional roller coaster ride*" (Interview: Mathias) for the team. Ina described this situation in a similar vein, "*We discussed the feedback and worked closely together, [and] brainstormed*" (Interview: Ina). Triggered by this external feedback, the team members made new sense of what they already knew. It was a reconsideration of already known insights. Marie noted, "*We just discussed the points that he [the tutor] stated and we saw that there was a lot of work, but still we had done lots, so it was not about doing more research but it was more about restructuring what we had. So, we worked a lot on that.*" (Interview: Marie)

4.10.2 Action

4.10.2.1 Codification
The field data identified a set of activities when team members translated collective, implicit insights into more explicit concrete action items through a process of

codification. In the course of this process, implicit, discussed insights became explicit (Gibson & Vermeulen, 2003; Polanyi, 1962). This codification process of collective insights was continuously observed during several situations during team's life span.

In team meetings, one member frequently took charge of listing discussion points which team members had debated and agreed. For example, at the beginning of the IS-expertise phase, the team members talked extensively about their IS-goals and areas which needed to be revised. In this planning process, one team member recommended listing these potential IS pathways:

Ina: *"Yeah, this time we probably can also – yeah, some areas we have to decide what we are going to do".*
Angelina: *"But I think – but for now we should at least try to write something about the working plan, present it tomorrow to the professor, ask the professor more detailed questions about the report, the length of the report, the structure and then, after this, we can set precise deadlines; because at the moment I don't really know exactly what we are suppose to deliver."*
Ina: *"Okay, but maybe we can prepare, I mean, I read everything, but then that some people are already more familiar with certain topics. For example, I really would like to invest time in the website or in the CRM. So, I prefer to do more about that than the RFID stuff."*
Marie: *"Should we maybe mention all the points, because I have wrote down and highlighted all the points that we actually need to do that is written here. So, like, the actions we need to take, maybe write them down and organize them in a working plan?"*
Angelina: *"Yes."*
Ina: *"Should I write it down?"*
[Ina looks for her laptop, turns it on, and types it.]
(Observation of team meeting: 18.03.2009)

Additionally, in feedback meetings with their faculty advisor, team members put the advice received onto paper in order to be able to recapitulate it later on in subsequent project discussions. During the challenging feedback meeting a week before the final

business policy presentation, for example, Marie recorded the feedback received from the advisor. In Mathias's own words, *"In this meeting, Marie wrote everything precisely down, and she structured it clearly, she had his [the advisor's] comments for each slide…. that was really good and helpful."* (Interview: Mathias) In this respect, the team members built on this codified feedback as a point of reference in order to further discuss and integrate these insights gained into the team's project proposals.

After team meetings, one of the team members took responsibility for recording team members' insights and agreements by entering this collective knowledge into meeting minutes which, in turn, were circulated via e-mail to all the team members. *"I have already uploaded on intranet two files [in powerpoint] that summarize what we have done today"* (E-mail: 06.02. 2009), or, in a similar vein, *"As promised I am sending you the list of questions we would like to ask during the meeting with the company that is going to take place next week. Here they are…"* (E-mail: 26.03.2009) are examples of Angelina's e-mails that constitute this routine of codifying the team's insights gained from team project discussions. Mathias described this codification process as follows, *"She [Angelina] put those points on paper which we had discussed during our meetings and sent them via e-mail around."* (Interview: Mathias)

Besides that, after universe meetings in which some team members could not participate, other members summarized the content of that meeting and distributed it via e-mail to the rest of the team. For instance, in the middle of the second phase, during the Easter holidays, most members were out of town, and only Marie was able to participate in a universe meeting. This member recorded the meeting content as minutes of the meeting and sent it to the rest of the team. Ina acknowledged, *"She [Marie] distributed meeting minutes…but I also expected that. If someone goes to the universe meeting, that this member would shortly write what has happened during the meeting, what were the points that have been discussed, what is the next step what we will do…"* (Interview: Ina) The subsequent team meeting started with an update of the content of the minutes of the universe meeting based on what Marie had recorded. In parallel to Marie's spoken update, Marcus went through the sent meeting minutes in his e-mail account. In the observed meeting, it appeared that the team members used this update from the previous universe meeting as a starting point to further discuss project pathways.

4.10.2.2 Transferring New Knowledge to Others

The team's attitude towards giving the team's information to others outside its boundaries appeared to be open, and motivated to update others about its proposals. Throughout the team's life span, its members did not hold back the team's gained insights; on the contrary, the team members openly shared their project knowledge with other teams in their universe. Some members even encouraged their mates to share relevant information outside the team's boundaries. In one of Ina's e-mails, for example, she stimulated her teammates to share relevant information with members of the universe. Ina wrote, *"I have seen that some extracts from the analysis report could be quite interesting for certain departments …which we could suggest to marketing. I just wanted to ask you, whenever you see such information - to share it with the other departments of our universe…"* (E-mail: 18.03.2009)

As most of the team members attended representative meetings together, they assessed themselves as being motivated to collaborate with people outside the team's boundaries. In Mathias's own words, *"Our group feeling was that we were really open and accessible for the others. Particularly, due to the fact that we attended the representative meetings with several team members, and there [at representative meetings] we also made some suggestions to other groups."* (Interview: Mathias) The team played an active role within the universe whereas other groups, as noted elsewhere, engaged in less collaborative behaviors. For example, during the business policy phase, the team tried several times to approach the marketing group in order to meet and exchange information; however, the other team responded several times with, *"Sorry, but it's impossible to meet."* (E-mail: 23.02.2009) One team member also described this divergence in the whole universe, as follows, *"Everybody from our team came always, while some of other teams they didn't care or just they send the representatives. [During the rehearsal that the majority of universe members attended] it was pretty ridiculous, for some people it was clearly a loss of time because they were there, they were not even listening, they didn't really care, they just came there, they did the presentation, they went back to have a seat and that's it. They didn't comment on other's presentation, they didn't even care to see if there were like overlapping points of connection between their part and other parts. They just treated their part as if it was an individual project."* (Interview: Angelina)

Even though the team's environment did not highly appreciate close collaboration; this fact did not discourage the observed team from sharing the team's insights and giving feedback to others outside its boundaries. Between the business policy and IS phases, both teams - the one in the IS analysis phase and this observed team - met and exchanged their insights on each expertise field. Over the course of the IS phase, the business policy team still worked in the decision phase in close collaboration with the here studied team. *"With the other team of business policy, there was a high level of coordination,… we were really working together even because one member was asking me questions about our previous works, so I was giving that material of our previous analysis stage. So there was constant communication, so I knew what they were doing, they knew what we were doing, and so there was cooperation."* (Interview: Angelina) In a similar vein, at the end of the IS phase, this team was supposed to share the amount of IS investment with the finance team. In the observed meeting, it appeared that this team was eager to find and transfer this specific information, although it seemed difficult to ascertain this information. In a meeting observed, one of the members said, *"It is better to have an approximation of costs than to deliver nothing."* (Team meeting: 22.04. 2009) Angelina remembered the situation as follows, *"We managed to give them all the information they required and we were one of the few teams that really satisfied their answers."* (Interview: Angelina) Hence, although the team's environment did not show constant high appreciation of collaborative work, this team tried to approach other externals to share its insights.

4.10.2.3 Making Change and Improvement

Continuous progression and changes in the team's project proposals were the result of internally gained insights of the team's discussions and externally received feedback. These internal and external insights led to reconsiderations of project proposals which, in turn, were implemented by the team members. In the interviews, members also showed themselves highly satisfied with their project development over the course of the team's life span. *"We enjoyed staying together, seeing our development of team's project."* (Interview: Angelina) Marie also highlighted the team's continuous progress and acknowledged, *"I was always proud of being a member of this group because it is really, we were regarded very well…the progress we made, I think that made me very*

proud in the sense that I could really see that we were working hard, and then I could only be happy to be part of the group." (Interview: Marie)

Field data revealed several minor changes in subprojects in the course of the team's life span. Based on the team's collective reframing of various subproject proposals, the members took the next step and worked on their collectively gained insights which, in turn, led to further developments of specific subprojects. Hence, this team appeared to take action to implement gained ideas as well as to change collectively identified weaknesses. According to Ina, *"I think, in our group, advices were embraced and implemented by team members."* (Interview: Ina)

Additionally, this team took action based on externally received feedback. For instance, one week before the final presentation of the business policy, the team members requested a meeting with the faculty advisor and received challenging feedback on their competitor analysis. After this meeting, the team members got together, made sense of the received feedback and worked on the re-conceptualization. Hence, the team took action to change the weaknesses identified by the external advisor. When Mathias was reminded of this situation, he said, *"Then we really changed a lot"* (Interview: Mathias) in our project. In a similar vein, Ina also acknowledged, *"When we talked to the tutor and then, I think, we did a lot. And because of this, I am proud of this change."* (Interview: Ina) Besides this occurrence, the team members implemented additional external feedback which led to minor changes in the team's project over the course of the project. At the end of the IS phase, for example, the tutor recommended that they shorten the team's presentation. Marcus seemed to be proud of the improvement in team's final presentation, as he acknowledged, *"I thought that I was working with the best team in the universe because we were doing well and we always deliver it on time. Like, when we set deadlines we did the work in that time; unfortunately, some other groups did not. At the end when we had the difficulty that we had to cut, as an example, we had to cut time from our presentation because we were the last group and the professor didn't want to have long presentation and we agreed that each group would cut a little of each part and in the end, not every group did this effort, but we did it."* (Interview: Marcus) In a similar vein, Angelina appreciated this change in team's

presentation as well and said, "*Overall, I think there was a great improvement between Monday's and Thursday's presentation.*" (Interview: Angelina)

4.11   Effects of Shared Leadership on Team Learning

<u>Summary: Team's Learning</u>

All in all, this observed team engaged in collective learning processes, conceptualized as interplays of **reflective behaviors** and the **action** the team had to take to implement the insights it had gained. In the course of this business project, I identified a set of activities that team members used to induce their peers to participate in each other's problematic situations. Team members openly admitted to each other when they were confronted with a problem relating to their subproject tasks and asked the others for help on how to proceed. In response to these help-seeking behaviors, the other team members showed a high degree of willingness to assist in the problem solving of others, hence devoting time and effort to discuss and debate each other's task-related problems during project meetings. Due to this mutual help and feedback interactions within the team, I observed in the team's discussions that the members built on each other's arguments and advised each other not only to follow the original proposal, but encouraged the others and disclosed new ways of approaching the subtask. As a result of their project discussions, team members helped each other to frame a problem as a starting point and, on this basis, to also reset the course and hence to shift each other's awareness in ways that made new frames visible.

These collectively gained reflective insights, mostly tacit, were translated and implemented into more concrete action items by repeating, summarizing, and codifying the discussed and agreed points of meetings. In addition to the team's codifying activities with its gained insights, actions were taken as regards transferring the team's newly generated knowledge to others outside its boundaries. In sum, this team showed a continuous improvement in its project proposal: the members built upon comments in the team's dialogue and implemented each other's advice and feedback from outside. Then, in the next meeting, they asked for further feedback which, over the course of the

project, finally led to permanent developments of the consultancy project and to reconsiderations of the teams' proposals.

A summary of the team learning process, divided into reflection and action, is given in the following table.

Reflection Developing Collective Insights		Action Implementing Gained Insights	
Markers:	Illustrative Data	Markers:	Illustrative Data
Seeking help and feedback	"What I did is that, when we got the meetings and there was something I did not know, I just said it, 'Okay, I have a problem here…'.. 'I am a bit lost, I do not know where to go' or 'I do not see it very clearly. Maybe we can discuss it'." (Interview: Marie) "I was trying to discuss to get some help from them, like opinions, how they think that I should proceed." (Interview: Markus)	Codification	"She [Angelina] put those points on paper which we had discussed during our meetings and sent them via e-mail around." (Interview: Mathias) "Marie wrote everything precisely down, and she structured it clearly, she had his [the advisor's] comments for each slide…. that was really good and helpful." (Interview: Mathias)
Giving help and feedback	"Each of us worked on a topic. [In the meetings we] saw: where are rising problems? Are we all on the same page? Where can we help each other until next week?" (Interview: Mathias) "If I had an interview with a person I said that during the meeting, so everybody was aware of the fact that...So that was absolutely necessary to talk about that during the meeting because maybe you could ask other kind of information that I didn't need, but they need." (Interview: Angelina) "If someone needed help in his part, everyone would give an opinion on that. So I think we supported each other during the process." (Interview: Marcus)	Transfering new knowledge to others	"Our group feeling was that we were really open and accessible for the others. Particularly due to the fact that we attended the representative meetings with several team members, and there we also made some suggestions to other groups." (Interview: Mathias) "I have seen that some extracts from the analysis report could be quite interesting for certain departments ….which we could suggest to marketing. I just wanted to ask you whenever you see such information - to share it with the other departments of our universe…" (E-mail) "We managed to give them all the information they required and we were one of the few teams that really satisfied their answers." (Interview: Angelina)
Reframing	"Sometimes we initially took decisions together to do certain things, but then we had to adopt these decisions but not because we forgot, but that was done intentionally because we saw the project required this shift." (Interview: Angelina) "Based on this external feedback, team members decided to 'turn some parts inside out'." (Interview: Ina) "We just discussed the points that he [the tutor] stated and we saw that there was a lot of work, but still we had done lots, so it was not about doing more research but it was more about restructuring what we had. So we worked a lot on that." (Interview: Marie)	Making Change and Improvement	"I was always proud of being a member of this group because it is really, we were regarded very well…the progress we made, I think that made me very proud in the sense that I could really see that we were working hard..." (Interview: Marie) "In our group, advice was embraced and implemented by team members." (Interview: Ina) "Then we really changed a lot." (Interview: Mathias) "When we talked to the tutor and then, I think, we did a lot. And because of this, I am proud of this change." (Interview: Ina) "Overall, I think there was a great improvement between Monday's and Thursday's presentation." (Interview: Angelina)

Table 10: Team Learning Behavior (BPIS Team)

Summary: Team's Leadership

In this team exhibiting both reflection and action, there was more than one team member who engaged in leadership activities. Although this team had a designated, official team representative, a position defined by the universe, this team member tried to include the rest of the team in the leadership process. Angelina was *"making everybody a bit of a leader"* (Interview: Marie), explained one member when recalling the role allocation in her business project team. At the beginning of the project, team members did not deny that members performed roles, but agreed on having Angelina as the team representative who took charge of the coordinating function. *"I think that it is also important that there is a person responsible for some things, like, Angelina, she was responsible for sending the emails …and I think these operational leadership things do not have to be shared. They really have to be taken responsibility of by someone"* (Interview: Marie), acknowledged Marie. However, leadership activities beyond this purely operational coordination task were not to be distributed among the whole team, as she continued in the interview. *"But then, I think that this more strategic side of the leadership, that must be shared so that everybody agrees with it."* (Interview: Marie)

Along the same lines, my observations of team meetings also revealed an energetic exchange of various kinds of leadership activities between different team members which influenced the team and its members in areas related to task, relations and change (cf. Table 9). At the same time, these different leadership activities stimulated learning categories of both reflection and action, albeit in different ways. Although, clearly, an analysis of qualitative data can not confirm or refute causal relationships between variables (Amabile, Schatzel, Moneta, & Kramer, 2004), I did find some suggestive hints in observed meetings and in reports by interviewees of leadership activities having influenced the team's learning process of reflection and action.

The Role of Task-Oriented Leadership Activities in Team Learning:

Specifically, observations of team meetings revealed an exchange of task-oriented leadership among team members which, in turn, seemed to stimulate an increase of the team's collective insights and also action that had to be taken to implement these gained insights. In the **planning process of the team's project**, it was necessary for the team to make sense of the team's consulting assignment: Due to the consulting task context

and the fact that the main overarching goal of the project task had already been set by the client, this team was highly involved in reflective discussions in order to grasp and arrive at a common understanding of what the team was expected to do. According to Mathias, this team aimed at *"clarifying our understating of the task, whether we have all the same picture of it."* (Interview: Mathias) in the planning process. The team's need to plan its task stimulated its members to discuss the project and, concurrently, to gain project insights. One team member acknowledged, *"We did this meeting and we discussed, we brainstormed and then…we saw exactly which parts were coming up."* (Interview: Marie)

This collective planning led to a reduction of ambiguity among the team; it induced the team where to focus on in its project. This reduction of ambiguity was again reinforced by Ina who pushed her group to come up with a milestone plan by explicitly determining each subproject area. In one of the meetings observed, Ina urged, *"So, how should we proceed in general?, I think we should do a timeline! I think it is better if we set a schedule."* (Observation of team meeting: 11.02.2009) In so doing, the team members wrote the agreed goals down, and itemized the various project areas of the team. One member acknowledged, *"So first we differentiated the different topics, [and] we made a list."* (Interview: Angelina) Hence, the insights gained by the team became explicit proposals so that workable knowledge could be developed in each project area.

These collectively agreed proposals were again reinforced through one team member who took over the leadership activity to **clarify the roles and objectives of the team members**. Angelina's reinforcement of project goals led to the fact that team members knew what they were supposed to do which, in turn, induced a reinforcement of implementing collectively generated and discussed ideas. Mathias explained the positive effect of Angelina's leadership activity*: "[Angelina] clarified it, so that it was assured that everybody knew what he or she needed to do, what was expected, so that there was no double work in tasks."* (Interview: Mathias) In a similar vein, Marie also acknowledged Angelina's positive impact on the action part of learning. Due to her reminders, she encouraged the team to act on what the team collectively agreed and discussed with a view to the team's overall progress. In Marie's own words, *"Everybody understood what they needed to do, there were no misunderstandings,*

meaning that somebody maybe did something and then everybody was 'No, this is not what you were supposed to do'." (Interview: Marie)

Also in observed team meetings, Angelina took over the role of focusing team members' dialogue in the direction of the sighted goal and the inherent action that needed to be taken to achieve it. At the beginning of the IS phase, for example, the team members met to plan their IS proposal. However, the team digressed from the main subject. Angelina even reminded the rest of the group, *"Okay, guys, good, don't worry, but we have to prepare now the working plan."* (Observation of team meeting: 18.03.2009) Marie also acknowledged this positive effect of Angelina's leadership activity in maintaining and focusing the team's dialogue in the direction of the sighted goal which, in parallel, seemed to lead to a decrease in the team's project ambiguity. In her own words, *"That was really necessary because, if not, we could go back on some points that we already discussed and that is actually the bad thing. If you have a team then we need to interact and get along very well. We talk a lot easily, so we can lose the path maybe easily too, because if you start talking about something, everybody gets along very well, so it is talk and it is easy to go away from the subject. So, she [Angelina] maintained this focus by doing this. She maintained the focus on the goal, the focus on the steps. We are here, we were there last week, we want to be here at this time. So we need to work a lot."* (Interview: Marie)

Based on Angelina's clarification activities on the team's action part, other members responded in turn and added new perspectives and ideas which led again to a reframing of the project undertaking, hence to an increase in the team's insights. This interplay of action and reflection induced by members clarifying roles and objectives is exemplified by Marie, who said, *"All the time we were all deciding the goals, all the time. Because she was only reminding that to us and telling us, 'Okay, now that we decided these goals, we should go further and study what we want to do for this matter and this matter and this matter.' And even then some of us said, 'Yes, I also think that we should add to this we should also study this and this'."* (Interview: Marie)

This team collectively **monitored** its **progress** as to whether the defined plan and agreements had been achieved and thus implemented in the team's undertaking.

Usually, the team met *"to share the results of our researches and to clarify some doubts that we had."* (Email: 09.02.2009) The team therefore monitored each other's actions regarding what each member was supposed to do with a view to achieving the team's goal. This monitoring induced an enforcement of the action part of learning whether the collectively gained insights had been implemented. Angelina explained this collective review of the team members' actions: *"So in the end, we were really controlling the different tasks of each single person and we were making progress in the general development of each task for each individual part of the project. That was really good because, in this way, you clearly see that everybody is working, everybody is looking actively for information and everybody is involved…"* (Interview: Angelina) In a similar vein, also in e-mail communication, the members gathered information on their team's progress, *"Meetings were a good way to monitor, but even all the e-mails, we had plenty of e-mails."* (Interview: Angelina) For example, in the middle of the business policy phase, Ina compared the agreed team goals with the actual activities that her team had done so far in the project. Hence, it would appear that she stimulated the team to act on the missing issues which all the members had previously collectively discussed and agreed to do.

This review of each other's project action stimulated, in turn, discussions of task difficulties that members experienced when working on each subproject and thus led to an increase in the team's insights. Marcus described such a team situation as follows: *"We usually, always when we meet, we use it to discuss the progress we had done in our part and what we are planning to do the following days. Everyone would give an update of his part; the others would agree or disagree."* (Interview: Marcus) Additionally, I observed that, while one member was updating the others on her/his project undertaking, another member challenged this by asking several questions. Hence, it seemed too that collective monitoring not only induces the action part of learning, but also stimulates reflective insights.

The Role of Relations-Oriented Leadership Activities in Team Learning:
The relationship side of leadership, in particular the activity of **building and maintaining members' relationships,** was performed by one single team member. As the team members did not know each other before project start, building relationships

between the team members was especially important to this team. This active leadership work resulted in a friendly, cohesive and trustworthy team environment in which the team members identified with the team's common project task. Marie described her team, with: *"I think there was 100% trust... There was not merit fragmented. There was a group merit…[and] because of her [Angelina] we had our own group little culture… I think it was things like respect, and we had our values. We had integrity and respect, and also openness and real communication."* (Interview: Marie) In a similar vein, Ina also appreciated Angelina's relationship-oriented leadership activities. According to Ina, Angelina encouraged a *"constructive environment"* (Interview: Ina) in her team.

This open, trustful and constructive group environment enabled open reflective discussions among team members by asking each other straight questions and for help, admitting difficulties or challenging feedback. Members felt confident when they had ideas which did not conform to the team's main body of thought. Marie explained this positive relationship of the team's open and trustful environment and its potential of increasing collective insights, as follows, *"You feel comfortable and creativity comes when… once you forget about all of the other things you have to think of in group work, then comes creativity, then it could be really creative, when you free your mind of other preoccupations you could have. And in my teamwork, I think, this preoccupation we did not have. Other teams maybe have the following experience, 'Can I say that? Is that going to offend somebody? Can I trust this person? Is this person going to do what he says? Are people listening to me? Am I saying something stupid, maybe people are afraid to talk because they say, 'Oh, maybe this is, they have done is stupid?' And I think all these problems we did not have. So, thanks to that we could be really creative and we could really brainstorm."* (Interview: Marie) Thus, this open and constructive team climate, induced by Angelina's specific relationship activity, established the basis for collective reflection.

Relationships were additionally maintained by **facilitating the resolution of tensions** within this team. For example, when the team members received grades from their tutor and Marcus got a lower grade than the rest of the group, Angelina proposed to the team to adjust the team's grade. All the members agreed to her suggestion and showed high consideration concerning solving Marcus problem. Ina remembered this situation, *"I*

think, when we received the results of the evaluation, a conflict could have been emerged. But due to Angelina's proactive issue solving, a conflict did not emerge. But I could imagine… I know, for example, in another group, someone also received a low evaluation, but he did not discuss this issue within his group, and until today, this is still a problem for this person." (Interview: Ina)

It seemed that unuttered tensions among the team members raised the reluctance for teamwork on the part of the members. That is why, for Marie, the team's discussion to resolve Marcus problem was essential. "*I think that if we had not done anything about it that Marcus, maybe, he would have felt excluded from the group. Because he is that shy, even more, we would be less interactive and less present in group discussions. I think thanks to this problem solving, we included him even more in the group. We pulled him in, because he was maybe going out because of that mistake in grading. I think that was a good thing to do!"* (Interview: Marie) Consequently, this resolution of emerging tensions within this observed team appeared not to affect the team's reflective discussion, as without this leadership activity the team would possibly have lost one of the team's dialogue members. Marie even acknowledged a positive effect of this collective problem solving on the team's reflection, as this team member felt assured and supported and therefore even felt encouraged to be more active in team discussions, thus sharing his insights and ideas with the rest of his team to an increasing extent.

The Role of Change-Oriented Leadership Activities in Team Learning:

Ina was usually the member of the team who engaged in **intellectual stimulation**, activities of the change-oriented leadership role. One of the members described her role in the team, *"Ina was very challenging…She always had the question, 'I do not know, but…'"* (Interview: Marie). By means of this intellectual stimulation, Ina encouraged team members to question their assumptions and to consider new points of view. Thus, collective insights seemed to be enforced by intellectual stimulation behaviors which inspired the team to question the status quo and to look at problems from different angles. Angelina, for example, pinpointed the fact that Ina induced others in her team to rethink sub-proposals, and granted Ina the role of being, *"… the one that was always ready to see, this and this could be improved, or I have a question here, can you explain this better because if I have a doubt maybe other people will have doubt, so it's better to*

clarify this." (Interview: Angelina) Hence, her intellectual stimulation behavior in the team led to a reframing of the team's undertaking. Marie acknowledged: "*Ina was always making the questions that questioned what we had all decided. So, I think that was very challenging for the group*." (Interview: Marie)

Additionally, field data revealed that Ina's intellectual stimulation leadership activity also encouraged discussions and insights beyond the team's boundaries. At one of the team's universe meetings, Ina induced another expertise team to realize that it needed to reconsider its expertise project. This again had a positive effect on her own team, as Marie explained, *"So, that was much more challenging for them and very useful for the whole universe and even for us, because we could find some connections with business policy with the people and so on."* (Interview: Marie) Hence, the team's reflection showed to be enhanced by member's intellectual stimulation activities.

The change-oriented leadership role was additionally operationalized through collective **boundary spanning**, which increased the amount and variety of information that was available to this observed team. It was important for external information, which individual team members had scouted, to be shared among team members so that all members could benefit from these external insights. Angelina described the process as, *"If I knew that a kind of information that was present in my interviews with an expert could be relevant to somebody else, I communicated this."* (Interview: Angelina) Thus, the team's insights increased when team members shared their results of boundary spanning activities. For example, at the beginning of the business policy phase, Marie contacted an expert in the wine industry and shared the insights she had gained with the rest of the team which, in turn, led to a better collective understanding of the Spanish wine market. Angelina recalled this as follows, *"Marie, when she did the first interview she wrote everything down, so everybody from the group could really see what were the questions she asked in the interview and the type of answer she received, because sometimes the answer were really relevant for our topics, because maybe there was a comment coming from this person that is working in that sector and that this expert was saying a general statement or the general trend of the winery industry, so that was really interesting because we as a team had then an internal perspective on this topic."*

(Interview: Angelina) Hence, the quality of collective reflections was enhanced through external insights when these were accessible to all the members of this team.

In a similar vein, also Ina's scouting activities led to the team's better understanding of their task context. At the beginning of the business policy phase, Ina was the one who scouted information about the worldwide wine industry. In a meeting observed, she encouraged the team to go through a consulting presentation which she found in her internet research. Members commented on this presentation and a discussion started to emerge based on Ina's detected presentation. The team members felt inspired by all the external insights Ina shared with her mates, as Marie acknowledged, *"It helped me a lot to see what was there and what she [Ina] found, hence to understand more also the market. Thanks to her presentation, thanks to all the graphs!"* (Interview: Marie)

Although the team reflection part of learning appeared to be positively influenced by the team's boundary spanning activities, the action part of learning, particularly the activity of transferring new information to others, seemed to be only partially affected. While team members encouraged each other to share important information with others outside its boundary, this exchange was limited, as externals did not welcome a high degree of collaboration.

Overall, these case study findings suggest that shared leadership composed of a task, relations and change substance of leadership encourage a team to engage in complete learning cycles. Leadership activities of these three dimensions of leadership stimulated learning in different ways when shared in the team. Leadership activities in the task-oriented role tended to force the action part of learning, though the reflection part was also encouraged. Activities in relations- and change-oriented roles tended to stimulate the occurrence of collective reflection. The following table displays the relationships of shared leadership in team learning.

Leadership Substance	Reflection		Action	
	Developing Collective Insights		Implementing Gained Insights	
Task-oriented	Descriptive Effect	Illustrative Data	Descriptive Effect	Illustrative Data
Collective planning	Team's need to plan stimulate members to discuss and reflect on project goals	"..clarify our understanding of the task, whether we have all the same picture of it." (Interview: Mathias) "…we did this meeting and we discussed, we brainstormed and then…we saw exactly which parts were coming up." (Interview: Marie)	Decrease of ambiguity; codification of collective insights through preparation of working plan	"So, how should we proceed in general, I think we should do a timeline! I think it is better if we set a schedule." (Observation of team meeting) "So first we differentiate the different topics, [and] we made a list." (Interview: Angelina)
Clarifying, reminding and coordinating team's objectives	Based on members' clarification, other members add new perspectives and new ideas rise	"Okay, now that we've decided these goals, we should go further and study what we want to do for this matter and this matter and this matter." And even in that some of us said, 'Yes, I also think that we should add to this, we should also study this and this.'" (Interview: Marie)	Maintaining task-focus; reinforcement of implementing collectively generated and discussed ideas	"…[Angelina] clarified it, so that it is assured that everybody knows what he or she needed to do, what is expected so that there is no double work in tasks." (Interview: Mathias) "…that was really necessary because if not we could go back on some points that we already discussed and that is actually the bad thing. If you have a team, then we need to interact with that and get along very well. We talk a lot easily, so we can lose the path maybe easily too, because you start talking about something, everybody gets along very well so it is talk and it is easy to go away from the subject. So, she [Angelina] maintained this focus by doing this. She maintained the focus on the goal, the focus on the steps. We are here, we were there last week, we want to be here at this time. So we need to work a lot." (Interview: Marie)
Collective monitoring	Task-related problems are detected and feedback is given through project update	"…we usually, always when we met we used it to discuss the progress we had done in our part and what we are planning to do the following days. Everyone would give an update of his part, the others would agree or disagree." (Interview: Marcus)	Enforcement of the action part of learning if collectively gained insights have been implemented	"So in the end, we were really controlling the different tasks of each single person and we were making progress in the general development of each task for each individual part of the project. That was really good because, in this way, you clearly see that everybody is working, everybody is looking actively for information and everybody is involved…" (Interview: Angelina)

Relations-oriented				
Building and maintaining members' relationships & collectively facilitating the resolution of tensions in the team	Open, trustful environment allows team members to have open reflective discussions	"…you feel comfortable and creativity comes when, once you forget about all of the other things you have to think of in a group work, then comes creativity, then it could be really creative, when you free your mind of other preoccupations you could have. And in my teamwork, I think, this preoccupation we did not have. Other teams maybe have the following, 'Can I say that? Is that going to offend somebody? Is this person going to do really with trust? Is this person going to do what he says? Are people listening to me? Am I saying something stupid, maybe people are afraid to talk because they say, Oh maybe this is, they have done is stupid?' And I think all these problems we did not have. So, thanks to that we could be really creative and we could really brainstorm." (Interview: Marie)		
Change-oriented				
Encouraging members to view points in a different way	Other team members consider new perspectives, reframe team's approach	"Ina was always making the questions that questioned what we had all decided. So, I think that was very challenging for the group." (Interview: Marie)		
Collective boundary spanning	Increase of team's insights when external gained insights are shared among members	"…when she did the first interview, she wrote everything down so everybody from the group could really see what were the questions she asked in the interview and the type of answers she received: because sometimes the answer were really relevant for our topics because maybe there was a comment coming from this person that is working in that sector and that this expert was saying general statements or the general trend of the winery industry, so that was really interesting because we as a team had then an internal perspective on this topic." (Interview: Angelina) "It helped me a lot to see what was there and what she [Ina] found, hence to understand more also the market. Thanks to her presentation, thanks to all the graphs!" (Interview: Marie)	Team members encouraged to share information with others outside its boundaries, exchange is limited as these groups do not show high appreciation for collaboration	"Sorry, but impossible to meet." (E-mail received from member outside own boundaries) "There was a meeting [with marketing] to avoid a disaster. It was not the case that we work closely together, only to know what each group was doing and to see that both projects go more or less in the same direction, are coherent. … But our feeling was that our team was open and accessible. Especially because we were always with many group members in the universe meetings. There we also gave some advice to other groups. Ina was really engaged in this. We had the feeling that the marketing team was really less motivated compared to our group." (Interview: Mathias)

Table 11: The Role of Shared Leadership in Team Learning (BPIS Team)

5 Case 2: MarkOP Student Team

5.1 Introduction

Data used as information for this second case study report was also collected from a team from the CEMS business project 2009, however from a different consultancy than for case 1. This time, I opted to study the marketing team of consultancy 3, as marketing seemed to the coordinator to be an important and active function within the universe. Additionally, longitudinal access to the marketing team was facilitated by the marketing tutor agreeing to support my PhD study.

During the first session of the CEMS project at ESADE, the coordinator of this project announced the composition of the three consulting companies and their expertise teams, respectively. After that, each expertise team received a brief introduction to each field. In this session, I asked the marketing team of universe 3 for its collaboration in this PhD project. After explaining the purpose of my study, it was agreed with this marketing team that I would observe and tape most of their team project meetings over the whole course of the business project, namely from February to the end of April 2009. Additionally, team members agreed to involve me in their project e-mail communication and to participate in subsequent individual interviews after project finalization. In total, I observed a) 19 team project meetings lasting between 30 minutes and two and a half hours, with the average duration of these meetings being around 60 minutes; b) a one-day visit to the client company and two half-day client company presentations at ESADE. Additionally, I gathered c) 239 e-mails from project members and conducted d) five individual team interviews which lasted around 90 minutes. Hence, the data contained in this case study report is mainly the result of direct observations, e-mail communication between the team members, and individual interviews (cf. Annex 11.2.2).

This chapter consists of four sections. The first part introduces the observed team, its task and the context in which this team is embedded. This is followed by a second part that focuses on the team's effectiveness. The third part discusses underlying factors for the team's effectiveness, and refers to leadership roles and team learning. The final section focuses on the role of shared leadership in team learning.

5.2   Team's Objective and Context

This student consulting team was made up of five international business students: Maria and Nina, exchange students originally from European universities, and Xavier, Vladimir and Thomas from ESADE, yet with international backgrounds. As in the first case study, the members were in their early to mid-twenties and did not know each other at the beginning of the project. Only two home ESADE university students, Thomas and Vladimir, had a nodding acquaintance with each other as they had both started the master program at ESADE together in 2008.

Winery Gimbert, the company which asked these students for this consulting service aimed to "*become an international prestigious winemaker brand*" (Presentation Gimbert II, February 2009) and operationalized it into more concrete goals, namely to "*increase the international sales from 16% 2008 to 40% in 2010 and to revise the discourse at Gimbert on the international level.*" (Presentation Gimbert II, February 2009) To do so, the representatives of Gimbert also asked this consultancy team for its advice. (For a more detailed discussion on Gimbert, please compare chapter 4.3 in previous case study 1 report.)

This observed consulting team was firstly in charge of the marketing analysis and, secondly, of the operations part in the decision phase. In accordance with case 1, this universe received from their client a reference point for each expertise area. For marketing, the representatives asked this team to "*revise the positioning and the communication of Gimbert's values in the global market*" and for operations to "*outline a more adequate traceability system – from the vineyard to the final client*" (Presentation Gimbert II, February, 2009) with the vision in mind of becoming an international winery.

To do so, this observed team started in the marketing analysis phase with a market research of the wine industry. In Nina's own words, "*The first phase was the analysis. This was important to get some understanding of the distributors* [wine distributors are Gimbert's main clients]. *Which are the most important? Are these distributors satisfied with Gimbert's collaboration? How can we push the label 'Gimbert' more in the market?*" (Interview: Nina) and was followed by the competitor analysis and

identification of new markets: *"We divided them into different parts, Prosecco, Champagne and Sekt [German sparkling wine]…. and then we had a part on country markets. Xavier did an overall analysis. He had a lot of data from the wine market and then he analyzed the growth of different markets, market size, consumption – he had a lot of quantitative and qualitative data and, based on this, he summarized the main countries. Based on these results, we investigated in more detail those countries we found most interesting, yes, for Vladimir most important Russia or Poland."* (Interview: Nina) Hence, in line with previous case 1, the challenge to the team was to present findings in an innovative way with in-depth analytical results.

Midway through the CEMS business project, the team switched from the analysis phase of marketing to the decision phase of operations (cf. Figure 15). That is why I named this team the MarkOP team. Hence, the team's task changed, though the membership remained the same throughout the business project.

Structure of Consultancy 3
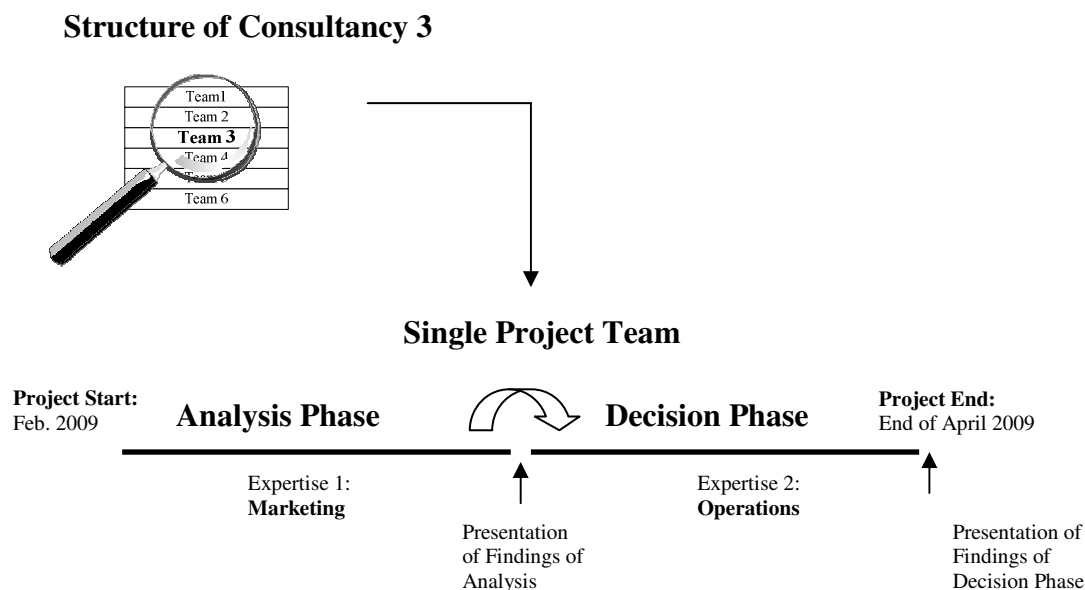
Figure 15: Overview of Case 2

Vladimir described the team's operation task as follows: *"Operations. So it was based on the previous research, based on the experience that was gathered or the data that we had, we had to develop a new or change it somehow or adapt it to the new reality or the actions that were taken by the other group. So we had to see what others are doing and how we can support it on the operations level. … So now it was not gathering*

information, but developing and indeed now trying to find some solution." (Interview: Vladimir) In this phase, the team's task challenge was to become acquainted with diverse knowledge fields. Particularly, the team's task was to support the main new business policy and marketing strategy and investigate how these new strategies would impact Gimbert in terms of its operation processes.

The team's task was shaped by its broader context; it was primarily shaped by the client company that had asked for this consulting service. Secondly, the team's task was impacted by the team's tutors who acted as feedback partners, although they granted high autonomy to this observed team.

Thirdly, the consultancy itself served as a further contextual dimension. Similar to consultancy 1 (cf. case report 1), members of this consultancy also determine a way to collaborate between these six expertise teams. In their first encounter with all members of consultancy 3, the members decided to define a leader for each expertise team who were supposed to meet once a week in order to share information among each other. They also appointed a universe leader who was supposed to take charge of these team leader meetings. In the first team leader meeting observed, the universe leader, a member of the business policy team, defined roles and responsibilities for each expertise team leader and distributed the following to all five team leaders via e-mail:

"2.) Roles and Responsibilities

- *Coordination/communication of information and questions*
    - *Each group leader will collect all questions and information from their respective groups and will be responsible for updating the others during our weekly Group Leaders' meeting*
    - *Please have the group leader be the central point of contact for all information and data requests*
    - *Critical questions and data requests should be communicated to the relevant group leader(s) on an as-needed basis*

3.) Group leaders' meeting

- ***Content****: Weekly updates and information-sharing session (please prepare a few points on what your group has worked on during the week). Also, questions for other groups as well as data requests should be brought up during these meetings*
- ***Time****: Mondays, 12pm*

- *Location*: *Sant Cugat campus*
- *Frequency*: *Weekly (depending on the agenda)"* (E-Mail: 13.02.2009)

This e-mail extract exemplified the functions each team leader was supposed to take on: the team leader was to play the boundary-spanning role and, in particular, be the transmitter of information between the different teams. In addition, the team leader was supposed to monitor his team's project development and, in turn, to update the other leaders of the team's progress. The team leader was additionally supposed to support the flow of information from the leaders' meeting to each expertise team so that the members of each team were updated on the main strategic approaches of consulting 3. In the observed team, the members nominated Nina as their team leader in the marketing phase and Vladimir in the operation phase.

5.3   The Project Team Meeting

From February to April 2009, I observed 19 project team meetings. Over the course of the project, members met regularly once a week, as described by one member: *"Somebody always met Tuesdays. Rarely were all members present and then only for half an hour or three-quarters of an hour. We never made a lot of progress in our meetings."* (Interview: Thomas)

Low attendance at team meetings was often observed over the course of the project. *"To meet altogether, this was impossible! And after some time, all of us just wanted to be left in peace because it didn't matter when we met, for one of us it was impossible to meet. I don't know how other groups managed that, but I am sure it was easier to meet altogether. In our case, there was always something. We did not even have a meeting with the tutor with all five of us. Not a single meeting!"* (Interview: Thomas) Although Thomas tried to arrange meetings when all members could attend, other members of the team did not show high appreciation of his undertaking. For example, at the beginning of the second phase, the team tried to find a time slot in everyone's agenda to arrange a project meeting. Yet, after some time of searching desperately for a common meeting time, Thomas took the initiative and sent the following to his mates*: "Guys, can you please all send your exact time tables for the Thursday and Friday? I attach a table where you can type in your availability. Send it back to me and I will try to see where*

we can schedule the meeting!!! Ok? We need a certain kind of flexibility and concession from everyone! A good start will be crucial if we want to avoid certain things that happened in the last phase! Hope you understand, this is otherwise going to be a never-ending story!" (E-mail: 11.03.2009) One of the members responded with the following: *"Thomas, you are already cheating on me??????? Seriously, congrats :) my attached stuff:)"* (E-mail: 12.03.2009) This response indicates that not every member ascribed high importance to a collectively attended project meeting. And even at this arranged meeting time, one other member could not attend.

Absence of some members at team meetings demotivated the rest of the team during the project. For example, in the middle of the first phase, the team members arranged to meet in order to discuss final conclusions and recommendations for the marketing phase. After some minutes had passed and two of the five members had not appeared at this arranged team meeting, the following dialog was observed:

Nina:" ….Should we start now, independent of Xavier and Maria? I am up for waiting always for them, honestly!"
Thomas: "We did agree to meet today, didn't we?"
At the end of this observed meeting, while Thomas was checking his e-mails, the following dialog was observed:
Thomas: "'We'll meet on Thursday? Xavier has written".
Nina: "No, not Thursday".
Vladimir: "No, no, I am not available. I have already planned something".
Nina: (looking at her cell phone) "Look! Marie has just sent me that she overslept. Is that why you have called her, Thomas?"
Thomas: "Yes, of course, if she would do us the favor and join the meeting!"
Nina: "And Xavier?"
Thomas: "I could not send him a SMS as I do not have his cell phone number"
(Observation of team meeting: 03.03.2009)

This piece of dialog exemplarily shows the absence of team members at meetings and particularly its impact on the rest of the team members: these members felt demotivated

and even showed less commitment to the team's project. Additionally, members felt less dedicated to agreeing compromises as to when and where to meet.

5.4   Team's Effectiveness

When looking at the internal and external assessment of team's effectiveness, this team performed rather poorly. In particular, the internal and external assessment of team effectiveness showed a low level of satisfaction in regard to the team's task output, team experience, and a low capability of working as a team together in future (Hackman, 1987).

The team members showed **low degree of satisfaction regarding the quality** of the two final project outputs of each phase. After finalizing the marketing phase, the team met in order to discuss their accomplishment of the project task. Especially Thomas and Nina admitted a low degree of satisfaction where the quality of the final marketing report was concerned. At this meeting, Nathalie acknowledged: *"I feel ashamed to hand in such an unstructured report."* (Observation of team meeting: 13.03.2009). Along the same lines, also Thomas evaluated the project report as, *"The report is only patchwork."* (Observation of team meeting: 13.03.2009). Although in interviews members all assessed the quality of the team's two project outputs as low: *"It was a catastrophic market research. We were not keen on following anything up. At the end we might have ten or twelve responses from distributors. This is far too little. You can never make meaningful recommendations based on this!"*(Interview: Thomas) In a similar vein, Maria also came to the same conclusion regarding the quality of the team's final outputs. She admitted: *"Obviously, it was not a tremendously good and very in-depth analysis…maybe I am just jealous of them [other external team of universe 3]. Our report was really bad compared to their report, not professional."* (Interview: Maria)

The team's low self-assessment was also confirmed by the tutors, who evaluated both project results as low, just passed. After receiving the marketing grade, Nina sent the following to her mates: *"I've just received our tutor's evaluation…and I am quite shocked. Honestly, I did not expect it to be that low"*. (E-mail: 07.04.2009) The team's

evaluation was also low in the second operation phase. In the interview, Maria remembered receiving the operation assessment from the tutor: *"We just got the mark… and he [the tutor] said that we were the worst team of all operations and that we lacked something…"* (Interview: Maria)

This low assessment was also reflected by the evaluation of expertise groups within the whole consultancy 3 when, at the end of the project, the universe members were asked to evaluate the performance of each group. This observed team was assessed as the team with the second lowest performance (internal information /evaluation received from project coordinator). In addition, members of this observed team realized that externals did not appreciate their performance. According to Nina: *"I think the others thought that we didn't have what it takes!"*(Interview: Nina) Along the same line, Thomas also remembered reproachful comments received from externals: *"The reactions of the others were highly critical. They asked highly reproachful questions: What is going on in your group? How can it be possible that …we caused serious hassle?"* (Interview: Thomas)

The low assessment of task output was also reflected in the **team's own dissatisfaction of team experience**. Victor assessed his team experience as: *"I am not really happy being part of this team…somehow there is a feeling that you are an outsider or you kind of felt a loser."* (Interview: Vladimir) He even acknowledged that, *"I think if we acted individually on our own, we would come up with a better result than as a group."* (Interview: Vladimir) Xavier also assessed his team experience similar to his mates: *"We are not so proud of it, because we knew we had difficulties doing it.*" (Interview: Xavier)

At the end of the project, some team members were at odds with each other and **did not show much willingness to work together in future**. Maria remembered one incident on the final day of the project: *"On the last day, I remember that because of this little conflict between Nina and Thomas, there was not even a huge intention of taking a photo together which was quite sad, because I felt that in some way we really had our good moments …Obviously I became really good friends with Nina, so it was so sad for me that we could not even do this final part and stand together for a nice photo. We*

have the photos, but maybe, it is only my feeling, that it felt like it was a forced photo, like 'Okay, okay, let's get it over with then'." (Interview: Maria) Hence, the team's experience of working together did not seem to enforce the capability to continue working together in future.

5.5 Factors Inhibiting Team's Effectiveness

In the interview, one of the team members claimed, *"I have the feeling that we would have been capable of doing the project better, but we could not and did not want to show it."* (Interview: Thomas) To understand the reasons behind the team's low effectiveness, I will refer to leadership and learning in this studied team.

In each phase, a single team mate took over a superior leadership role, including representing the team externally at consultancy 3. The first appointed team leader did not see herself in this superior leader role at the beginning, as Thomas explained, *"From the very beginning, Nina said that she did not want to be a real leader in the team"*, (Interview: Thomas) but most of the team members urged her to perform this superior role. Only Thomas tried to support Nina in her leadership role. In Thomas' own words: *"I sometimes had the feeling that we were both trying to do it together and to support each other. The others did their part when someone told them exactly what they were supposed to do. But they never brought anything in of their own accord which could have motivated us. They never showed initiative and responsibility. We [Nina and Thomas] needed to show them their responsibility."* (Interview: Thomas) Hence, the team relied to a great extent on this superior role and waited for clear instructions what to do.

I even observed some instances where the team leader found herself abandoned and needed to solve emerging task project challenges on her own. For example, at the end of the marketing phase, the team needed to come up with a new market research. Although Nina sent an email with *"we have a problem"* in the subject line (E-mail: 06.03.2009) which included the remarks received from externals, no one responded to this e-mail. Only Thomas, who was outside Spain during this weekend, wrote back with some suggestions and tried to force the other team mates to help Nina, as he replied: *"Sorry,*

this is all that came to my mind now. I'm sorry I'm not there to support you better. I hope you are able to provide Nina with some feedback and help. I'm surprised I'm the first to send a reply to her e-mail ;-). She's working her b... off to get these things going; I hope we're all aware of that!" (E-mail: 06.03.2009) In the end, Nina asked other members of the universe to help her to compile this still missing marketing task, as nobody else felt dedicated to working as a team together on this challenge. In a later observed meeting, when members were discussing this issue, Thomas stated to his mates, *"Hey guys, you thought that Nina would manage everything! That she would get us out of this situation."* (Observation of team meeting: 13.03.2009) This lack of project commitment and inherent excessive reliance of team members on the team leader in all areas related to the project was also observed in the second phase, when Vladimir took over the role of superior leader.

For Vladimir, this lack of commitment to the team's project was like a *"…contagious illness. I think everyone got sick at the same time. So I do not know if it was contagious or not. I do not know. But definitely it was like a plague that everyone felt the same and if we came to a meeting then just because we had to be there and something had to be done, otherwise we would have failed completely. But it was not like, 'Oh let's do it. Come on, we'll see this thing through and see what we can achieve.' So everyone just rushed out and that was it. So it was not really participative."* (Interview: Vladimir) Corresponding with this, the field data also only revealed a few instances where all the team members came together to think and reflect collectively on their project. Indeed, when team reflection was observed, this concerned the group process, how the group behaved, but rarely the team's project task.

In the course of the project, it seems that the low frequency and absence of leadership activities revealed little occurrence of team learning behaviors. Details of how leadership activities influenced team learning will be subject of later discussion. However, before going to this point, I will analyze first of all the nature of "shared" leadership in this team.

5.6 Nature of "Shared" Leadership

5.6.1 Leadership Substance: Task

5.6.1.1 Planning

As mentioned at the beginning of this chapter, this team was asked to advise the winery Gimbert on its internationalization proposals, firstly from a marketing analysis standpoint and secondly from an operation perspective. Hence, the team's overall objective was set by the client, whereas the team's responsibility was to prepare analyses and proposals in line with Gilbert's already set reference points (cf. chapter 5.2).

However, the team experienced difficulties in setting its goals in both phases. In the observed team meetings, it seemed that this team only engaged in few discussions on what the team aimed to achieve and expected to deliver. In the team's first observed encounter, each member received specific areas to research, although the definition of these areas was not the result of any research based on information gained from the company or other external sources, but were only based on common sense discussions (Researcher's diary). Thomas described the team planning their course of action as follows: *"We simply lacked structure. … We did not come up with any red line that we could follow during our project. We said we would do a little bit of research on distributors, a little bit on competitors, a little bit of market research – but nothing on a sound footing. Everybody just messed around a bit, because it was not clear what our main target was. We lacked the overall goal which we would have needed to orient ourselves. That was a big problem!"* (Interview: Thomas)

Vladimir also noticed that his team failed to make sense of what it was expected to do. Hence, this team experienced difficulties in coming up with a collective planning basis of what to do in the marketing phase. Only simple basic project activities were performed on an individual basis. In Vladimir's own words *"The problem was to see where you were supposed to go, because we never shared any tasks, we never shared any directions on where to go, so it was difficult for us - at least for me - to figure out what I was supposed to do. Then, if I did something, it was just a small task, but I could*

never figure out what is my contribution to the whole project of our group and what our group is contributing to the main universe strategy." (Interview: Vladimir)

Besides this, due to its failure to grasp the team's overall set goal, this team pursued an incorrect emphasis during the marketing analysis phase. The focus of this team lay on searching for solutions for increasing the winery's international sales, and not on the pure analysis of the sparking wine market as it was supposed to be. For example, in the first meeting observed, shortly after the project start, this team engaged in discussions about a new product mix and possibilities for international market entry after each member had done a short facile market analysis of different sparking wines overnight. I observed the following debate at the beginning of this meeting:

Thomas: "We have to focus on the products we want to go abroad with. At the moment they go with the 'El pimpollo'. The 'El pimpollo' is the cheapest [cava] of the products. It is not the prestige cava at all. The 'Grand Reserva' is a much more prestigious one than the 'El pimpollo'."
Maria: "Do they export it at all?"
Thomas: "Yes, they do. In my opinion, in too small amounts. So the question is what products we want to go with? What do we want to put in the marketing plan? What we want to focus on with each product? At what price? Then we have to look at the distribution channels. We have to differentiate between existing markets, how to distribute in those markets and if there is a way to change anything there. …We should elaborate what is possible in existing markets, change distribution channels, or add a new channel. And then we have new markets. We have to find a way to characterize the markets, markets we think we can get into, what makes sense. Asia, forget about Asia. It is not a wine culture. It is too much work, it is too far away. It is a mess. They have Japan. I think that is OK. But Russia is a big market. Former Soviet Union countries where there are lots of rich people! There are some countries we might go into."
Victor: "We don't need a big amount."
Thomas: "Exactly, we have to identify a strategy how to get into these markets. Do we collaborate? How do we make sure – Russia is a big market. Maybe - just focus on the two main cities. Have one guy there who knows people and can go to the restaurants. I think that will be a lot more promising."

Vladimir: "Nobody knows cava [in Russia], but we don't have any competition at all. Not one competitor. You could go there and be the first one. You have to establish yourself there. You have your name, and then..."

Thomas: "How would we define that with the airlines, for example?"

Vladimir: "This is our haute-cuisine. This is something brilliant! This is an excellent idea, because it is international!"

Thomas: "So there are existing markets, new country markets and new international channels."

Nathalie: "And new channels."

Thomas: "Yes, new channels, also something related to hotel chains, but we can only focus on one."

Nina: "Then we have to select an international airline?"

Vladimir: "We have to talk about that as well, or we have to move the structure from cheap wines to the upper class. This is how they have to promote it. This is what they can offer. They can go to KLM and offer them direct sales. I am pretty sure in every company you have some middle man – they don't buy it directly. We could say we would offer them premium wine, exclusively for them, for a really good price. It is absolutely premium quality. Everyone who lives in Spain would see the packages and say, 'Look, this is quality!'."

Thomas: "I think it is important to start the whole airline thing. Because if we realize that it is impossible to break into their product portfolio then we can forget about that."

(Observation of team meeting: 06.02.2009)

This piece of dialog exemplifies the emphasis on searching for solutions how to increase Gimbert's international sales by considering new markets like Russia, or even new channels like airlines. At the same time, however, this team paid only little attention to their actual external set goal, namely to analyze the international sparkling wine market and build the foundation for the next decision phase in order to take a marketing decision based on the analysis. In Vladimir's own words*: "So we made a big mistake when we were trying to solve the case, or solve the marketing problem, when we were just supposed to do the market research. …And we were lost. So in the first phase, we were just trying to find some solutions for marketing, but that was wrong. We were supposed to do the market research first, and we did not."* (Interview: Vladimir)

For Thomas too, the main problem in this phase was that this team did not set any clear directions: *"It was really difficult for us to define goals. We did not really know what we should do… That exactly was the problem in our group. If we had had a goal, then we could have oriented ourselves to this goal. We would have needed more goals for fields like competitors, markets and new markets. We would have defined, for instance, 'the goal for a new market is that we explore this, this and that'. But we failed to do this. And that is the moment when you need someone in the team who defines 'we will do this, this and that!'. But, we didn't have this in our team!"* (Interview: Thomas)

Although this team changed the official superior leader role to Vladimir in the operations phase, in this phase the team also experienced major difficulties in planning the actions that needed to be taken to put clear implementation proposals to the team's client. Contrary to the first task, the team members lacked general knowledge and experience in the field of operations management. This absence of knowledge in operations, and additionally little willingness to become more familiar with this area, again led to purposeless straggling along in the operation task. *"In the second phase, it got even worse. Because we did not have a clue about what one is doing in operations, and where we want to contribute. We met several times in the second phase, though without any results."* (Interview: Nina)

In the middle of the operations phase, for example, Nina expressed this lack of team's purposeful action. However, Vladimir played her concerns down by arguing that every project would start with a broad perspective and would successively narrow down the scope of the project. In the observed meeting, the following dialog was heard:

Nina: "Just one question for now. What is the purpose? Because on Thursday there is the meeting with Gimbert. Are we going to try to clarify our questions? And then what are we going to do? Are we going to investigate those questions in more depth? Are we going to do task-division for the Easter break? I don't know where to go, actually. I have felt very lost in the last two weeks in this project, because I am really not in operations, that is my first problem, then I don't have any guidelines what to do. And I don't really know what to do."

Vladimir: "The questions will define very many things… Everyone has some questions. It is a period where everyone has many things and then we will get down to our work." (Observation of team meeting: 31.03.2009)

Similar to the first phase, this team failed to grasp its initial position in what the client company needed in relation to operations in order to act on the basis of this team's action plan. *"In the second phase, we even had problems what could be our task division because we did not have more than titles! KPI [Key Performance Indicators], but okay, we said that KPI is done by somebody; 'but the initial problems?' that was the problem. So the general status was that nobody was making progress, because apart from titles, we really had nothing."* (Interview: Xavier) And this wandering about aimlessly was reinforced due to lack of appropriate knowledge in the field of operations, as Xavier followed on in the interview: *"The main problem we had was 'where to go', 'which areas to improve'. 'KPIs', all that stuff we did not know. We went to the library to get some books on these subjects, but we did not get any information, so we lacked things and knowledge to work on. I think that was the main problem."* (Interview: Xavier)

The team members' frustration increased over the second part of the project. In one of the e-mails, Thomas sent the following after receiving reproachful comments from other people at consulting 3: *"I'd appreciate it if we could talk about what we want to do next because I really don't know!"* (E-mail: 20.04.2009) Likewise, in the interview, Thomas explained an increase in the team's frustration: *"Then we got frustrated because we did not know what to do."* (Interview: Thomas). It was like a negative spiral in the team's dynamics in which the lack of a goal amplified the team's negative mood. Vladimir also indicated similar negative incidents resulting from the lack of collective planning*: "I remember a couple of his [Thomas'] comments. He said, 'Well, I do not know. We have a problem, like we have not done this, or this, or this, what shall we do now?' And this was a question to nobody in particular. He said 'What shall we do?' and there was nobody to answer this question; and he said, 'Well, I would do it, if I knew the task and there was nobody to give him the task, because the task was supposed to be elaborated within the group. So it was like a vicious circle, the group was to set out the task, but the group members said, 'Well, tell me my task!'."* (Interview: Vladimir)

Yet, in this team, the task of planning the team's action was regarded as the responsibility of the official team leader. *"Around the Easter break we had reached the point where we did not know which concrete directions we wanted to follow. And from my perspective, this is the role of the leader, who should say, 'These are the aims which we want to achieve; and the others need to follow this advice. Unfortunately, we did not have this!"* (Interview: Thomas) In a similar vein, Vladimir also admitted that his team neglected such leadership activities: *"The team leader is actually the one who sets the limits, who sets the direction, who puts everything together; and we did not have this."* (Interview: Vladimir) Hence, planning the team's actions was regarded by the team as being within the scope of activities of the leader, although the team leaders did not feel individually capable of accomplishing this.

5.6.1.2 Clarifying, Reminding and Coordinating the Team's Objectives

Reinforcing the team's goals seemed to be difficult to accomplish when the directions of the team remained only vague or were not defined at all. This interdependence between defining the team's goals and clarifying them was experienced by the team, as explained in the following: *"Our project was not structured. Team meetings were rarely structured due to the lack of an agenda. We only knew roughly what we needed to do. We did not have any timeline!"* (Interview: Nina) Over the course of the project, team members often felt lost as regards what to do and how to do it and asked the official team leader for guidelines. Thomas remembered such an incident: *"Nina certainly said three or four times that she didn't know what to do. Actually, she was right as nobody really knew what 'sales planning' was. And then she worked a bit on her own."* (Interview: Thomas)

This low frequency of clarifying the roles and objectives of the team was observed in both the operations phase and the marketing phase. Although Thomas or Nina sometimes summarized the content of a meeting and defined the task of some member in the first phase, these were not really precise summaries or definitions which members could have used to orient themselves (Researcher's diary). In the second operations phase, Vladimir put even less emphasis on this leadership activity. *"Too little came from Vladimir, too few e-mails with summaries of the next steps: 'What comes next? What's going to happen and when? When are we supposed to do it by?' Something*

which we could really have oriented ourselves to." (Interview: Thomas) This low level of coordinating the team members' actions often led to misunderstandings. At the end of the marketing phase, for example, the team was supposed to send the final report to the tutor. After a week had passed and the tutor complained about not receiving the team's final output, the team members asked each other in the meeting observed, *"Who has sent the report to Manuel [tutor]? Didn't you send the report to him?"*(Observation of team meeting: 17.03.2009) Afterwards, Thomas made an excuse about this absence of handing over the final marketing report*: "We're really sorry for the delay. We thought we had sent it to you, but apparently we sent it to many people, but not to you..."* (E-mail: 18.03.2009)

Hence, this lack of coordination often led to the fact that team members did not know what or which part each member was working on. *"Vladimir did not really manage to coordinate us. We all worked a bit on some parts, but nobody knew what the other members were doing."* (Interview: Thomas) In a similar vein, Nina acknowledged, *"Some parts were done which were redundant. Someone worked on parts which other members had already done…"* (Interview: Nina)

5.6.1.3 Monitoring

Low frequency in planning and clarifying roles and objectives also impinged on the team's monitoring of project progress, members' actions and outputs. Team members often worked individually on small, individual parts and *"messed around*" (Interview: Thomas). Vladimir explained this individual-oriented action as follows: *"We did not know which way to go as a group, and then everything felt apart and everyone was just an individual in the group…"* (Interview: Vladimir) This low level of togetherness in the team was continuous and also emphasized the team's low commitment to take some time to discuss and review the team's project. To point out the team's low level of monitoring, Thomas compared the basic idea of project team meetings with the actual procedure of the team: *"Two hours would be a good time if you have five different topics and need to discuss each one. Everybody would come up with a short status quo, 'Where I am currently? What is it about?' and then say, 'What are the next steps?'… an update and then see whether we were approaching the point we were supposed to be at:*

'Is the focus still correct?' In our case, first of all, we never managed to meet altogether, and we only had three-quarters of an hour. Of this time, we used up 10 minutes looking for a room where we could sit together. Then we looked briefly at where we more or less were in the project. Unfortunately, this wasn't really concrete. This was our problem." (Interview: Thomas)

For example, in the last official meeting in the marketing phase, the team members coincidentally addressed the availability of Gimbert's wine in Russia, and Vladimir had the idea to merge with a Spanish restaurant chain and enter the Chinese market. As a best practice example, he referred to the Spanish hotel chain 'El Paradores' which also ran a hotel in Moscow. This Spanish hotel locted in Moscow also had Gimbert's wine in its menu. Thomas was wondering about this fact, as the team proposed Russia as the main new international market to enter. Despite this, Nadine stopped this discussion due to lack of time. The following dialog was observed:

Vladimir: "I found out more about Moscow. At the 'El Paradores' - 'El Paradores' is a high-end Spanish hotel chain which is really great. One of their hotels is in Moscow, they have it in their offer. Not many, two different kinds of wine out of 20. There is potential."
Thomas: "Two bottles of cava? From Gimbert?"
Vladimir: "Exactly, two from Gimbert!"
Thomas: "So, Gimbert is in Russia. I thought we were proposing Russia! Who imports these bottles?"
Vladimir: "There are two companies. This is grey import, it is not official. I have asked two Russian distributors who would legally import our wines…. I think they were both a kind of middle men who again bought it elsewhere."
Nina: "Hey, boys and girls, I need to go. How are we going to do it?" [She was referring who was going to include all the individual slides in one final presentation]
(Observation of team meeting: 03.03.2009)

This piece of dialog exemplifies the team members' lack of commitment to spending time on discussing project proposals in more detail. Hence, any problems possibly

arising in the team's proposed approaches to the internationalization strategy could not be elaborated because of the time restriction of a single member.

This low frequency of monitoring and reviewing the team members' tasks was also observed when this team approached the end of each phase, when each member was expected to deliver something tangible. In both phases, the official team leader observed whether the member had delivered the assigned subtask, but lacked to review its content. For example, at the end of the first phase, the official group leader sent the following update on the team's status quo. In one of Nina's e-mails, she listed those members who still needed to hand in a single task: *"I wanted to give you a brief update concerning our group work: Last Friday was our internal deadline to hand in research results concerning the market/competitor analysis. I have received the general wine market analysis from Xavier and Thomas' cava competitor analysis. Furthermore, I sent in my results regarding Prosecco competitors. I am still missing Maria's and Vladimir's results. Do you think you could make it by Tuesday at the latest?"* (E-mail: 22.02. 2009)

In this vein, one of the members explained that the situation often arose in which the team leader waited for the receipt of all the members' subtasks. Hence, there was not much foundation for the leader to check the quality of a subtask when the team members handed in their work too late or did not hand it in at all. In Vladimir's own words*: "It wasn't possible, because there was nobody checking what we did. So in that sense, there was a lack of somebody checking because we had distributed the work among us all but then you were told you had not done your part, or that your part still had to be done!"* (Interview: Vladimir) After each member handed in project subtasks for each final presentation, I rarely observed that the team got together prior to the final presentations to discuss the whole project with regard to content. It appeared that the main focus in reviewing the team's project was only as regards a uniform format, for example, such as in the distributed e-mail written by Nina: *"It's quite problematic to put everything together when not everyone sticks to the given format. Maria, it's fine that you do it tomorrow, but that also means that I will not finish the presentation tonight. Xavier, please rework your slides, the bullet points are not correct, the heights*

are not the same and you have not ordered your slides according to the structure we agreed on." (E-mail: 04.03. 2009)

5.6.2 Leadership Substance: Relations

5.6.2.1 Building and Maintaining Members' Relationships

From the very first encounter in this team project, the members felt congenial towards each other. *"We all valued each other as a person. We all had a kind of good personal relationship to each other"* (Interview: Thomas) at the beginning of the project. Although members were on good terms in private lives, in their business project it appeared that there was no common foundation for the team's collective undertaking in terms of its project task. However, difficulties in the team's project arose when the members' individual actions increased. In the words of one team member: *"First of all [at project start] it was OK, but then we did not know which way to go as a group and then everything fell apart and everyone was just an individual in the group, but it was not a close-knit. The group was just a unit of five people but not more, unfortunately."* (Interview: Valdimir)

Right from the beginning of the project, nobody took charge of enhancing relations among the team members, even though they did not know each other at the start. Only after the first phase, when Nina felt the lack of support from the team in reconstructing the marketing presentation, she encouraged the team to meet in order to discuss the team's attitude. The team decided to go out for dinner. One of the members remembered this encounter as follows: *"It was the first time we had ever met on neutral territory, just in a restaurant, to eat together, to have a drink. It was little bit connecting for us all. So it just opened us all a little bit to each other. It made us all a bit more open to each other. But I do not think that it changed the old set of things very much."* (Interview: Vladimir) Yet Vladimir felt that this lack of team cohesiveness was impossible to change as a team leader in the second phase, after the members had worked so individual-oriented in the first phase. In his own words, *"So everything was already set, the whole group attitude, the whole atmosphere was already set up in the first phase, and then it was almost impossible to change it, and I could not change it."* He followed on by pointing out the lack of this leadership activity of building and

maintaining members' relationships at the beginning of this project: *"It is not necessarily Nina's fault, but if this had been done in the first phase, there would have been much a more pleasant, a warmer environment to work in. But we did not have this, and then of course it was impossible to change. Once everything is all set, once you have the attitudes and the group structure, then it is impossible - or almost impossible - to change it and, of course, I could not do it. That is why we had that attitude."* (Interview: Vladimir)

Over the course of the project, team members experienced situations in which they felt the lack of each other's support and even being isolated from the rest of the group. Nina remembered incidents in which she asked herself where the team was: *"There were really some cases at the end of the project which cast a negative light on our teamwork. Regrettably! I mean a kind of pro-active, team sprit; I haven't felt or seen it in our team!"* (Interview: Nina) In a similar vein, Vladimir also indicated the lack of team coherence in his team by arguing: *"I think everyone was doing his own part and there was no feeling of belonging, there was no sense of being part of one group and doing one thing. Everyone was doing his own stuff and was not even so eager to do so. I saw groups that were much more efficient and more of a group, in that sense, not like us."* (Interview: Vladimir)

This lack of team spirit led to a high proportion of individual work and, furthermore, to a low frequency of support for and interest in each other's tasks. Some members even felt afraid to ask questions. Maria appraised the team atmosphere as follows: *"I felt quite insecure in the group and in the whole project… I sometimes think it is because I was not that very explicit at the beginning and they knew that I had less experience in business matters than they had; I was not taken as seriously as they would take one another, Nina and Thomas."* (Interview: Maria) Likewise, another member assessed the climate in the team: *"I think they did not care. And they looked after their own part; everyone had their own problems, their own part to play and that was it. And their communication, even during meetings, was very cold, as if there were some barrier…"* (Interview: Vladimir)

5.6.2.2 Facilitating Resolution of Tensions in the Team

As shown above, the team's low frequency of building and maintaining members' relationships as a leadership activity led to the fact that members assessed the climate in the team as particularly individual-oriented. In one team member's own words: *"There was no sense of belonging to one group and doing one thing."* (Interview: Vladimir) Consequently, some of the team members felt left alone as they did not feel any support from their mates.

Particularly Nina felt this lack of support from her team. Over the course of the project, minor tensions developed as conflicts between Nina and the rest of the group. According to Thomas: *"At some point, Nina started to have problems with the team's way of working and functioning. She still felt left alone."* (Interview: Thomas) Shortly before the final presentation, Nina articulated her enragement at her team's inability to function efficiently by pointing out the team members' lack of support to her in one incident when presenting preliminary findings to other members of the universe. Nina circulated the following to her mates via e-mail: *"Two other points which are important to me, but which I have not yet communicated: 1. I really did not like not getting any support from you in my argument with IS. When they were arguing about the software, none of you said a f... word, except Xavier. That really makes me angry, as this topic did not only concern my part of the presentation, but the presentation as a whole. 2. Why did you think I had to be at the front again when it came to answering questions at the end of the presentation??????????????? I do not understand why Thomas and Vladimir thought I had to go??? Well, I don't know if it is worth clearly expressing my views so close to the end of the project, but I want to avoid getting really furious."* (E-mail 28.04.2009) Although Nina received some assuasive words from her mates, these tensions were not solved and discussed within the team. Via e-mail, Nina received the following response: *"Concerning some minor misunderstandings during the discussion - I did not mean to hurt you or anything similar."* (E-mail: 28.04.2009) However, the team did not come together to facilitate in solving Nina's furiousness. One member even indicated that he would elude topics which were related to the project task. In his own words, *"Well, she [Nina] put that clearly in some mails. And I want to avoid discussions that are secondary like that one. I will discuss the content of the work and*

not whether she felt alone, whether I helped her or did not help her, because then we would lose even more time." (Interview: Xavier)

This lack of facilitating the resolution of tensions between team-mates led to members' being at odds with each other. At the end of the project, the members finalized the project separately. Thomas appraised the relations to Nina at the end of the project as follows: *"I think now Nina hates me! It's a pity – in the last two or three days! Everything has gone to pieces!"* (Interview: Thomas) In a similar vein, Maria also remembered the squabble at project end: *"…like, 'Oh, I hope you have a great summer! Bye, bye.' We did not actually end on such good terms because I think Thomas is very disappointed. And he, I think he cursed too much, he showed it too much. Because at the end he got a little bit cross with Nina as well."* (Interview: Maria)

5.6.3 Leadership Substance: Change

5.6.3.1 Intellectual Stimulation

Intellectually stimulating activities were directed at questioning the team's process functions and rarely at task related assumptions by the team members. Over the course of the project I even observed that two team members translated externally perceived team feedback in more harsh terms so that other team members felt the need to react to this perceived appraisal (Researcher's diary). For example, at the end of the operations phase, the team submitted its final presentation to its tutor shortly before the deadline. Yet the tutor was more than skeptical of the team's output and recommended that they reframe the whole presentation. After this feedback meeting, the following dialog was observed:

Vladimir: "I think he [the tutor] gave us some criticism, but it tastes of vanilla!"
Nina: "Vanilla?"
Vladimir: "Yeah, that means it wasn't that bad!"
Thomas:" Sorry, Vladimir! Did you attend the same meeting as me in the last 45 minutes? We have hardly anything that is going in the right direction. The tutor - I think we - one should not say that we are not in such a bad position. Then we would all be

wearing rose-colored glasses!! It is so far away from where we are supposed to be in the project…. We are really lost."
(Observation of team meeting: 23.04.2009)

This piece of dialog also shows the various perceptions of the members when evaluating the team's performance. Vladimir tried to play down the feedback received from the tutor, whereas Thomas encouraged the others to be more critical and even enforced the feedback gained in order to react to it. Despite this, in Thomas's opinion, most of the team members tried to avoid critical discussions within the team. Only Nina also tried to stimulate her team-mates to rethink their approach. In Thomas own words: *"If something came up that related to challenging our team process, it was either from Nina or from me. From the rest, there was nothing…the others tried to stay out of the way of problems and conflicts."* (Interview: Thomas)

For example, at the end of the marketing phase, Thomas and Nina were the ones in the team who encouraged the team to discuss the team's capabilities. In one of the e-mails, Thomas wrote the following: *"There's work to be done, but if we plan it well from day 1 and draw the right conclusions from phase 1, we should be able to have a more relaxed time than during phase 1 ;-) "* (E-mail: 11.03.2009) Thomas and Nina's willingness to change the team's process was reinforced after both recognized the mismatch between their team and the previous operations analysis group during a predetermined meeting in order to transfer results to each other. Thomas remembered the situation as follows: *"…we were outtalked. It was the same with operations. Don't you see the difference between what the operation analysis team 1 did and what we did? Do you see the discrepancy? There were some members who did not recognize it; they did not perceive it as important."* (Interview: Thomas) Over the course of the business project, Thomas and Nina tried to encourage the others to rethink the team's general functioning, including the motivation of its members, the quality of the tasks and the time spent on this project. Hence, this stimulating behavior related to the general process functioning of the team, however no clear critical advice was given in the team about the subtasks of the other members.

5.6.3.2 Boundary Spanning Activities

The team's boundary spanning involved two main activities, scouting to information from external resources and collaborating with others outside the team. Yet data revealed that both boundary spanning activities were only partially executed.

Particularly in the marketing analysis phase, this team omitted to intensively scan the task environment in order to be capable of defining trends in the winery market which would serve as the basis for recommending new ways of achieving the client's internationalization proposals. Everybody did a little bit of everything, yet the team did not scout intensively and systematically for information on the sparking wine market. According to Thomas: *"We said we would do a little bit of research on distributors, a little bit on competitors, a little bit of market research – but nothing on a sound footing. Everybody just messed around a bit, because it was not clear what our main target was. We lacked the overarching goal which we would have needed for orientation."* (Interview: Thomas)

To obtain information on Gimbert's main clients, the wine distributors, the team decided to send questionnaires to international distributors in order to grasp the client's need and possibly win new collaboration partners for Gimbert. Each team member was responsible for different countries, including each member's home country. Thomas encouraged the team to dig deeper at the selected distributors after sending the questionnaire to assure a higher response rate and hence a greater amount of information about Gimbert's clients. In one of Thomas' e-mails, he indicated the following: *"Anyway, I think it would be important to send out these questionnaires relatively soon. Send them up front but then call them to get feedback. He [tutor] said they'd never write the answers. So we should mention this when we address them; that we will call them and that they can answer the questions they want."* (E-mail: 20.04.2009) Although Thomas reminded his mates to call each distributor after sending out the questionnaire, the final output of this survey was limited. In the interviews, the members also assessed the quality of the team's two project outputs as low: *"It was a catastrophic market research. We were not keen on following anything up. In the end we had maybe ten or twelve responses from distributors. This is much too little. You can never do meaningful recommendations based on this!"* (Interview: Thomas) Even after

finalizing the marketing phase, this team had not concluded theirs survey. However, Thomas felt the need to follow on with this task even though the team was working on operations. In the first operations meeting, he suggested talking about the questionnaires which they had sent to the distributors and claimed the following: *"We have to meet and call the distributors again – this is part of our job left over from Marketing."* (Observation of team meeting: 16.03.2009)

The identification of new international markets was not so profound according to assessment by team members: *"…and then the new markets, Poland and Russia!! Yeah, we presented Poland and Russia as potential new countries to enter. Why*? [Thomas was laughing] *We did a country analysis and looked up some key data. That wasn't well-founded. 'We can enter this market because there is only a little bit of growth and people drink sparking wine. That's it!' – To be honest, because Maria came from Poland and Vladimir from Russia, the new country selection to enter resulted from this fact. Both did most of the research in this section, and both recommended entering these two countries."* (Interview: Thomas) Hence, both team members relied on their personal experience as residents of the respective country when proposing new markets for Gimbert. Yet, other members doubted whether these proposed entry markets, Poland and Russia, were the result of an extensive, in-depth, external, new market research.

In the operations phase, this low frequency of scouting for information outside the team's own boundaries had a great influence on the team's actions. *"We did not have a clue about operations,"* (Interview: Thomas) acknowledged Thomas when recalling the start of the operations phase. Despite this, the team members were still not over-eager to acquaint themselves with this knowledge area. At the beginning of this phase, the members agreed to read the previous analysis reports in detail to get some knowledge of this task. According to Thomas: *"Again, everybody did something, but nobody really knew what each of the others was doing. We said 'Please, everyone, read what we've got from the analysis phase 1. Please find out about this, this and this! Make sure that you know what the others are doing.' But, actually, none of us took this seriously and did that!"* (Interview: Thomas)

Although I observed once that one team member searched for books on operations in the library, this research did not seem very profound or targeted, two operations management books were randomly selected (Researcher's diary). Xavier remembered this incident as follows: *"...We went to the library to get some books on the subject, but we did not get any information, so we lacked things and the knowledge to work on. I think that was the main problem."* (Interview: Xavier) Even shortly before the end of the operations phase, after presenting the team's project to members of consulting 3, Thomas recognized this lack of external research. He wrote in his e-mail*: "Following the group presentations today there are a number of things I think are important to share/mention: Compared with most of the other groups, we're only scratching on the surface with our propositions. We're not going deep enough and I think we don't have enough research and data to back up our propositions...."* (E-mail: 20.04.2009) In a similar vein, after the project had been finalized, Nina also appraised the lack of externally acquired knowledge by acknowledging her lessons learnt from this project phase. According to Nina, for a future project, *"I would familiarize myself better through literature. Also I would read some theories of operations... from books..."* (Interview: Nina)

Similar to the low level of scouting activities, this team also engaged in very few boundary spanning activities as regards coordination and collaboration with external groups. As designated by consultancy 3, only one team member - the official team leader - attended the weekly group leader meetings. Yet, in particular in the second phase, the team members criticized the inferior standing which the team leader took when representing the operations group. For example, after one group leader meeting, Vladimir distributed the following to his team: *"Hi guys, just a short report on today's meeting - there was nothing special, some organizational issues..."* (E-mail: 23.03. 2009) The rest of the team members doubted the low level of information obtained from these group leader meetings. For example, in one meeting observed, Vladimir wanted to get together with another team leader from consulting 3 while this group was meeting. Nina asked Vladimir reproachfully why he did not discuss these issues at the leader meetings; at the same time, she asked about the content of the last team leader meeting. The following dialog was observed:

Nina: "I think it is more important to clarify the stuff in our group before clarifying things with others. That's what the leadership meeting is for. What is the result?"

Vladimir: "From Monday?"

Nina: "That is a second topic. That is what I was trying to illustrate."

Thomas: "We are the only group that is not featured on the memo. All the other groups have points, but we are not even mentioned. 'Operations' does not exist!"

Vladimir: "They have issues, we don't. What can we do!?!"

Thomas: "HR doesn't have any issues either. They were also apparently able to do something – or at least they are on the memo."

Nina: "Which memo?"

Thomas: "The minutes of the meeting."

Nina: "I got the e-mails twice from yesterday, and it was only 'Yes, we did not discuss any relevant issues'. Then I ask myself, you know, why do they meet? Or why do you meet, when it is not relevant to us!"

Vladimir: "The bottle, for example, what it looks like. What can I do as operations?"

(Observation of team meeting: 31.03.2010)

This piece of dialog exemplifies the member's skepticism about Vladimir's performing the role of a team representative in consulting 3. In general, Thomas was doubtful about the relevance of these team leader meetings. Likewise in the marketing phase, when Nina was in charge of representing her team in consulting 3, this team also took over a less embedded position in consulting 3. Thomas assessed their isolated position in consulting 3 as follows: *"Most of the time, Vladimir was at the meetings [in phase 1] but nothing was gained from the meetings. In Phase 1, Nina went to the meetings. But we never met as a team with others. We did everything on our own. This is strange when you compare how much marketing and strategy [in phase 2] worked together. We didn't have a clue what the other groups were doing."* (Interview: Thomas) Thus, data revealed that over the course of the whole project this team engaged in low frequency of boundary spanning activities, both in scouting for external information and collaborating with external teams.

In sum, case study data revealed that this team engaged in a low frequency of leadership activities in each of its three activities (cf. Table 12).

Leadership Substance	Leadership activities	Illustratve Data
Task-oriented	Planning	"We did not come up with any red line that we could follow during our project. We said we would do a little bit of research on distributors, a little bit on competitors, a little bit of market research – but nothing on a sound footing." (Interview: Thomas) "The problem was to see where you were supposed to go, because we never shared any tasks, we never shared any directions on where to go, so it was difficult for us - at least for me - to figure out what I was supposed to do. Then, if I did something, it was just a small task, but I could never figure out what is my contribution to the whole project of our group and what our group is contributing to the main universe strategy." (Interview: Vladimir) "The team leader is actually the one who sets the limits, who sets the direction, who puts everything together; and we did not have this." (Interview: Vladimir)
	Clarifying, Reminding and Coordinating Team's Objectives	"Our project was not structured. Team meetings were rarely structured due to the lack of an agenda. We only knew roughly what we needed to do. We did not have any timeline!" (Interview: Nina) "Too little came from Vladimir, too few e-mails with summaries of the next steps: 'What comes next? What's going to happen and when? When are we supposed to do it by?' Something which we could really have oriented ourselves to." (Interview: Thomas) "Vladimir did not really manage to coordinate us. We all worked a bit on some parts, but nobody knew what the other members were doing." (Interview: Thomas).
	Monitoring	"Two hours would be a good time if you have five different topics and need to discuss each one. Everybody would come up with a short status quo, 'Where I am currently? What is it about?' and then say, 'What are the next steps?'… an update and then see whether we were approaching the point we were supposed to be at: 'Is the focus still correct?' In our case, first of all, we never managed to meet altogether, and we only had three-quarters of an hour. Of this time, we used up 10 minutes looking for a room where we could sit together. Then we looked briefly at where we more or less were in the project. Unfortunately, this wasn't really concrete. This was our problem." (Interview: Thomas) "It wasn't possible, because there was nobody checking what we did. So in that sense, there was a lack of somebody checking because we had distributed the work among us all but then you were told you had not done your part, or that your part still had to be done!" (Interview: Vladimir)
Relations-oriented	Building and Maintaining Members' Relationships	"First of all [at project start] it was OK, but then we did not know which way to go as a group and then everything fell apart and everyone was just an individual in the group, but it was not a close-knit The group was just a unit of five people but not more, unfortunately." (Interview: Valdimir) "It was the first time we had ever met on neutral territory, just in a restaurant, to eat together, to have a drink. It was little bit connecting for us all. So it just opened us all a little bit to each other. It made us all a bit more open to each other. But I do not think that it changed the old set of things very much." (Interview: Vladimir) "There were really some cases at the end of the project which cast a negative light on our teamwork. Regrettably! I mean a kind of pro-active, team sprit; I haven't felt or seen it in our team!" (Interview: Nina)
	Facilitating Resolutions of Tensions in the Team	"At some point, Nina started to have problems with the team's way of working and functioning. She still felt left alone." (Interview: Thomas) "Two other points which are important to me, but which I have not yet communicated: 1. I really did not like not getting any support from you in my argument with IT. When they were arguing about the software, none of you said a f... word, except Xavier. That really makes me angry, .. Well, I don't know if it is worth clearly expressing my views so close to the end of the project, but I want to avoid getting really furious." (E-mail) "Well, she [Nina] put that clearly in some mails. And I want to avoid discussions that are secondary like that one. I will discuss the content of the work and not whether she felt alone, whether I helped her or did not help her, because then we would lose even more time." (Interview: Xavier) "I think now Nina hates me! It's a pity – in the last two or three days! Everything has gone to pieces!" (Interview: Thomas)

Change-oriented	Encourage Members to View Points in a Different Way	"If something came up that related to challenging our team process, it was either from Nina or from me. From the rest, there was nothing…the others tried to stay out of the way of problems and conflicts." (Interview: Thomas) "…we were outtalked. It was the same with operations. Don't you see the difference between what the operation analysis team 1 did and what we did? Do you see the discrepancy? There were some members who did not recognize it; they did not perceive it as important." (Interview: Thomas)
	Boundary Spanning	"It was a catastrophic market research. We were not keen on following anything up. In the end we had maybe ten or twelve responses from distributors. This is much too little. You can never do meaningful recommendations based on this!" (Interview: Thomas) "Again, everybody did something, but nobody really knew what each of the others was doing. We said 'Please, everyone, read what we've got from the analysis phase 1. Please find out about this, this and this! Make sure that you know what the others are doing.'But, actually, none of us took this seriously and did that!" (Interview: Thomas) "…and then the new markets, Poland and Russia!! Yeah, we presented Poland and Russia as potential new countries to enter. Why? [Thomas was laughing] We did a country analysis and looked up some key data. That wasn't well-founded. 'We can enter this market because there is only a little bit of growth and people drink sparking wine. That's it!' – To be honest, because Maria came from Poland and Vladimir from Russia, the new country selection to enter resulted from this fact. Both did most of the research in this section, and both recommended entering these two countries." (Interview: Thomas) "We didn't have a clue what the other groups were doing." (Interview: Thomas)

Table 12: Leadership (MarkOP Team)

5.6.4 Rotation of the Leadership Position

In this team, only a few of the team members actively established project progress. The official group leader was supposed to be the one who should have actively guided the team through its project. Hence, the team leader position aimed at representing the team outwards in a predetermined role as defined by consultancy 3, and additionally at taking a superior "leading" role within the team, although this did not correspond with Nina's initial opinion of being the group representative. Thomas recalled this divergence in role allocation: *"She counted on our leadership support. Then she said she would take it [the group representative role] over,"* (Interview: Thomas) who continued by explaining the actual role allocation: *"The person who took over the leadership was the person who represented us outwards and this, in theory, should have been the person who knows best what everybody is doing."* (Interview: Thomas)

Along the same line, Maria also indicated that Nina took over more leadership activities than a person in this "group representative" position was supposed to do. In her own words: *"Well, in principle the leader was supposed to be responsible for letting other leaders know what we were doing, just the role of information sharing. And then building up the structure more or less for the whole universe and transmitting it to us.*

But, in fact, the role of the leader in our group was far more than that. The leader in the first phase was Nina, basically because she was a very ambitious person and she wanted to do it, and she felt it was right to do more than normal. She just saw that nobody would do it if she did not do it, and we got used to it." (Interview: Maria) Maria's appraisal of role allocation indicates that most members relied to a great extent on this superior leader position, showing reactive behavior and waiting for clear instructions what to do in their project. Maria described her role as a team member as follows*: "I did not feel like a leader at any time…because yeah, I was just doing what I was supposed to do. We decided, maybe sometimes jointly, how to divide the work and I was just trying to do my job. I did not try to get any information from anybody. I just got good instructions from one person, from Nina…I had to rely totally on what others said."* (Interview: Maria)

Only one member tried to support the official team leader during the first phase in defining and making sense of the team's goals. Thomas explained his emergence as a co-leader as follows: *"I tried to support her, whatever I could do, in summarizing e-mails, yeah, I tried to support her. And, initially, I wanted to keep on like this. But when I realized that nobody from us pitched in, then it was clear that I needed to do it…In the first phase, Nina and myself complemented one another"* (Interview: Thomas) Nina also confirmed this leader role distribution between these two members. In her own words: *"For me, Thomas was the leader as well as me. We both shared this role. Thomas is a really proactive person. He acted like a leader."*(Interview: Nina)

But the rest of the team members did not appear to engage in leadership activities: *"The others did their part when someone told them exactly what they were supposed to do. But they never brought anything in of their own accord which could have motivated us, They never showed initiative and responsibility. We [Nina and Thomas] needed to show them their. I definitely did not perceive any leadership from the others."* (Interview: Thomas) Additionally, Nina pointed to the fact that she needed to force her mates into doing assigned tasks during the first phase: *"You have to keep pressing the team members all the time. And this is exhausting for both the leader and the members."* (Interview: Nina), adding *"I did not want to be regarded as the superior leader of the*

team. But I think because I was dominant at times, I automatically appeared as the superior in the team." (Interview: Nina)

However, since Nina often felt she was left alone and did not sense any support from the others - for example, for the final reconstruction of the marketing phase when she needed to ask others in the universe to help her with this team task - Nina decided to resign as the official leader of this team. After the marketing presentation, Nina sent the following to her mates: *"A new group leader must be appointed for the second phase. The next group leaders' meeting is already set… so it would be good to determine who is going to lead our group for the next weeks asap."* (E-mail: 10.03.2009) Vladimir appraised Nina's resignation from the official leader role as follows: *"It was a little bit difficult to organize and control everything, so I think she was just fed up with it and she did not want to carry on with on it, so she wanted to remove all the responsibility from her."* (Interview: Vladimir)

In one of the first team meetings in the operation phase, Vladimir committed to replace Nina's official group representative role. Although Thomas was regarded as the one who should have take over this position, he admitted to not having the time and effort to discharge this leadership position successfully. Yet, he acknowledged that he would continue supporting Vladimir, the official team leader in the second phase. After this meeting, Thomas sent meeting minutes with the following comment: *"Regarding group leadership: Vladimir will take over Nina's part. I will join him at the team leaders' meeting to get an idea of what the others are expecting from us. BTW: anybody is welcome to join us. But thank you Victor for sacrificing yourself."* (E-mail: 14.03.2009)

Similar to the first phase, this time most of the team members also continued to act reactively and asked the official team leader to define goals and distribute tasks. For example, in the middle of the second phase, one of the team members asked Vladimir, *"Anyway, can we please divide the tasks again? Because I have two days left to work hard on it, but to be honest I don't really know what the freaking specific task is, God, so desperate! Vladimir, can you please delegate the work????????? Would really appreciate it."* (E-mail:07.04.2009) However, although Vladimir took over the official team leader position, he neglected to regard and to lead the project from a holistic team

standpoint and merely concentrated on his own individual subtask. Xavier explained Vladimir's performance as a formal leader: *"Because you as a leader need to have the ability to view the project from a helicopter perspective, to have the general overview. And Vladimir is a specialist in concentrating on tiny details, and this is not compatible with having a broad vision. This is the main explanation. And not watching out for others, not looking what the others are doing. If Vladimir is doing something, he knows how to focus on his issue but not how to ask so much of the others."* (Interview: Xavier)

As a reaction to this absence of internal leadership, Thomas tightened his position and emerged as the superior in the team. In one member's own words: *"In the second phase, well, Vladimir was not a leader. He emerged as the head of our group [official group representative], but he was not a leader, so we had no official leader, and then somehow Thomas appeared there and organized the ideas. In that sense, he emerged as a leader."* Likewise, Thomas acknowledged that he took over the leadership in the second phase due to Vladimir's low level of activity in this role. In Thomas' own words*: "After seeing how others performed, we tried to get our act together for the second phase! There at Starbucks, we said 'Let's do it!' I wrote everything down. I sent all the graphics around, all the steps and our targets. For the meeting with our tutor, I asked what are our questions and issues were. I really tried to push our team. I hoped Vladimir would do it. In my opinion, this is the function of the leader. Usually, he needed to urge the members to do their tasks, to specify the targets, and to come up with a 'to do list'. But I had to take on these tasks. I felt I had to do so. Because once the first phase was over, and had been poorly performed, we said 'We have to improve', it doesn't work like that."* (Interview: Thomas) In particular, at the end of the operations phase, when the team received harsh feedback from members of consulting 3 and from the team's tutor, Thomas took over the leadership role in managing the team's project. Thomas distributed the final feedback from the tutor to those members who had not attended this meeting, including the following: *"Since none of you have replied, I want to give you a little update on where we are right now. The meeting with the professor was quite disappointing. He saw no structure, did not see how our proposals connect with the findings from phase 1, nor did he see how we contribute to the overall goal."* (E-mail: 24.04.2009) A few days before the final presentation, Thomas again defined

the team's new target, reconceptualised the whole structure of the operations task and delegated some minor tasks to Nina.

All in all, over the whole course of the business project, Thomas and Nina appeared to be the most dominant and leading members in this observed team. They were mainly the ones who took charge of managing the team's task though at different points in team's life. The other three members usually worked individually on a single minor task, so were not deeply embedded in the team's overall project. Maria explained vividly the team role influence model in her team: *"So it was obvious then that Nina and Thomas supported each other with their experience and were always, like, discussing with each other. Xavier did not speak at all …and sometimes I felt that maybe there was too much focus on the two of them, just Thomas and Nina, the superiors in the team. So I would say, like, the two of them were at the top of the team and then there was a little arrow pointing at Xavier and a slightly bigger one at me and maybe more or less the same at Vladimir, but that does not mean that Xavier did less, he just did not interact with us via email or in person."* (Interview: Maria)

After having analyzed team's nature of leadership and its emergence, I will focus now on team's engagement in learning.

5.7   Team Learning

5.7.1 Reflection

5.7.1.1 Seeking Help and Feedback

Field data identified only a few sets of activities which members used to induce other team mates to participate in problematic situations. On the contrary, team members were engaged highly individually in small, less interdependent subtasks. In this sense, Vladimir, for example, was regarded by one of his mates as a team member who, *"… at all costs needs to do his own thing, because he thought that would be the best idea, and often without any kind of relation to the team's main task or what we were doing as a team."* (Interview: Thomas) In a similar vein, Xavier also paid little attention to teamwork and was regarded as, *"...the ghost, he rarely attended our meetings"*

(Interview: Thomas). Thus, over the course of each phase, members were mainly working individually on basic project actions that had little relation to each other's subtask. Vladimir explained this individual focus as follows: *"I think they did not care [about each other's part]. And they only looked at their own part, everyone had their own problems, its own part to do, and that was it."* (Interview: Vladimir)

Nina was the only one in the team who actively tried to receive feedback from her mates. From time to time, when circulating her written parts, she first thanked her team colleagues for giving her feedback. Additionally, it was observed that Nina tried to approach her mates when experiencing problematic situations; in particular, she often asked Thomas for advice. Thomas acknowledged: *"Nina, she often complained that she didn't know what to do."* (Interview: Thomas) Primarily after receiving critical feedback from externals, Nina asked Thomas for his help. For example, at the end of the marketing phase, the team, except for Thomas, presented its final analysis to the designated tutor shortly before the team's final presentation. However, the team's tutor regarded the marketing analysis as incomplete and advised, amongst other things, expanding the team's thoughts about the cava market. Thereupon, the team briefly discussed the received feedback and immediately split the new task among the various project members. After this meeting, Nina updated Thomas about on tutor's feedback and asked him for assistance via e-mail*: "Thomas, you have more insight into the cava industry. Could you help me with the research?"* (E-mail: 06.03.2009)

However, the business policy team from consulting 3 and the tutor also disagreed with the team's marketing analysis proposal and were adamant that a segmentation analysis needed to be done by the marketing team. Nina as the official team leader received this harsh external feedback and immediately informed the rest of the team via e-mail with the subject: "W*e have a problem,"* including the following: *"He said that the country analysis does not help at all and that two essential parts are missing…He said that our analysis is the worst of all groups. That's quite hard feedback, but I think it's good to know right now in order to make modifications and not be stuck on Monday, then we obviously have to do more analysis to back up our presentation. The key success factors, they would be easier to do than the segmentation analysis; in the latter case I do not know how to start yet. I would say we should wait for the feedback from our*

professors and hope we hear something tonight. If not, we'll have to do a task division tomorrow and see how to proceed….. For the rest, we'll have to discuss. Hope to hear from you soon!" (E-mail: 06.03.2009) With this e-mail, she clearly indicated the need for help from the rest of the group.

Although the team experienced many problems related to its task, the members still did not manage to fully leverage on their tutor's feedback. Over the course of this project, the team never attended a tutor's meeting with all its members. One team member acknowledged: *"In our team there was always something. We did not have a single meeting which all five of us attended. Not a single one!"* (Interview: Thomas) Additionally, at most of these meetings observed, the team was not well prepared. On the contrary, I observed that team members even went to these meetings "empty-handed" and expected the tutor to make clear proposals as to what they should do in the project. In this respect, Thomas explained the team's attitude: *"I think our attitude was that when we went to the tutor, we would know what to do in the project after this meeting. And that wasn't the case. And I understand that. The tutor's role is not to present everything on a 'silver platter'."* (Interview: Thomas) The team rarely managed to prepare something specific for these tutor meetings so that the tutor could comment on it. It was observed that the team repeatedly discussed similar points at the tutor's meetings because different members attended these meetings and were not fully updated on what had been discussed with the tutor at the previous meeting (Researcher's diary). In the interview, Xavier remembered: *"The second meeting with the professor even started with the same topic as the first meeting, a repetition, because Vladimir and I* [the only ones who attended this meeting] *maybe, we were not able to transmit the idea to the rest of the group."* (Interview: Xavier)

5.7.1.2   Giving Help and Feedback

While this team only partially induced others to participate in problem solving efforts, these activities did not always ensure the collaboration of others. In this team, helping each other to solve project-related difficulties was restrained due to the team's rather individual approach of doing team's consulting project. Nina was the one in the team who often sought the assistance of other members, in particular from Thomas. Thomas

was willing to help Nina find ways of approaching Nina's subtask. In Thomas' own words: *"If [anyone sought for help], then it was Nina, who didn't know what to do; when she had questions, concrete questions, then she wrote us an e-mail. I always tried to answer her in a constructive way, without knowing what she had already written in her report...."*(Interview: Thomas) Some of the members indicated that giving help on an individual task was difficult due to the lack of knowledge of exactly what each member was doing. Thomas continued: *"But, in general, when something like this [seeking feedback] came up, then it was like that, we took notice of it. But, honestly, it is really difficult when someone asks a question and you don't know anything about it, you can state your opinion, but whether this makes sense is a different question."* (Interview: Thomas)

Yet, when Nina as the leader of the marketing team received feedback from the business policy group which forced her team to reshape its marketing analysis, Nina was left in the lurch. Although she clearly sought help, including her e-mail *"we have a problem"* (E-mail: 06.03.2009), only Thomas tried to assist her promptly in finding a solution to the team's problem even though he was not in Spain. He also encouraged the rest of the team to help Nina to find ways out of this problematic team situation. Thomas responded as follows to Nina's distress call: *"This is really not a fun situation to be in, but given the fact that we still have the weekend, I'm sure we can come up with something by Monday! Off the top of my head [he then gave clear advice for each area to be improved] …sorry, this is all that comes to mind just now. I'm sorry I'm not there to support you better. I hope you are able to provide Nina with some feedback and help. I'm surprised I'm the first to send a reply to her e-mail ;-). She's working her b... off to get things going, I hope we're all aware of that! Ok, I will see you soon; keep me posted on the developments! "*(E-mail: 06.03.2009) Although Thomas was not on-site, he appeared to be the first member of the team who helped Nina most in this critical team situation. In his interview, Thomas remembered the incident as follows: *"I responded with a long e-mail. I tried to respond immediately in order to help as much as possible. I realized that the rest of the team had not responded. This situation gnawed at my conscience as I was not there. … when I received the e-mail 'we have a problem' it was clear for me that I needed to help although I was not there. But, honestly, I expected the others to do something as well."* (Interview: Thomas) When the other team members

respond late or even ignored her appeal, Nina asked other members of consulting 3 to help her to come up with a segmentation analysis. Nina remembered this incident as follows: *"I was hopping mad and then I called Maria and Xavier and they both came. But it did not help me that both were only physically there, they were not prepared for this task. In the end, I worked on this new task with Anna – a member of a different team of our consultancy. The sad thing was that I had to work with somebody from a different team instead of with my team!"* (Interview: Nina)

Maria assessed this situation in a different way. When Nina asked other experts in the field of marketing at consulting 3, Maria felt redundant and insecure in supporting Nina. In her own words: *"Nina added mainly the market segmentation. She worked on it with some other groups. I went to the meeting. I remember that this was a hard time for the team because Thomas had left for Germany and Vladimir had given some excuse that he could not come. Nobody knew where he was. Xavier somehow arrived late. I was there, but I did not contribute so much because I just did not know what to say, sometimes. Because I always felt there are so many people who had more experience than I do, so it was best for me to just shut up."* (Interview: Maria)

Nina relied mainly on members outside team's boundaries when solving any team issues that arose. Nina was greatly disappointed in the team members' low level of willingness to help in pulling the team's chestnuts out of the fire. Even on the last evening before the presentation, one of the members clearly indicated via e-mail that he did not know where and when the team had met in this particular situation. Nina responded to this with a slightly desperate undertone as follows: *"Sorry, I don't understand. I said twice that the big meeting is today. That's a pity because we will not meet again. See you tomorrow. BTW: All the work was done already this weekend."* (E-mail: 08.03.2009)

All in all, the team members indicated in their interviews that they had only given a low level of constructive feedback on each other's written subparts at the end of each phase. Vladimir acknowledged: *"I did not receive any feedback. They said it is okay or I like it or I like it very much, but I did not receive any constructive feedback. And in that sense I got the impression that maybe they did not look at it carefully. Because I was sure*

some questions could arise from the interpretation of data, and nobody asked anything. So I am quite sure they did not put a lot of effort into it! I think this may have been a problem of group feeling. Everybody did their work in more or less a quality way, but then they did not look at the work of their team mates." (Interview: Vladimir)

5.7.1.3   Reframing

After this team had reached the middle of the team's life span, after the marketing presentation, the team felt the need to discuss their approach to doing project work. In particular, Nina and Thomas encouraged the team to rethink the team's functioning in order to improve their performance in the second part of the project. This reconsideration of the team's initial perception of its functioning was also reinforced by externals who pointed out the team's need to change its group dynamics. In Thomas' own words: *"…people like Justin [official leader of consulting 3] came and asked me 'Thomas, can I have a personal talk, I need to know what went wrong with your group, because something went wrong. We need to change something because it won't work if you continue like this!'"* (Interview: Thomas)

After finalizing the marketing phase, the team went out for dinner to discuss their pattern of interaction during the previous phase. In Vladimir's own words: *"We arranged to meet and talk. We discussed together that we should change the whole attitude. We needed to change the whole structure because we saw that we had failed, especially in comparison to the other group…"* (Interview: Vladimir) At this informal meeting, the team, and in particular Thomas and Nina, questioned the team's structure in order to find out: *"'What's wrong with this group?' I think he [Thomas] was the one who was trying to find the reason for what was not working in the group."* (Interview: Maria). Nina remembered in the interview: *" … it was not related to our specific task. We talked about our group dynamics, how the marketing phase had been and what we could improve in the future. We discussed that every member should be more proactive, that we should not only do the tasks which were assigned to us, but also to ask what the other members were doing and help them if they were experiencing problems. We discussed this in our group because we were disappointed with the team interaction at the time."* (Interview: Nina) The team members reframed their initial understanding of

teamwork to include more collaborative and supportive approaches to working together. Additionally, showing a higher level of dedication to the team's task was mentioned as a new understanding of team's approach. In Thomas own words: *"I think we also talked about the quality problem and that we needed to work better from a qualitative viewpoint. We needed to put more effort into our project, because we have the capability to do better!"*(Interview: Thomas)

Although this team showed some instances of reframing their process into a new understanding, there was only little evidence of collective reframing with regard to team's task. Case data revealed that the team members mostly worked on individual, independent subtasks and rarely discussed the members' ideas and developments in each subtask in detail. Hence, most of the time, the team members retained their initial perspectives of the team's task and omitted to collectively reframe previously held assumptions of the team's task. In Thomas' own words: "*I had the feeling that if one of us made some suggestions, the others were happy that proposals were being made. Most of the time, the members said, 'OK, if you want to do it, go ahead!' and did not object to any individually made proposals. But none of the team members said, 'I will support you, yeah, we will do it together, that is a really good idea', or 'that is a good idea, but I would suggest we do it like this, in a slightly different way!' we didn't have this kind of discussion in our team. Definitely not!*" (Interview: Thomas) Consequently, team members rarely built on each other's ideas and thoughts. On the contrary, the team members worked separately on each task and retained their individually held initial frame.

For example, during the team's final feedback meeting, the tutor asked each member for clear recommendations because those which the team had given were too broad. The team's tutor assessed their proposals with the following words*:"For these conclusions you did not need to research for five weeks"* (Observation of team meeting: 06.03.2009) At this observed team meeting, the members proposed more concrete recommendations one after another. After the meeting, Nina asked each member to send her the proposed recommendations. Yet, the team did not collectively work any further on these recommendations in order to continue their elaboration, even though the team had received critical feedback from the external faculty advisor. After this feedback

meeting, Nina updated Thomas via e-mail on these recommendations as he was absent from this meeting: *"He [tutor] said we must be much more concrete with that. For example, he asked each one of us to say in one sentence what the most import insight from our analysis was. And that's what everyone is supposed to send me, so I can include them in the presentation."* (E-mail: 06.03. 2009) This incident shows that the team members did not grasp the opportunity to collectively discuss the recommendations after the meeting although they had been urged to do so. Instead, the team took the proposals for granted once the team members had put them forward individually during the meeting.

All in all, this team showed little evidence of collectively transforming the team members' perceptions of the team's task into a new understanding although the team even received external encouragement to do this. This retention of the individually held perceptions of each team member's subtask was clearly indicated by Vladimir when contrasting the team's final output with the structure of a wall: *"Sometimes so, well, not very often, sometimes, yes. But overall it was not like a wall where you have one brick on another brick on another brick. It was not like that; I mean, it was just everyone working on his own part of the wall and then somehow it would come together. But it was not everyone building the same wall. It was like everyone was doing his part and then somehow we would put it all together, that was our attitude."* (Interview: Vladimir)

5.7.2 Action

5.7.2.1 Codification

Field data identified difficulties in the team when members were trying to translate the content of team meetings into concrete action items through a process of codification. The team's undertaking was often characterized by a less structured procedure, as Nina explained: *"Our project was not structured due to the lack of any agenda. We only knew roughly what we needed to do…"* (Interview: Nina) The straying activities of the team were reflected in team meetings, which were also held in an unstructured way. Team members often assessed meetings as unproductive, for example, as Maria acknowledged: *"We did not get anything new out of the meetings…"* (Interview: Maria)

Apparently, this again led to the fact that members experienced difficulties in extracting concrete action items out of these meetings which members could have put on paper in the form of minutes.

Thomas was at least one member of the team who sometimes tried to write down some agreed discussion points from team meetings and distributed minutes via e-mail. For instance, in one of Thomas' e-mails, he wrote: *"I just wanted to try to sum up where we stand right now."* (E-mail: 24.03.2009) But Thomas admitted that he had difficulties translating only vaguely defined reference points into concrete action items. In his own words: *"In actual fact, team meetings are supposed to be held in order for everybody to meet together and at the end of the meeting to say 'Yes, we have worked constructively on our project for two hours. We have achieved something and come up with some new ideas'. We only experienced this once so that I could say, 'now, everybody knows what to do'; we had discussed the structure and then, in this particular case, I could write a summary in which I could say exactly that we discussed this and agreed on that. But we rarely experienced this kind of situation. Usually, we were 'up in the air' and did not know what to do!"* (Interview: Thomas)

Due to the individual focus on this team project by each member and the rare development of collective insights, the undertaking by the team members with regard to codification was also rather individually oriented. Thomas encouraged the team to write short summaries of each subtask, but these codified parts were again seldom read and used by other members of the team. Each member wrote their respective part which, at the end of the project, was put together to form a final document. After the marketing phase, the team members assessed their own report as *"patchwork"*, (Observation of team meeting: 13.03.2009) which exemplified this incoherent, individual-oriented approach to writing the final project report. Maria recalled the situation at the end of one project phase, when Thomas reminded the team to hand in their final written report: *"Because we had parts, everybody wrote something. We each had our part, everything just had to be adjusted, the fonts standardized, and put into the structure that it was supposed to have. So, I remember Thomas' e-mail, Oh my God! I felt so bad, I felt so bad for him because he wrote first, 'We need to write a report.' And then* [after nobody had responded] *'Okay, I'll do it'."* (Interview: Maria)

5.7.2.2   Transferring New Knowledge to Others

The team's attitude towards transferring gained information to others outside its boundaries was reserved. One reason for this low frequency of sharing information to others outside the team was mainly the team's low development of reflective insights within its own boundaries. For example, after finalizing the marketing phase, each consulting 3 team was supposed to transfer insights to the team taking over the task. This studied team met the operations team to transfer insights from each expertise field. The observed transfer meeting revealed differences in terms of teams' attitudes and capabilities of communicating all the gained knowledge to each other. The operations team of phase 1 explained in detail the approach it had taken to analyze operations at Gimbert. In contrast, this studied team only superficially depicted the actual marketing situation at Gimbert (Researcher's diary). In Thomas' own words: *"We received the report, read it and met the operations group in order to go through each point together. We did the same with our report, though we could not give them so much useful information. Their text was really expedient because it included clear points on which we were to focus in the second phase."* (Interview: Thomas)

This team assessed that particular meeting as a *"shameful experience"* (Interview: Vladimir). In Nina's own words: *"The operations team gave us lots of relevant information and we could hardly answer any of the questions they asked."* (Interview: Nina) Along the same lines, Maria also expressed being in an inferior position. She claimed: *"They [the operations team members] were asking us questions about details we had not worked on and, in exchange, their report was very, very precise and everything was just close to perfection… They asked us these questions and we sometimes did not know what to say."* (Interview: Maria) This reluctance of transferring gained knowledge to others was observed throughout the team's life span. The team rarely fulfilled the expectations of members of consulting 3. In the interview, Nina acknowledged *"We did not provide consulting 3 with the results they had expected."* (Interview: Nina)

In the second operations phase, the team also continued with this under-represented role which the team played in its consulting company. Vladimir often returned from the weekly team leader meetings without any new information. During one team meeting,

the members also voiced the opinion that Vladimir had neglected to inform the other team leaders of this team's targeted operation proposals. In the meeting in question, the following dialog was observed:

Thomas: "We are the only group that is not featured on the memo. All the other groups have points, but we are not even mentioned. 'Operations does not exist!'"
Vladimir: "They have issues; we don't. What can we do!?!"
Thomas: "HR doesn't have any issues either. They were also apparently able to do something – or at least they are on the memo."
(Observation of team meeting: 31.03.2009)

This fragment of dialog between Vladimir and Thomas exemplified the under-represented role the team played in consulting 3. From Thomas' point of view, Vladimir neglected to transfer the team's operations proposals to the members of consulting 3. Due to this lack of transfer of team knowledge to members of consulting 3, this operations team only contributed to a marginal degree to consulting 3's final recommendations to Gimbert. Moreover, the fact that operations was even not mentioned in team leaders' meeting minutes exemplified this lack of transferring new knowledge to externals outside team's boundaries.

It seems that the team's undertaking in approaching members of consulting 3 was characterized by rather unclear activities over the team's whole life span. Even at the end of the operations phase, the team sent different versions to the head of consulting 3. After the proposed deadline set by consulting 3 for handing in each expertise presentation, Thomas wrote the following to the person responsible for the final presentation: *"Wow, this has not been an easy evening for you, I know! I'm so sorry for the confusion we have caused! Attached is the version we would like to have in our presentation, I hope we're not too late."* (E-mail: 27.04.2009)

5.7.2.3   Making Change and Improvement

This team showed only very little evidence of a) changing the team's functioning as well as b) progress in the team's task of analyzing and selecting marketing and operations strategies for Gimbert to implement internationalization plans.

Over the team's life span, I observed some examples of collective reflection by the team on how the team had functioned. For example, after finalizing the marketing phase, the team met to review its pattern of interaction during the marketing analysis project. Members reached understanding on how to present more collaborative and supportive approaches to working together for the rest of the project (cf. chapter 5.7.1.3).

Although this team showed some new understandings of the team's process, case study data showed only little or even no evidence of subsequent changes to how the team actually worked in the second phase. Thomas assessed the impact of the team's discussion on team functioning as follows: *"I think this get-together briefly brought about something good, but the positive effect lapsed after a short time."* (Interview: Thomas) In a similar vein, Vladimir also acknowledged: *"But I do not think that it changed very much, the old set of the things, the team's attitude."* (Interview: Vladimir) Likewise, Nina only perceived a brief effect of the team's reflection on its interaction, as she answered the question on whether this observed group discussion helped the team: *"…in the first moment, yes; after that, no… actually we continued with the same kind of interaction as in the first phase."* (Interview: Nina) Hence, the team members neglected to implement those gained insights about how this team should work and unfortunately continued with their initial working style in the second phase. Consequently, no action was taken by this team to change any self-identified weaknesses in the team's functioning.

Over the course of the whole project, the team made little subsequent progress on its defined task of analyzing Gimbert's market and deciding on operational tools to be implemented. In both phases, I observed only very little collective in-depth reflection on the team's task. Maria claimed: *"We did not go out of the meetings with any new things …. we did not move anywhere in the second phase, not at all. We were going backwards!"*(Interview: Maria) Team members were mainly working individually on basic project actions and on their own subtasks in order to be able to present something. In Vladimir's words: *"But the problem was not that we were doing something to make progress, but rather just doing something because it had to be done. So we were just trying to look for or find a solution to the essential part of our tasks. We were just*

conscious that we were supposed to do something, so then we tried to do something just to get it done. But not to deliver some good results." (Interview: Vladimir)

In team meetings, I observed that the members often moved in a circular course: team members discussed basic ideas, yet often without linking individual insights to one another in order to see the main project picture. On the contrary, this team remained at their initial position for the main part of each project phase, as explained by Vladimir: *"We never closed anything. So next time we met up, the same issues would come up, pop up. Why did they come up again? Because the time before, it had not been properly closed. It was not closed because the ideas were not really discussed, accepted or rejected. They were just left hanging."* (Interview: Vladimir)

Team members felt frustrated by recurring topics that had been discussed. Xavier explained the team's situation as follows: *"During the first three or even four weeks of the second part, it was frustrating, it was always the same, we always discussed the same things."* (Interview: Xavier) For example, in one observed team meeting, shortly before the Easter break, the team wanted to clarify which members could continue to work during the break. The team had some reference points in mind, yet did not manage to determine how these tools - which had been already proposed by the previous group - made up one single team project. The following dialog was observed:

Xavier : "Have you come to any conclusions about key performance indicators?"
Thomas: "We have come to the conclusion that if we do this we can do the entire presentation on key performance indicators. It is so broad. We can do it separately. We can do a little bit on Navision, on transportation, key performance indicators... I don't know, I don't care. I couldn't care less. It is f....d up..."
(Observation of team meeting: 31.03.2009)

This dialog exemplified the team member's rising frustration about what to do in the project. Shortly before presenting the final project to the team's tutor, each team member needed to come up with something to show. In both cases, however, the team's output was harshly criticized by externals; by the team's tutors as well as by members of consulting 3. In response, both in the marketing and the operations phase, one of the

members took charge of revising the team's presentation in line with externally received feedback. In the marketing phase, Nina was the person in the team who reworked the marketing presentation with the help of other members of consulting 3. Despite this, the final team presentation was only assessed as just passed (cf. chapter 5.4). In a similar vein, after receiving feedback from their operations tutor, Thomas took over the lead and revised the operations approach. In Thomas' own words: *"What we finally presented did not represent what we did in the three weeks. That had been a complete waste of time. We had not made any progress. We were just dangling."* (Interview: Thomas) However, likewise in this phase, the team's final presentation and report were assessed below average (cp. chapter 5.4). One of the members acknowledged: *"Based on what we had from the whole operations phase, we could not reinvent the wheel and come up with something totally new within the three days that were left."* (Interview: Thomas)

Hence, due to the team's lack of collective reflection on its project task, this team could not act on such insights. Members were only individually engaged in basic project tasks in order to just pass the project. In Thomas' words: *"We simply wanted to get across the finishing line somehow."* (Interview: Thomas)

5.8   Effects of Leadership on Team Learning

<u>Summary: Team's Learning</u>

All in all, this observed team showed little evidence in the two learning categories, conceptualized as interplays of reflective behaviors and the action the team needed to take to implement the insights it had gained. Throughout the team's life span, field data revealed very few activities undertaken by the members to induce their mates to participate in problematic situations. On the contrary, team members worked individually on minor, less independent subtasks and rarely gave feedback to each other. Only one team member actively tried to receive help from her mates. Moreover, there were instances observed where most of the members neglected to respond to a member's request for assistance. In response, this team member asked externals from consulting 3 to help her in rounding out the team's final marketing presentation.

Over the team's life span, the members rarely built on comments from their colleagues and failed to combine the ideas of the others into one overall project proposal. Hence, case data showed only little evidence of collectively transforming any team member's perception of his/her task into a new understanding, even though the team received external encouragement to do this. Consequently, the team members retained their initial individual frames of the project task and mostly failed to reframe their position in a holistic system. In contrast to this lack of collective reframing with regard to the team's task, this team did show some instances of reframing the functioning of the team's process into a new understanding. After passing the half-way mark in their project, members reframed their initial understanding of teamwork to more collaborative and supportive approaches of working together.

The low occurrence of members' gaining collective insights into the team's project task correspondingly bore on the team action to implement this inadequate knowledge. Field data identified difficulties in the team when members were trying to translate the content of team meetings into concrete action items through a process of codification. Similarly, when transferring knowledge to others outside the team's boundaries, this team appeared to be rather restricted. During its life span, this team showed only little progress in their task and seemed instead to be going around in circles. Likewise, although this team gained a new perception in terms of how to work on this project, no action was taken to change self-identified weaknesses.

A summary of the team's learning process, classified in reflective behaviors and action, is given in the following table.

Team Learning			
Reflection **Developing Collective Insights**		**Action** **Implementing Gained Insights**	
Markers:	Illustrative Data	Markers:	Illustrative Data
Seeking Help and Feed-back	"I think they did not care [about each other's part]. And they only looked at their own part, everyone had their own problems, its own part to do, and that was it." (Interview: Vladimir) "Nina, she often complained that she didn't know what to do." (Interview: Thomas) "Thomas, you have more insight into the cava industry. Could you help me with the research?" (E-mail)	Codi-fication	"In actual fact, team meetings are supposed to be held in order for everybody to meet together and at the end of the meeting to say 'Yes, we have worked constructively on our project for two hours. We have achieved something and come up with some new ideas'. We only experienced this once so that I could say, 'now, everybody knows what to do'; we had discussed the structure and then, in this particular case, I could write a summary in which I could say exactly that we discussed this and agreed on that. But we rarely experienced this kind of situation. Usually, we were 'up in the air' and did not know what to do!" (Interview: Thomas)
Giving Help and Feed-back	"I was hopping mad and then I called Maria and Xavier and they both came. But it did not help me that both were only physically there, they were not prepared for this task. In the end, I worked on this new task with Anna – a member of a different team of our consultancy. The sad thing was that I had to work with somebody from a different team instead of with my team!" (Interview: Nina) "I did not receive any feedback. They said it is okay or I like it or I like it every much, but I did not receive any constructive feedback. And in that sense I got the impression that maybe they did not look at it carefully. Because I was sure some questions could arise from the interpretation of data, and nobody asked anything. So I am quite sure they did not put a lot of effort into it! I think this may have been a problem of group feeling. Everybody did their work in more or less a quality way, but then they did not look at the work of their team mates."(Interview: Vladimir)	Trans-fering New Know-ledge to Others	"We received the report, read it and met the operations group in order to go through each point together. We did the same with our report, though we could not give them so much useful information. Their text was really expedient because it included clear points on which we were to focus in the second phase." (Interview: Thomas) "The operations team gave us lots of relevant information and we could hardly answer any of the questions they asked." (Interview: Nina) "We did not provide consulting 3 with the results they had expected." (Interview: Nina) "We are the only group that is not featured on the memo. All the other groups have points, but we are not even mentioned. 'Operations does not exist!'" (Observation of team meeting)
Re-framing	"I had the feeling that if one of us made some suggestions, the others were happy that proposals were being made. Most of the time, the members said, 'OK, if you want to do it, go ahead!' and did not object to any individually made proposals. But none of the team members said, 'I will support you, yeah, we will do it together, that is a really good idea', or 'that is a good idea, but I would suggest we do it like this, in a slightly different way!' we didn't have this kind of discussion in our team. Definitely not!" (Interview: Thomas) "We arranged to meet and talk. We discussed together that we should change the whole attitude. We needed to change the whole structure because we saw that we had failed, especially in comparison to the other group…" (Interview: Vladimir)	Making a Change and Improve-ment	"But I do not think that it changed very much, the old set of the things, the team's attitude." (Interview: Vladimir) "We did not go out of the meetings with any new things …. we did not move anywhere in the second phase, not at all. We were going backwards!"(Interview: Maria) "But the problem was not that we were doing something to make progress, but rather just doing something because it had to be done. So we were just trying to look for or find a solution to the essential part of our tasks. We were just conscious that we were supposed to do something, so then we tried to do something just to get it done. But not to deliver some good results." (Interview: Vladimir) "During the first three or even four weeks of the second part, it was frustrating, it was always the same, we always discussed the same things." (Interview: Xavier)

Table 13: Team Learning Behavior (MarkOP Team)

Summary: Team's Leadership

A formal superior leader was designated in this team which however rotated several times over the course of the project. This team leader position was induced by members of consulting 3 and included initially the boundary spanning role and the exchange of information between different expertise teams. However, in this studied team, the official team leader took over a higher position than only the boundary spanning role. Most of the team members relied totally on this member and waited for clear instructions what to do. This was not only observed in the first phase; also in the second phase, when the leader position changed to a different member, excessive reliance of most team members on the team leader was observed in all areas. Only one other team member emerged as a co-leader in situations when this fellow-member felt the need to do so. However, the rest of the team responded reactively and waited for clear commandos relating to the task. One of the members explained leadership in the team as follows: *"The others did their part when someone told them exactly what they were supposed to do. But they never brought anything in of their own accord which could have motivated us. They never showed initiative and responsibility. We [Nina and Thomas] needed to show them their responsibility.... I definitely I did not perceive any leadership from the others."* (Interview: Thomas)

During the team's life span, observations revealed that performed leadership activities were mainly aimed at the project task of the team. Only a few leadership activities were observed directed at building and maintaining relationships between the members. Likewise, change oriented leadership activities were only performed to a lesser degree (cf. Table 12). At the same time, these more or less committed leadership roles influenced the learning process of the team. How these leadership activities, or their absence, affected the team's learning process, both as regards reflection and action, will be subject of the following discussion.

The Role of Task-Oriented Leadership Activities in Team Learning:

In comparison to very limited relations and change-oriented leadership roles, team members showed leadership activities that were oriented to some extent to the team's task. Despite this, the **planning process of the team's project** seemed to be underrepresented in this team. Instead, the team neglected to grasp its externally set goal

and hence experienced difficulties in coming to a common understanding of what this team was expected to do. As team members rather tended to overleap this particular leadership activity, they only gained superficial collective insights into the team's task and even felt lost in the project. Because members did not know what to focus on, they experienced difficulties as to which knowledge fields to gain insights from and where to look for information for each phase. In Xavier's own words: *"Lost, we did not know where to go, where to find more information, what kind of solutions we could provide; in that sense, we were lost*." (Interview: Xavier) This team showed little evidence of gaining collective insights about what this team needed to achieve.

Due to the team's low level of grasping its goals, the team could not set clear directions it could act on. Instead, team members acted on their individually gained project understandings, and did not implement much collective insight. Thomas described the action of team members as rather non-reflective deeds. In his own words: *"We tried to present something, in order to show that we had done some parts."* (Interview: Thomas) Nina also pointed to the interdependence of the team's restricted planning activities and the low level of progress in the team's project: *"In the end it got even worse; actually, because we did not have a clue about operations, where we wanted to go and what we wanted to achieve. We met several times, but without any kind of results!"* (Interview: Nina)

The team's inadequate planning process also negatively impacted its capacity to **clarify roles and objectives** as no clear directions were defined. Members regarded this project as unstructured. Although leaders in both phases sporadically tried to coordinate the project by means of assigning defined tasks to team members, the members did not understand each other's responsibilities which again led to misunderstandings and overlaps in the team's task. Thomas described it as follows: *"[In the second phase…] Vladimir was the group leader. He tried to coordinate the project, but to be honest, that was not real coordination. Again, everybody did a little bit, but nobody was aware of what the other members knew."* (Interview: Thomas) Hence, the team members lacked to clarify roles and objectives which would have decreased the ambiguity within the project so that clear actions could be taken. On the contrary, according to Thomas, this team felt they were *"'left dangling' and did not know what to do."* (Interview: Thomas)

Nobody in the team took charge of implementing the actions that had resulted from discussions among the members.

Similar to planning and clarifying roles and objectives, this team only engaged in rather basic **monitoring** activities. The team leader took charge of checking whether the written subprojects were sent and whether members used the correct format in the presentation. As the content of the team members' subtasks was not collectively defined in advance, the team leader could not review whether collective insights had been implemented. However, Xavier pointed out the need for monitoring the content of each other's subtask rather than only correcting basic mistakes and formatting the presentation, as done in this team at the end of each project phase. In his own words: *"But we should have taken what I said before more seriously and checked what the others were doing, not just to correct it, but to be able to give constructive feedback."* (Interview: Xavier) In a similar vein, Thomas also acknowledged the lack of reviewing team members' subproject proposals which, if present, would have led to the detection of potential weaknesses in the team's project. He acknowledged: *"It would have been helpful if we had read the sections by the other members in order to see what was not in order and where there might be potential."* (Interview: Thomas)

The Role of Relations-Oriented Leadership Activities in Team Learning:
Only very few leadership activities were aimed at building and maintaining relations between the team members. At project start, the team members took a good relationship for granted and focused mainly on the team's task. Yet, as project difficulties arose, the common demeanor of the members broke up into more individual-oriented actions. In the interviews, members indicated a lack of group feeling although engaging in a common project. The team's low level of cohesiveness seemed to result from their limited commitment to **building and maintaining relations between the members**. The team's unincisive group feeling was again reinforced by the members' inability to manage **tensions between members**.

This lack of team cohesiveness also influenced the members' willingness to spend time and effort to help each other with subtasks. Instead, the team members worked individually on each area and tried to solve problems on their own. One of the members

indicated the link between the low level of cohesiveness and limited collective team reflections: *"I did not receive any feedback. They said it is okay, or I like it, or I like it every much, but I did not receive any constructive feedback. And in that sense I got the impression that maybe they did not look at it carefully. …. So I am quite sure they did not put a lot of effort into it. I think this was a problem of group feeling, at least in our team. Everybody did his work more or less in a quality way, but then people did not look properly at the others' work…"* (Interview: Vladimir)

By referring to another external team at consulting 3, Vladimir continued to explain the relationship between cohesiveness and gaining collective project insights. He acknowledged that, in his team: *"…members tended to say, 'Well here, you gave me a task and I've done it, so leave me alone.' Nobody had the responsibility, or nobody was enthusiastic enough, did not have enough passion, to be there and then to solve this problem. Like, for example, with the marketing group, it was just a set of really interested, keen people who really got moving and who were really there. I mean, I saw their attitude and how they belonged as a group…they had this feeling of belonging to one group, and that is why they made all the calls* [to Gimbert's clients] *and they were really working."* (Interview: Vladimir)

The Role of Change-Oriented Leadership Activities in Team Learning:

From time to time Nina and Thomas were the ones in the team who engaged in **intellectual stimulation** behavior aimed at encouraging the rest of the team to rethink the team's functioning. Thomas described this leadership activity: *"Nina and I tried to initiate conflicts – in order to stimulate their thoughts…"* (Interview: Thomas) This led to a change in the team members' understanding of working together to new, more collaborative, perceptions of team functioning, though only for a short time. It was observed that this team returned to its initial perception of team work and worked individually on the team project until its conclusion.

When team members engaged in **boundary spanning activities,** this information was seldom shared among team members. In the case of scouting for external information, team members usually used the acquired information for their individual subtask and rarely shared or discussed such information with the rest of the team. Likewise, this

team could not benefit from gained insights from team's official coordinator role within consulting 3 as the team leader did not proactively distribute this information to the rest of the team. In this vein, one of the team members acknowledged: *"It would have been very interesting for me to know how it was at these meetings. He always returned with nothing. We asked: 'What did you discuss?' 'Nothing…'."* (Interview: Thomas) Hence, the few boundary spanning activities that were engaged in rarely increased the team's insights, since members seldom shared these externally gained insights. In addition, the action part of learning, in particular the transfer of knowledge to others, was rather underrepresented as the official team leader engaged in a rather contained role in consulting 3.

All in all, case study data revealed that this team engaged in a low frequency of leadership activities in each of its three roles. The team also showed little evidence of either learning category. In particular, the low level of team reflection was triggered by the members' inadequate planning activities which, in turn, resulted in the individuals going astray in their activities. The vagueness of the team's goals again diminished the team's capacity of clarifying the members' roles and objectives and monitoring tasks. Of these, only basic activities were performed by the leader, although this could not assure the implementation of the scant project insights gained. Likewise, the team's low rate of leadership activities directed at relations affected collective reflection as members worked individually on their team tasks and showed little willingness to assist in helping each other in problematic situations. Neither did change oriented leadership activities support an increase of task insights in this team. Since the few boundary spanning activities engaged in were characterized by solo attempts, this team mainly neglected to share individually gained insights so that others could participate in them. The following table showed the relationships of performed or omitted leadership activities in team learning.

	Team Learning				
Leadership Substance	**Reflection** Developing Collective Insights			**Action** Implementing Gained Insights	
Task-oriented	Descriptive Effect	Illustratve Data		Descriptive Effect	Illustrative Data
Collective Planning	Team neglect to grasp externally set clear goal, no gain of collective insights	"Lost, we did not know where to go, where to find more information, what kind of solutions we could provide, in that sense, lost." (Interview: Xavier)		Team could not set clear directions it could act on	"We tried to present something, in order to show that we had done some parts." (Interview: Thomas) "At the end, it got even worse. Actually, because we did not have any clue where we wanted to go and what we wanted to achieve. We met several times, without any kind of results!" (Interview: Nina)
Clarifying, Reminding and Coordinating Team's Objectives				No enforcement of team's action result from members' discussion	"Vladimir was the group leader. He tried to coordinate the project, but to be honest, that was not real coordination. Again, everybody did a little bit, but nobody knew what the other members knew." (Interview: Thomas) "'left dangling' and did not know what to do." (Interview: Thomas)
Collective Monitoring	No collective detection of task-related problems	"It would have been helpful if we had read the other members' parts in order to see what was in disorder and where there might be potential." (Interview: Thomas)		Basic monitoring on action taken by individuals	"But we should have been more serious in what I said before, checking what the others did, not just to correct it, but to be able to give constructive feedback." (Interview: Xavier)
Relations-oriented					
Building and Maintaining Members' Relationships & Collective Facilitating Resolutions of Tensions in the Team	Lack of team cohesiveness led to lack of collective discussions	"I did not receive any feedback. They said it is okay, or I like it, or I like it very much, but I did not receive any constructive feedback. And in that sense I got the impression that maybe they did not look at it carefully. …. So I am quite sure they did not put in a lot of effort. I think this is a problem of group feeling, at least in our team. Everybody did their work more or less in a quality way, but then people did not look at the others' work…" (Interview: Vladimir) "…members tended to say, 'Well here, you gave me a task and I've done it, so leave me alone.' Nobody had the responsibility, or nobody was enthusiastic enough, did not have enough passion, to be there and then to solve this problem. Like, for example, with the marketing group, it was just a set of really interested, keen people who really got moving and who were really there. I mean, I saw their attitude and how they belonged as a group…they had this feeling of belonging to one group, and that is why they made all the calls [to Gimbert's clients] and they were really working." (Interview: Vladimir)			

Change-oriented				
Encourage Members to View Points in a Different Way	Intellectual stimulation activities encouraged members to rethink team's functioning	"Nina and I tried to initiate conflicts – in order to stimulate their thoughts…" (Interview: Thomas)		
Collective Boundary Spanning	Team members did not participate in individual boundary spanning	"It would be very interesting for me to know how it was in these meetings. He always returned with nothing. We asked: 'What did you discuss?' 'Nothing…'." (Interview: Thomas)		

Table 14: The Role of Shared Leadership in Team Learning (MarkOP Team)

6   Case 3: Radar Research Team

6.1   Introduction

The data used as information for this third case study report was collected from a research-oriented consultancy team of a leading research park in Germany in spring / summer 2009. The process started in April 2009 when I made initial contact with a co-leader of one of the research institutes in this technology park in which the team I observed was embedded. I interviewed the co-leader to get a general picture of this institute called "Technology & Society" (T&S)[10] whose objective is to create new knowledge on the impact of human actions and their assessment regarding the development and use of technologies. This institute seemed most appropriate for my data collection as team projects by this institute focus more on desk, social science, non-laboratory project work, making it easier for me to thematically understand and follow this kind of project rather than the purely hard-science laboratory work which dominates in most of the research institutes in this technology park. I explained the general purpose of this case study to the institute co-leader and asked him for collaboration in my data collection. He agreed to ask some active teams for their cooperation in my PhD project. In May 2009, the co-leader informed me that one of his more active teams would allow me to be present during its meetings and invited me to a team meeting.

At the beginning of June, I observed the first meeting of this team. At the start of the project meeting, I briefly introduced myself and the general purpose of my PhD project. It was agreed with the team members that I would observe and tape the following team meetings up to September 2009. Additionally, team members agreed to participate in subsequent individual interviews between the middle and end of my research. In total, I observed a) 7 team meetings lasting from two to four hours, and b) conducted nine personal interviews which lasted around 80 minutes. Additionally, I received c) archival data from the project. Hence, data contained this case study report is mainly the result of direct observations of several team meetings and individual interviews.

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[10] T&S is a pseudonym for the actual institute.

This case study report consists of four sections. The first part introduces the institute in which the team is embedded, followed by a description of the observed team including its project task, its structure and the team's effectiveness. The third part discusses underlying factors for the team's effectiveness, and refers to leadership and learning. The fourth part focuses on the role of shared leadership in team learning.

6.2   The "T&S" Institute in the Technology Park

This technology park is one of the leading research institutions in the field of engineering and science in Germany. It was founded in the late fifties and today has more than 3500 employees. Researchers from diverse fields, ranging from medicine to climate science, work in more than 140 different institutes in this technology park. Most of the institutes are highly independent and, according to one institute leader, *"... each institute can develop itself"* (Interview: institute leader 2). These diversely oriented research institutes are accommodated in a research area which is, however, only accessible when one has permission to enter. In terms of its funding, the technology park is subsidized by public sources of capital but also receives support through third-party funded research projects. In sum, the budget currently adds up to more than € 400 million.

One of the more than 140 institutes in the technology park is the **Technology & Society (T&S) Institute,** the organization in which the studied team is embedded. Generally speaking, this institute aims at generating knowledge on the impact of human actions and their assessment in view of the development and use of new technologies. In particular, members of T&S analyze and assess the impact of new and existing technologies on environmental, social and political-institutional issues. In the words of the institute leader, *"We provide knowledge for different kinds of decision processes. That is a kind of support, not in business terms, rather on a social or political level. We conduct a kind of political consulting with scientific knowledge"* (Interview: Institute Leader 1). In more detail, the co-leader of the T&S institute added, *"We assess technologies in terms of their opportunities, in terms of their risks, and in terms of their consequences, in their tended and intended outcomes. Additionally, we also analyze incidental consequences nobody would expect…"* (Interview: institute leader 2).

Projects carried out by the currently 80 employees at the T&S institute are either financially supported by the institution of the technology park or financed by third-party funded research projects as a consulting project for external parties.

The T&S institute is organized as a project based structure, in particular concerning interdisciplinary project teams. In the words of the institute leader, this institute is: *"…highly interdisciplinary of course, due to our field of work. Technology assessment ranges from ethics to economics and includes philosophy and process engineering, it is highly interdisciplinary. At the same time, we work on a project based structure. It is so project-oriented that when I joined this institute I said: 'That is not all, because a project has a beginning and an end and an institute needs continuity, areas of research which run over a long period of time, more than only two years of project duration.' Nevertheless, our working method is based on projects. Teams are formed depending on the project, and this is done very flexibly."* (Interview: institute leader 1) Hence, the structure of the organization is constituted by the team projects. One of the T&A leaders acknowledged: *"At present, we have a very flat structure, we only have the management of the institute and then we have all the researchers and, actually, the structure is made up of the projects."* (Interview: institute leader 2) Researchers usually work simultaneously in different projects in which researchers' expertise is needed. In the words of one member of the T&S institute: *"This touches the culture of the organizational structure. Here, we are permanently working in changing teams."* (Interview: member of T&S)

Each project is designated by an official project leader. According to one of the T&S leaders, this official project leader has *"... so to speak, project responsibility, but no personnel responsibility. Personnel responsibility has only been in my hands [of the leader of T&S] to date."* (Interview: institute leader 1) He continued by explaining the typical tasks which a project leader is supposed to do: *"The budget, there is a third party funded budget which has to be administrated. And then the interface to the client … to have this in view, the milestones and deadlines. And then inside the team, the coordination…and the external representation, including presentations and publications. Of course, the project leaders do not need to do everything on their own, but they do need to take care that these things are done."* (Interview: institute leader 1)

Although the project is designed by an official project leader, the idea of the management of T&S is to minimize hierarchical differences inside the team, as one members of T&S explained, in a project: *"... we are the same…I think this is the idea at T&S, I understand that everyone is working at the same level and there are no hierarchies, or rather very, very flat hierarchies."* (Interview: member of T&S) The idea of a high level of autonomous working is targeted by the management, as one of the leaders of this institute explained: *"Freedom is a key issue. I have a project team here at T&S in which this is not the case, there is too little freedom. This group is managed too strictly - let's say like an engineering office, where only one member is the leader. This is the only project leader who is always a project leader and who delegates the team too rigidly, I would say with not enough freedom. This guy is successful and I always say to him, 'Mr. XYZ, as long as you are successful, I will not intervene in your model', but honestly, I think that more freedom for the project members would also free up more creativity in this team."* (Interview: institute leader 1)

Hence, the leaders at T&S strive for highly autonomous work by decreasing hierarchical differences. In contrast to the above case, most of the members of T&S have different roles in daily work, and may be the official team leader in one project and at the same time have a normal team member function in another project. One of the T&S leaders explained this as follows: *"In our daily work, there are project leaders who are the official leaders of a project although they work in other projects as normal team mates, where someone else is the official team leader."* (Interview: institute leader 1) One of the members of T&S even claimed that this kind of rotation of project leader functions in different projects prevents the basis for playing power games among team members. In his own words: *"The one colleague is a superior, but next day I am the project leader for this person. And this might also prevent these kinds of power games in our institute."* (Interview: member of T&S)

The following figure exemplifies the project structure at the T&S institute and in particular the jumping of project functions in different simultaneously ongoing projects, from being a project leader in project a to being a project member in project b.
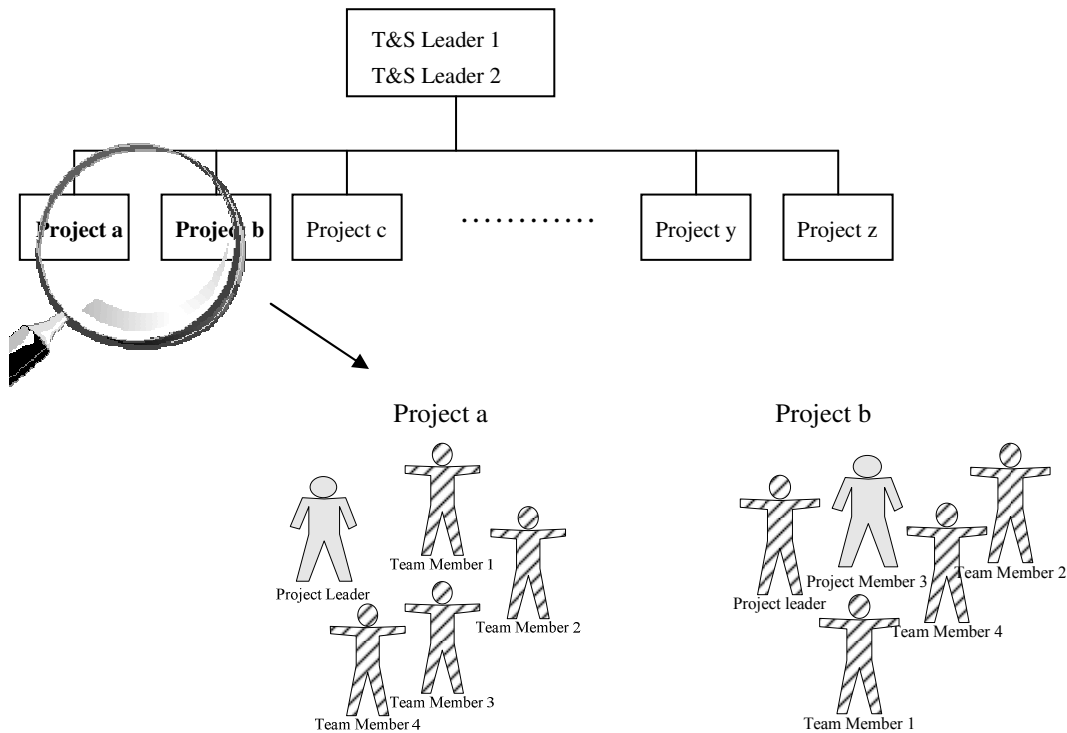
Figure 16: Organizational Structure at T&S

6.3   Team's Objective

The team I observed consisted of eight team members, including one official project leader who is in parallel the co-leader of the institute, and seven further researchers from various disciplines including four senior and two junior institute members. Most of these team members knew each other at the beginning of the project as most had already worked with each other in different T&S projects beforehand.

The project I observed from June to September 2009 was in the field of innovation and technology assessment at T&S and is called in the following **Radar Project**[11]. It aimed at identifying strategic topics and additionally to retrieve important questions in those fields. In so doing, the project targeted the identification of emerging possibilities from the technology side and at grasping issues related to emerging social needs which in turn might be satisfied through new technologies in the future (Source: internal documents).

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[11] Radar is a pseudonym for the actual project name.

This project is a third party funded research project for which this team needed to apply. Hence, the main idea of this project was provided by the client, a public contracting body. For this application, four members of this Radar Team had presented a proposal including the main approach as to how to identify new and emerging innovation and technology topics. The proposal for this project was made in collaboration with an external technology-focused partner called **TechBrain consulting**[12]. The idea of this collaboration between the two teams was that the TechBrain Team focused on themes relating to new technologies, whereas the Radar Team took themes relating to political and social needs into consideration.

After the acceptance of the proposal, the project started officially in October 2008 with a broad identification of topics, the first stage of this project, which was planned to be finished by September 2009. Both project teams mainly worked separately on this project due to their thematically different focus. That is why I will concentrate in the following analysis on the Radar Team and regard TechBrain as a collaboration partner outside the team's own boundary. In the initial phase of **stage 1**, members of the Radar Team, in particular students, scouted for information in order to sense ongoing political and social needs in the press. In doing so, the team's task according to one member was to: *"… look, without any kind of pre-categories, in journals and in the press; we read newspapers to screen these needs-oriented themes, though without any kind of pre-structure. That was the plan."* (Interview: team member 7) After some time screening external information, a cluster of different themes emerged. In the words of one member, *"We first of all tried to condense these broad literature sources into headings….we discussed these topics together and modified them in various meetings. And then we had an extra workshop for these topics during which we discussed them and again condensed to a smaller number of topics…."* (Interview: team member 1) During this process, the team members reduced the number of topics by ranking them from a high number of emerging topics to a number that constituted the *"60 most relevant topics"* for the team (Interview: team member 6).

Each member was assigned to different topics of these 60 pre-selected themes. The idea was that each topic was worked on by either a single person or a subgroup of members

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[12] TechBrain is a pseudonym for the actual consulting company.

in order to become broadly acquainted with this particular field. At this time, I joined the Radar project. Between June and September 2009, the team conducted general research on each of the 60 topics and discussed emerging ideas and developments of those mini-subprojects in observed meetings. Additionally, for each topic, members were supposed to write a one-page summary on why this topic would be suitable for studying in more depth in the final stage 3.

Additionally, during my stay team members planned the next phase, stage 2 of the project, namely a workshop with external experts in the field of technology and innovation assessment. This workshop was held in October 2009, after my data collection, in order to select from the 60 proposed topics the most interesting and promising topics in the field of technology and innovation assessment. In the subsequent stage 3, the selected topics were empirically researched in so-called "short studies". In total, this reduction process of the most important topics in the field of innovation and technology assessment will take around 3 years (Source: internal documents).

6.4   Project Team Meeting

Between June and September 2009, I observed seven team meetings which lasted between two and four hours. Meetings were mainly held in a designated conference room at the T&S institute. This room was equipped with a big whiteboard, flipchart, a U-shaped table layout, and a small academic library including some books and paper versions of journals. Observed meetings were held at relatively regular intervals, every second week (Source: researcher diary). The meetings started on time and most of the team members were usually present. Meetings were often scheduled during the previous meeting to reach everyone's consensus when to meet. Through this collective arrangement of team meetings, also through an online tool on scheduling meetings (cf. Figure 17), the observed meetings were characterized by little absenteeism.

Team meetings usually started with a welcoming address by the official project leader, followed by the proposed agenda of the meeting, including those points which had been broadly discussed in the previous meeting. According to one team member: *"Yeah, he [the team leader] sets the agenda and takes care that we work off each point"*

(Interview: team member 6). Additionally, at each meeting the official team leader asked the rest of the team to provide updates and share important issues. In the meetings observed, members reported on conferences they had attended and on more specific project-related updates.

Figure 17: Online Meeting Scheduler (Internal Document)

The atmosphere at the team meetings seemed to me very friendly, open and cheerful. From time to time, members joked around during the observed meetings. The official team leader acknowledged: *"It is also important to be able to say funny things, to laugh and made jokes from time to time."* (Interview: team leader) Likewise, one of the team members claimed: *"… hard but hearty! We upheld a cordial level of social interaction at all times"* (Interview: team member 1).

6.5   Team Effectiveness

Although this team was at the beginning of its project, at stage 1, rather than at the end, this team evaluated its project effectiveness as high. Team members showed a high degree of satisfaction regarding the quality of preliminary project results. The official team leader assessed the actual project status as: *"… very satisfactory. I think we have excellent profiles of these 60 topics. I am positively surprised!"* (Interview: team

leader). In the interviews, the team members also showed a high level of satisfaction as to the quality of the ongoing project. In one member's own words: *"It always sounds stupid when one says everything is running smoothly. Nonetheless, I think everything is going fine… I think so far our results have been very good!"* (Interview: team member 1) Another member indicated the progress the team had made during stage 1: *"I find what we have found out very interesting … and in particular our workshop; we took one day off, left our campus. This was very good and we enjoyed it because we worked concentrated one full day on this project and we progressed a lot…"* (Interview: team member 6). Moreover, according to the team leader: *"… we were in line with our plan, if you would like to assess our project in more explicit measures. We are on schedule and we have a high number of profiles which I think are excellent."* (Interview: team leader) Likewise, the leader of the institute also assessed the project progress of this observed team as quite successful.

Not only the quality of the team project was evaluated as high, but also the project experience, as one team member acknowledged: *"I am enjoying doing the project."* (Interview: team member 7) In a similar vein, another team member claimed: *"… for me personally the ultimate success of this project is not only the publication , but also that I have learnt a lot and that I worked together with interesting people in this project."* (Interview: team member 5) Similarly, a member described this team as a successful one in which: *"… everybody is getting involved. And this is evident in a sense that we are a real team….everybody is contributing to the project and complementing each other very well. I think this is a very successful team."* (Interview: team member 3)

6.6   Factors Enabling Team Effectiveness

In the interviews, team members showed a high rate of satisfaction as regards the hitherto carried out project results. In addition, members showed great enthusiasm in terms of their team experience during the ongoing project. In order to understand this high level of team functioning, I will use the following discussion to shed light on the factors enabling team effectiveness, namely leadership and learning.

In line with the culture of the T&S institute, the Radar Team showed a very flat hierarchical team structure. Although this team was designated by an official team leader, this member took a *"mediator role"* (Interview: team leader), more like a regular team mate rather than a superior. One of the team members described the official leader role as follows, *"He has responsibility for certain things, but for me, I don't regard him as a superior, above the other mates, his word does not have more impact!"* (Interview: team member 6) Yet this role stood in contrast to the classical picture of a vertical leader, as one member acknowledged: *"In rare cases, the official team leader has something like a guideline competence – they [team leaders] would theoretically have guideline authority. But usually this guideline authority is not carried out and most of the things are negotiated within the group. And this can also be seen in our team with Dieter [the team leader]; there has rarely been a case of someone saying, 'You have to do it like this'. He would theoretically have the authority to do this, but it would not fit in with our culture at the institute, because other projects are not handled like this either. In the end, we prefer a project to be steered by conviction rather than by superiority or hierarchical considerations."* (Interview: team member 1)

Hence, no commandos or clear directions were given by any individual superior member of the team; on the contrary, this team based its project decisions on collective agreement. For example, one of the team members recalled an incident where the official team leader had the idea of structuring the presentation of each single topic, although the rest of the team did not support Dieter's approach. One team mate reported: *"I think he is trying to include everybody. Today, for example, Dieter mentioned that none of us shared his opinion of standardizing the format of the profiles, and he consequently regarded his arguments as being weaker."* (Interview: team member 6) Finally, the team stuck to the initial procedure, although the official team leader raised some objection to doing so. In a similar vein, another team member acknowledged, *"Nothing is prescribed by the leader; instead it is asked, 'How would you guys do it? I see it like this, and you?' And within the group there are no hierarchical differences in terms of age, title or academic profile. Everybody's argument is listened to. It is a very open forum and everyone has a common goal."* (Interview: team member 3)

It was observed that team members influenced each other in the achievement of the project goal. Hence, there was not only a leadership influence observed from the leader to his team mates, but also vice versa and mutually among members. Dieter, the official team leader, reported: *"I also allow them to have an influence on me, which can only be positive; because I know that, in principle, none of the members want anything bad."* (Interview: team leader)

Team members even argued that this collective framing of the project, ranging from more task-oriented behavior such as planning and monitoring to more change-oriented activities like enhancing discussions through challenging questions, attracted and motivated members in this project. One of the members confirmed: *"It depends on the official leader of a project. In our case, we have real open discussions on: '… what is good, what is possible, where do we want to go, etc'. …It depends to a great extent on the person - the project leader - that he allows this to happen. He could cut our involvement. He could instead say, 'We don't have any time', or 'I have already discussed that with them [members of client organization], and this is what we are going to do, there is nothing more to be said about it.' But due to his open manner, he lets us take part, too. And this chance to become involved in creating the process, that's motivating…The teamwork and our discussion and the development of the process, that's what makes the project so attractive to me!"* (Interview: team member 3)

This collective framing of the project and its progress seemed to coincide with highly reflective discussions in the team. Team members characterized themselves as a team that is very *"eager to debate and discuss"* (Interview: team member 3), made possible by this kind of leadership that is open to sharing and less hierarchical. However, how these distributed leadership activities influenced team learning in detail will be the subject of the following discussion. But before I introduce a detailed analysis in the role of shared leadership in team learning, I will first of all analyze the nature of shared leadership in the Radar team in further depths.

6.7   Nature of Shared Leadership

6.7.1 Leadership Substance: Task

6.7.1.1   Planning

The team was asked to consult a public institution *"in a kind of orientation as regards future topics for technology assessment"* (Interview: team member 1). Hence, the main idea of this project was given by the client, a public contracting body. One team member reported: *"This is not a research project, rather a kind of service for the ministry. This means the main goals are set by the public contracting body. However, this client gives us a lot of freedom in the implementation of these overarching set goals."* (Interview: team member 2) The team needed to deal with these external set goals while composing a proposal for the external body, as one member acknowledged: *"The goals were the result of the request by the ministry. The goals of the project were not defined through us, but through the client."* (Interview: team member 5)

This proposal directed to the ministry was composed by senior team members including the official leader of this Radar team and collaborators of the TechBrain consulting company who were in charge of the technology side in identifying emerging themes. One of these senior members reported the following planning process at a very early stage of this project: *"In the pre-phase, the ministry had roughly defined its interest, but left it open to the potential agent to formulate more points in detail. This could also be regarded as our project start as, at this point, the intellectual work of our project started."* (Interview: team member 1)

The Radar project proposal included *"a concrete project plan"* (Interview: team leader) which was *"divided into stages and work packages"* (Interview: team member 2). Then the approved proposal was presented and discussed with all project members, as one member reported: *"The plan was discussed right at the beginning of the project as to how the project was to proceed."* (Interview: team member 2) According to one team mate, *"… and then the complete proposal was put into operation; and it was only then that the main project team you met at the various meetings was actually formed."* (Interview: team member 1)

After the proposal had been accepted, this team was restricted to adhering to this approved plan. However, discussion on how certain points from this plan were implemented was often observed in team meetings. In the words of one of the team members, *"Well, I think we did adhere to the plan. And of course the goal to be reached is so roughly defined, and that is just what was intended when planning with the ministry. And this way certain natural frameworks are defined as to when a theme profile has to be finished, or by when certain reports or input papers for workshops, etc. have to be ready; these emerge from that rough basic planning. But the details of how everything is to be carried out, who is to do what, where and when, and where there may be hitches in the process, this can also be decided at such an incremental level."* (Interview: team member 1)

For example, at one of the meetings observed, team members planned how to structure the expert workshop in stage 2 to which it was intended to invite external experts who would evaluate and select the most valuable topics. This expert workshop had already been defined in the presented proposal; however, how this expert workshop was to be carried out was planned at this meeting. The meeting started with the following request to plan the structure and procedure of this workshop together. I observed the following:

Team Leader: "I would like to use this meeting to think about the meetings with TechBrain and what we want to discuss with them related to our planned expert workshop. Among other things, we have to talk about whether the format of the workshop should be two half days, or what."
(Observation of team meeting: 23.06.2009)

In sum, on the basis of the specifications given by the ministry, a smaller subgroup of more senior members of this team came up with a more specific plan which was presented in the proposal to the ministry. Once it has been accepted, the proposal was circulated amongst and discussed in the whole team. Based on this schema, I observed that team members planned together more specific upcoming milestones and procedures in order to achieve predefined work packages, as exemplified in the above fragment of the team meeting. Hence, there was no individual team member, including the leader, who defined the team's goals. On the contrary, the team's planning process was based

mainly on the specifications of the ministry which were, in turn, further elaborated by the senior members of the team and then refined on the basis of the team's common project understanding.

6.7.1.2   Clarifying, Reminding and Coordinating Team's Objective

The official team leader took over the role of "*coordinating*" (Interview: team member 7) the Radar project undertaking and additionally keeping a broad overview of the project. In observed team meetings, he was the person who defined agenda items for meetings which were consistent with the team's project outline. For instance, in one of his e-mails distributed to team members, the leader asked the team members to decide on proposed dates for a team meeting and at the same time referred to items on the agenda for this meeting: *"Dear colleagues, this mail is about deciding on a date for our next meeting. Please be broad-minded when specifying free dates and times that suit you. It would be great if we could manage one of the first two suggested dates. The topic of our meeting is the review and discussion of our profiles; in particular those which we want to develop further (focus group, quantitative survey)."* (E-mail: 23.06.2009)

At the beginning of each meeting, the team leader also presented the agenda points for each meeting in brief, as one team member reported: *"Dieter Müller welcomes us to the meeting and outlines what is planned, and then we start…"* (Interview: team member 6)
At one meeting observed, the team leader started the meeting as follows:

Team Leader: *"Today, we have two main agenda items. Firstly, we will give a short report on the meeting with BrainTech from last Thursday. Then, secondly, we will review the status of our profiles and see how much we have, and then whether we want to do the proposed focus groups or quantitative verification. This is actually the agenda of today's meeting."*
(Observation of team meeting: 7.07.2009)

At the meetings, the team leader was often regarded as the person who knew the plan and upcoming milestones exactly. It was observed that he reminded members of the next deadlines. One team member reported: *"It was really helpful for me to hear the*

plan with TechBrain again, and how this collaboration was to continue. Because without this [clarification] there would just be some dates that are unresolved and nobody is sure of anything. But this clarification gives us a kind of transparency. And this gives me personally the feeling, OK, I know, I need to do this by a certain date." (Interview: team member 7)

The team leader not only reminded team members of the agreed plan, but he also took over the role of focusing team member's dialogue in the direction of the set goal. In the leader's own words: *"Considering the experience of the team members, it was my job in the project group to sort of guide the discussion."* (Interview: team leader) By giving a resume of discussion contents, the team leader tried to stick to the overarching goal of the meetings, as acknowledged by one member:

"Eventually he gives us his views again or summarizes everything at the end so we have something to think about. Yeah, he does that quite often and I think it's good that someone keeps a hold on the reins in such a discussion. And it's good that this can be done in a result-oriented way because that is what sometimes seems to slip out of view … and, well, it's simply his job to make sure we make progress." (Interview: team member 6) Likewise, another team member also conceded the role of clarifying and refocusing project discussions to the team leader. In this member's own words: *"Repeating what he had understood and where, in his view, this would lead to … and this skill here is, as it were, to use this enjoyment of discussion to steer the project so that, in the end, it is completed – and even more or less on time. Then, summarizing be a leadership tool."* (Interview: team member 1)

However, although this team leader summarized the main content of the team's discussion, it was often left undecided which of the team members would do the resulting task as regards more spontaneous upcoming ideas and insights. There was nobody in charge in the team who defined clear responsibilities for what was to be done by the next meeting. One of the team members also noticed this lack of definition and clarification in the members' task responsibilities. In one member's own words: *"Somebody should have been asked to look after the issue. Someone should have said, 'OK, Petra, you raised this, so you can look into it now. Do some research into what the*

forums are about. And the question that Max asked, find out what's behind it, whether we can do that, are there specialists, what will it cost, and so on. That has to be commissioned but this wasn't the case." (Interview: team member 3) For this team member, this definition of clear task responsibilities would not intervene with the open, very participative leadership style given by the official team leader. This member acknowledged: *"He could say, 'Hey, can you do that by next time and then we'll fix an appointment, something like that'. That is not a contradiction, on the contrary, but definitely not contradictory. That can be done in a very participative and collegial way, very much in the team, and still just say that the framing is clear. We are at this point now, we must go in that direction, you are to do this or that…"* (Interview: team member 3)

6.7.1.3 Monitoring

This team collectively gathered information on the team's project progress and development. In the words of one team member, in team meetings, *"We often do a kind of evaluation, like today, in order to look at our performed actions."* (Interview: team member 6) In a similar vein, one of the team mates explained a kind of *"self-affirmation process"* during team's project undertaking. In his own words: *"But this sort of "self-affirmation process", we did over and over…I remember, we consistently had discussions on 'What do we want to achieve with this project? What is our aim? Are we doing it correctly? Are we applying the correct method, or is there any other possibility?'"* (Interview: team member 1) This collective reviewing process was further supported as junior and senior members were involved in preparing the project progress report for the public client. One of the junior team members reported: *"Because I am given some tasks from time to time, for example, when I needed to write the progress report, I kept an eye more or less on our progress."* (Interview: team member 7)

In observed team meetings, team members often presented to each other the status quo of project profiles, or the summaries of emerging topics in the field of technology assessment. For instance, *"The agenda item of this meeting is the review and discussion of the profiles*" (E-mail: 23.06.2009) was one of the main issues at one observed

meeting. Through this collective review, team members collectively identified weaknesses and defined recommendations for enhancing the quality of profiles during the project phase of composing profiles, but they also checked together whether the profile had been done or still needed to be done by members. One team member reported: *"In our meetings the question was raised, how many profiles had already been written or basically how many do we still need to write? And because of our feedback rounds, we knew the status quo of our project."* (Interview: team member 7)

As this team approached the end of stage 1, it needed to review the 60 written profiles which constituted the basis for the evaluation and selection process of the expert workshop in the next stage, stage 2. To do this, one of the team members had the idea to review and evaluate these profiles with the help of an Excel-sheet in which members could write brief recommendations for each profile. Hence, there was no individual member who controlled the team's performance. On the contrary, team members - seniors including the official leader as well as juniors - collectively kept an eye on each other's work and on the team's overall project progress.

6.7.2 Leadership Substance: Relations

6.7.2.1 Building Members' Relationships

Most of the team members knew each other at the beginning of this project as members had worked in diverse compositions in previous projects of the T&S institute beforehand. One team member reported, *"We have known each other for a long time. Most of the team members have already worked in different projects and hence know what to expect from each other."* (Interview: team member 2) Additionally, this member became acquainted with the people he did not know, as he continued: *"We got an impression of the others [that we did not know] at various meetings or during lunch breaks during project seminars. And we don't have any kind of the basic distrust you often find in other organizations."* (Interview: team member 2) Likewise, another team member also pointed to the fact that most of the members knew each other before project start: *"We have known each other quite long. Most of the team members have been working at T&S for a long time in different kinds of project constellations together. So we know each other quite well and know what the others are like. This is*

something you also realize during project discussions. Well, I mean that positively with knowing each other, and what they are like. I think there is a good portion of mutual appreciation and everyone knows the strengths – and of course, in brackets, the weaknesses – of the others quite well. And this enables one to be tolerant about certain things. And with the younger colleagues, … we throw them in at the deep end and they have to swim with us. … at least we do try not to allow any too great distance to emerge in such contexts. As far as possible, we would like to take them with us on the same level." (Interview: team member 1)

One of the young members confirmed this fair and cheerful integration into the project team. In her own words: *"I had known some, or most, of the project members for one and a half years. …And those I did not know were welcoming and friendly to me. … And what I think is great is that, well, in my case, and at the moment I am practically the only non-academic member, I'm only just starting up, or something like that, and they don't mind or hold it against me. So, they've really, yes totally, integrated me; I feel that I have been accepted as an equal, and my opinion is also accepted and respected, and listened to."* (Interview: team member 7)

Although this team did not need to invest highly in building relationships among members since members were acquainted before project start, these relationships needed to be maintained throughout the project. In team meetings, I observed that some of the members showed higher considerate and supportive behaviors to team members than others. One of the senior members, Petra, was the person who often watched out that members felt good. For example, one observed meeting was brought forward in the morning from 10 am to 9 am. I had the chance to realize this change in time as I had just had an interview with one of the members of the Radar team when one of other members asked this member if this change in time would be possible. The team members, who were mainly located in one building, agreed to move this scheduled meeting forward. However, one of the junior colleagues, Britta, worked outside the campus and did not receive this message, which was distributed verbally among members. Additionally, this member did not receive the final profiles of the collaborator TechBrain which were to be discussed in this observed meeting. Hence, Britta

obviously came too late as nobody had informed her about this change. When she entered in this room, I listened to the following conversation:

Team member 7: (quietly): "Hello"

Team member 3: "Hello (speaking loudly), em, we have already started."

Team member 7: "Ah, OK (wondering)! I though, it was to be at 10! Wasn't it?"

Team member 3: "Yes, that is totally correct!"

Team member4: "We are simply ahead of our time!"

Team leader: "We are just going through the profiles which TechBrain have prepared. Did you receive them?"

Team member 7: "No!"

Team leader: "No?"

Team member 3: "Then I'll just print these profiles out quickly!"

Team member 7: "I don't have them."

Team member 3: "I will print them out for you!"

(Observation of team meeting: 13.08.2009)

Petra, member 3, showed highly considerate behavior to Britta, team member 7, and said to Britta straight away during the meeting when she re-entered the room that it was not her fault that she arrived too late at this team meeting. Additionally, this team member's supportive behavior was enforced through directly offering to print the required documents out for her team mate as Britta had also not received the profiles. In the interview, Britta assessed Petra's behavior as: *"I felt much better to know that it was not my fault!"* (Interview: team member 7). Additionally, after this meeting observed, the team leader apologized to Britta for not informing her. In the interview, she reported: *"I did not know it [change in time]. And Dieter [team leader] apologized for that after the meeting and said that he did not know that I would join this meeting, because Olaf [team member 6] did not inform him about my attendance. And because of this, the team did not expect me to come and had already started the meeting when I arrived....And I found both reactions [from team leader and member 3], very good! Dieter's reaction, and that he apologized with, 'I am so sorry!' Very supportive!"* (Interview: team member 7)

Also during project discussions, I observed that Petra often made cheerful, calming comments in situations where project discussions could have lead to explosive argumentations among members. In particular, according to the team leader: *"Yes, Petra is simply, yeah, it's really just the way she sometimes does things. And she is always a person who manages to relieve the tension a bit, simply by saying something nice. Something that Max unfortunately can't manage any more when he is really deep in discussion and has really worked himself up, then he sometimes finds it difficult to loosen up again. Or to ease the situation; I don't mean about the content, but to relieve the situation of the discussion. And Max tends to hold onto the argument as far as possible, and I think he went at Petra in this way. And then Petra is able to loosen the discussion up a bit, sometimes just by making a personal remark, like saying how such things happen in the family and she maybe refers to her own. And on the one hand she might continue on this personal level for a while, because she even uses an example from her own family; but on the other hand she reverts at the same time elegantly or cleverly and reconnects with the group by then saying that all of us here are experiencing the same because Max is in a similar situation, I am in a similar situation, Marcus is in a similar situation. Petra just knows the people well enough that can play this off in a more general role another time."* (Interview: team leader)

Hence, due to this personal nuance by Petra, team discussions were often experienced as less tense and relations among members were maintained as conflict potential were decreased. The team leader awarded Petra a very important role, as he followed on: *"I think this is very important for the group. I personally think it is important to be funny, to make jokes from time to time which in turn loosen up our group discussions!"* (Interview: team leader)

Not only Petra's personal approach, also members' voluntary willingness to take on tasks strengthened the team's supportive climate. *"Olaf is someone who contributes to the group feeling in that he is immediately prepared to take on minor tasks at short notice. This also plays a certain role than when, for instance, a task crops up and for almost five minutes nobody volunteers to do it; then it is of course completely different to somebody like Olaf saying, 'No, no problem, I'll see to it.' This creates more of an atmosphere in which the next time everyone thinks to himself, 'Well, perhaps I'd better*

take on the next job'. In this respect I think that he also contributed to the climate …
definitely with his helpfulness as well." (Interview: team leader)

These described supportive activities by team members led to a highly appreciable group climate. One team member answered the question as to how to assess the group climate as follow: *"At best, super! Really good. It is a very good atmosphere in our team"* (Interview: team member 3). Likewise, another team member also highlighted this open and friendly climate in the Radar team. In her own words: *"... how discussions go on and the project process, I think this motivates me. We always have a very relaxed atmosphere. We sympathize with each other, we are not all best friends and find each other super cool, but I think we like each other, which makes our project work much easier."* (Interview: team member 5)

In sum, as team members were mainly acquainted with each other at the beginning of the project, the team did not need to concentrate on building relationships among team members. However, these relationships needed to be maintained which was done by a few team members, mainly Petra and Olaf, who showed highly supportive and considerate behaviors.

6.7.3 Leadership Substance: Change

6.7.3.1 Intellectual Stimulation

Members' activities, including questioning and challenging each other's arguments, were often observed in meetings of the Radar team. In one member's own words: *"This kind of questioning each other is clearly a part of our discussion culture, in particular of those members who are on site… and especially the methodological discussions are challenged really well and, I think, very constructively in the sense that the person who gets the short end of the stick does not sulk or leave the team or anything like that, even though that would be easily imaginable, nor does he withdraw from the discussion."* (Interview: team leader) In a similar vein, another team member acknowledged: *"I think we incite each other. Not only because of our fellowship, but rather due to the liveliness of each team member. We have a kind of dynamic in our discussions."* (Interview: team member 7) In this vein, the team leader described the process of intellectual stimulation

as follows: *"Team members take over the role and try to examine the matter from an external standpoint. Members endeavor to follow each argumentation and be critical. But I have the impression that this was always very constructive."* (Interview: team leader)

Although most team members considered each other in a position to question each other's work, it became evident that two team mates were highly involved in these intellectual stimulation behaviors. In particular, *"Max and Petra"* (Interview: team member 5) were the ones who often emerged as the intellectual challengers in the group. One of the members described Max as the one *"… who had an evil eye,"* (Interview: team member 6) or *"Max is simply into taking a questioning attitude"* (Interview: team member 6). In one observed team meeting, for instance, the team discussed the methodological approach of ranking and selecting its profiles. In the proposal presented to the public client, the team planned that only experts would select and rank the most interesting and innovative profiles. An this meeting, however, a further idea related to evaluating the profiles came up in the discussion, namely to also have these profiles ranked by laymen in an additional workshop. I observed the following dialogue:

Team member 3: "There are two principal problems. Firstly, a further workshop with 15 participants that would be weighted higher than the empirical studies which build on a big basis, to some extent with surveys. And then, if these participants [of the laymen workshop] *hand in a rating, what are we going to do with the results? Which* [profiles] *will we hand over? Only the selected ones, or all 60 profiles. We would have to change the concept. We would grant this a higher impact than the expert workshop. Are these experts only allowed to nod them through? Or should they discuss all 60 profiles? How are we going to deal with the results? What impact will this have?"*
Team leader: "I don't think we can handle this at all ..."
Team member 3: "And then what?"
Team leader: "There is something to be said against it."
Team member 3: "I see the signs that this workshop will have a high impact because we have a lot of work to do. The results would need to be integrated, and maybe we would

have some biases. Depends on what kind of participants attended this workshop. But on the other hand, we would have a large empirical basis."

Team member 1: "I don't understand your point. What are you putting in proportion, and what is outsmarting what?"

Team member 3: "The profiles, there are partially some empirical data bases that we would also like to discover."

Team member 1: "But not in proportion of the topics to each other?!"

Team member 3: "No!"

Team member 1: "Yeah, but that's what it's all about."

Team member 3: "Yes, but – actually…"

Team member 1: "Actually, I see one point which is quite difficult. If something completely different emerges from the laymen's rating than from the experts', how are we going to straighten that out? [all laugh] So, to put the matter in a nutshell, yeah, your reservations, but ... "

Team member 3: "And then there is this relevance to the current situation, cos these studies were made beforehand, let's say for the daily topicality in them, about what was happening, yeah, with this ranking and this is obvious in these surveys, with the British surveys [with the laypeople]. This is very specific to the current situation, what is discussed then, what is ranked at the top, then number 1, 2 and 3 are put in, and if you do this a week later, the result will be completely different."

Team member 1: "But the good thing is that with a discursive approach, participants would come up with reasons."

Team member 3: "Yes, but, -"

Team member 1: "Yes, well, if we were now to compare two different discursive formats, experts and non-experts, then this criticism would not take effect. In a survey, a quantitative survey. But this would not take effect if you get them to discuss the same things in an identical format. "

Team member 3: "But then you need informed citizens, because they need to exchange arguments. Then these participants need to be informed."

Team member 1: "They will get the profiles!"

Team member 3: "But then these citizens need to be academics who can…"

Team member 1: "I don't think they have to be on the same level, that they need to be highly academic. And that is exactly the assumption, namely that the experts, even more

than the better-informed non-experts, do not have any expert status in most of the topic
profiles."

Team member 3: "But these guys would comprehend and understand it easier…"

<u>*Team member 1:*</u> *"That's quite an allegation."*

Team member 3: "Yes, I'm just saying it like that …"

<u>*Team member 1:*</u> *"I get your point! I do not want to stick up for this workshop but, if we*
said we would do something different with the money, then that's fine with me. But, your
concerns, Petra, are not correct!"

Team leader: "So, you are actually advocating a workshop after the expert-
workshop?!"

<u>*Team member 1:*</u> *"I'm not advocating anything!! I only made a proposal what we could*
do!..."

(Observation of team meeting: 07.07.2009)

This fragment of dialogue exemplifies Max's challenging role in the team. He tried to
push the other team members to rethink or question the assumptions they held.
However, some of juniors needed to learn how to take this kind of challenging attitude,
as one member acknowledged: *"Sometimes these comments are very direct and this*
frankness can sometimes be quite offensive …" (Interview: team member 7).

As exemplified in the above excerpt from the team's discussion, Petra, team member 3,
often took, according to her, the role of *"devil's advocate – hence, critically questioning*
and turning it inside out…" (Interview: team member 3). She was also the person who
actively engaged in intellectual stimulation behaviors during team discussions. Besides
her role of questioning the whole team, it was often observed that there were genuine
argumentations between Petra and Max, such as in the above fragment. One of the team
members described this questioning behavior of team members, in particular of these
two, as follows: *"By referring to concrete statements and claiming that they are not*
sure if they will sign this, by doing so, they build up a contraposition. And this appears
remarkably often between Petra and Max. This is very interesting because both give
totally different opinions which both often state… I think this helps a lot as they claim
that one can regard the point differently." (Interview: team member 6) Likewise, Max
also reported about these discussions between him and Petra. In his own words: *"…our*

potential of discussions is also day-dependent. But I remember some short, harsh discussions between Petra and myself. And I would say I am definitely not uncritical about what my colleagues are doing!" (Interview: team member 1) Although most of the senior members appeared to engage in critical argumentations, it was observed that Max and sometimes Petra were the members of the team who took over the intellectual stimulation role in this team.

6.7.3.2   Boundary Spanning Activities

Radar's boundary spanning activities involved two main activities, (1) the scouting and acquisition for external information, and additionally (2) the coordination with external parties. By nature of the team's consulting task, this team needed to intensively scan its external environment. At the beginning of the project, few members of this Radar team scouted the actual press in order to figure out emerging innovative themes and foresighted needs of society. After topics were defined and members were assigned to different topics in order to compose the profile, each member was responsible for the external research of their respective profile. One member explained her scouting activities as an example: *"…Mainly from the internet. Firstly, due to the fact that I have already researched these topics [in the very early phase of stage 1], and then for my own profile, I typed the heading in and looked for some information in the internet. And sometimes, I had already read something in advance and took this information, but normally I repeated a kind of research and looked what I could find in the internet. Then I often built on one source of information, on one quote."* (Interview: team member 7) Likewise, another team member acknowledged: *"I already know the fields of the profiles well, they were easy to write down. But, for the other profiles, I looked up information in the internet. First of all, I basically googled, in Google scholar, and then I looked up some academic papers…"* (Interview: team member 3)

Besides online research, team members also took advantage of experts outside the team's boundaries. For example, one of the junior members worked closely with a member of the T&S institute on a topic with which he was not acquainted, though he needed to be. In his own words: *"Work-life balance is my topic. I needed to work in this*

field. I talked to a member of T&S who is a specialist in the field of organization.” (Interview: team member 6)

Knowledge gaps which could not be filled in by expertise of T&S members were completed by further external consultancy. One of the members reported: *“The knowledge gap - we had known about this before, but who exactly would fill this came up in the process.”* (Interview: team member 1) In particular, this team wanted to acquire additional information on empirical social science research externally in order to underlay the profiles with additional empirical external research. One team member reported on this external acquisition: *“At the very beginning of this project, we looked at some think-tanks and thought about buying some of the information. But, based on the information we received gratis, this acquisition would not have been worthwhile. And market research is quite expensive, but we contacted Mr. Müller from delta consulting and asked if they had any results of studies…”* (Interview: team member 6) In one of the observed meetings, Markus, team member 4, proposed delta consulting as a way to receive further external information. Markus and Max visited members of this consulting agency and discussed possible collaboration. In the following project meeting, both members updated the rest of the team of this opportunity to gain external empirical information. *“Let's go through all our topics and decide what would be the best for delta consulting”* (Observation of team meeting: 23.07.2010), proposed Petra when the team talked about this collaboration with delta consulting and selected the topics in which this team suggested buying external information. In the interview, Max acknowledged: *“In this case, this is about a very specific use of knowledge stock which we do not have. Delta have a lot of knowledge in the field of empirical social science…and we do not know this very well, only to a limited extent. But this seems to us very helpful for this project.”* (Interview: team member 1)

Not only the scouting process of external information was collectively done, more team members were also involved in the coordination undertaken with the external partner and the public contracting body. Although the team leader was officially in charge of coordinating with both external parties, he tried to include some of the other more senior team members in this process. Team member 1 explained it as follows: *“This project is a consulting project and our political client is the ministry. And the official*

team leader, Dieter, is responsible for this contact. He has to take care of the external contacts. Additionally, we have an external partner…and with this partner we are in a process of close coordination. Dieter - as the team leader - is the official contact person for the public contracting body, and also for the partner. However, a small subgroup emerged which carried out the main coordination jobs [with the external project partner]. These are primarily Dieter and myself and also Marcus … and sometimes Sina. And this is the kind of core team doing this kind of coordination with the project partner." (Interview: team member 1)

The team leader greatly supported and encouraged the idea of collectively coordinating the project with the external partner. However, as the project partner only attended these meetings with two members, Dieter, the team leader, formed a core team which consisted of four members. In his own words: *"Generally speaking, I would support the idea of attending these few meetings [with the external project partner] with all the team members because then we would not have the job of transferring this information to each other. Then we would invest our travel expenses very well, in my personal opinion. However, our project partner does not take the same view and has communicated this clearly to us. They have a kind of bigger team which acts differently. After that, I just thought it would not be fair to the partner to go ahead with this, so I set the number of people at the highest acceptable maximum. Going with four people to meet two, that is a factor of two. More would have been difficult because it would have reduced the discussion efficiency there. Yeah, and it's very important that this efficiency is not only at the expense of others."* (Interview: team leader) The reasons for this collective coordination with the external partner were explained by one team member as follows: *"First of all, I think we want to show a kind of unity, this could be one reason. Then, of course, many ears hear more than only two and can also transfer the information better to the others. Because, I mean, if Mr. Dieter Schmidt were to sit on his own, and have to deal with writing, listening and discussing, then this would lead to chaos. In this way, it is warranted that at least somebody catches things, and that is also apparent in the narrative flow [in our meeting]. Then one person is speaking and another one says, 'yes, but you forgot to say…' or something like that."* (Interview: team member 7)

According to one team member, this core team that emerged differentiated from the rest of the team by way of *"… the external contact, that these members are engaged in this external contact. And I personally could not do it because of my familiar commitments."* (Interview: team member 3) Hence, boundary spanning activities were shared among the team members. Most of the team members were highly involved in scouting for external information; in particularly Max and Marcus were in charge of establishing a collaboration with delta consulting, the consumer research consultancy that had helpful, new information for selected profiles on offer. The official team leader also integrated further members, the so-called "core team", to be involved in the coordination process with the external parties. The team leader tried to engage as many members as possible in this reconcilement of interests between the collaborator, the client and the Radar team.

Leadership Substance	Leadership activities	Illustratve Data
Task-oriented	Collective Planning	"In the pre-phase, the ministry had roughly defined its interest, but left it open to the potential agent to formulate more points in detail. This could also be regarded as our project start as, at this point, the intellectual work of our project started." (Interview: team member 1) "The plan was discussed right at the beginning of the project as to how the project was to proceed." (Interview: team member 2) "Well, I think we did adhere to the plan. And of course the goal to be reached is so roughly defined, and that is just what was intended when planning with the ministry. And this way certain natural frameworks are defined as to when a theme profile has to be finished, or by when certain reports or input papers for workshops, etc. have to be ready; these emerge from that rough basic planning. But the details of how everything is to be carried out, who is to do what, where and when, and where there may be hitches in the process, this can also be decided at such an incremental level." (Interview: team member 1)
	Clarifying, Reminding and Coordinating Team's Objectives	"The official team leader took over the role of "coordinating." (Interview: team member 7) "Dear colleagues, this mail is about deciding on a date for our next meeting. Please be broad-minded when specifying free dates and times that suit you. It would be great if we could manage one of the first two suggested dates. The topic of our meeting is the review and discussion of our profiles; in particular those which we want to develop further (focus group, quantitative survey)." (E-mail: 23.06.2009) "Repeating what he had understood and where, in his view, this would lead to … and this skill here is, as it were, to use this enjoyment of discussion to steer the project so that, in the end, it is completed – and even more or less on time. Then, summarizing be a leadership tool." (Interview: team member 1) "Eventually he gives us his views again or summarizes everything at the end so we have something to think about. Yeah, he does that quite often and I think it's good that someone keeps a hold on the reins in such a discussion. And it's good that this can be done in a result-oriented way because that is what sometimes seems to slip out of view … and, well, it's simply his job to make sure we make progress." (Interview: team member 6) "Somebody should have been asked to look after the issue. Someone should have said, 'OK, Petra, you raised this, so you can look into it now. Do some research into what the forums are about. And the question that Max asked, find out what's behind it, whether we can do that, are there specialists, what will it cost, and so on. That has to be commissioned but this wasn't the case" (Interview: team member 3)
	Collective Monitoring	"But this sort of "self-affirmation process", we did over and over…I remember, we consistently had discussions on 'What do we want to achieve with this project? What is our aim? Are we doing it correctly? Are we applying the correct method, or is there any other possibility?' " (Interview: team member 1) "The agenda item of this meeting is the review and discussion of the profiles." (E-mail: 23.06.2009) "In our meetings the question was raised, how many profiles had already been written or basically how many do we still need to write? And because of our feedback rounds, we knew the status quo of our project." (Interview: team member 7)

Relations-oriented	Building and Maintaining Members' Relationships	"We have known each other for a long time. Most of the team members have already worked in different projects and hence know what to expect from each other." (Interview: team member 2) "Yes, Petra is simply, yeah, it's really just the way she sometimes does things. And she is always a person who manages to relieve the tension a bit, simply by saying something nice. Something that Max unfortunately can't manage any more when he is really deep in discussion and has really worked himself up, then he sometimes finds it difficult to loosen up again. Or to ease the situation; I don't mean about the content, but to relieve the situation of the discussion. And Max tends to hold onto the argument as far as possible, and I think he went at Petra in this way. And then Petra is able to loosen the discussion up a bit, sometimes just by making a personal remark..." (Interview: team leader) "Olaf is someone who contributes to the group feeling...In this respect I think that he also contributed to the climate … definitely with his helpfulness as well." (Interview: team leader) "At best, super! Really good. It is a very good atmosphere in our team." (Interview: team member 3)
Change-oriented	Encourage Members to View Points in a Different Way	"Max is simply into taking a questioning attitude." (Interview: team member 6) "Petra often took the role of "devil's advocate – hence, critically questioning and turning it inside out…" (Interview: team member 3) "By referring to concrete statements and claiming that they are not sure if they will sign this, by doing so, they build up a contraposition. And this appears remarkably often between Petra and Max. This is very interesting because both give totally different opinions which both often state… I think this helps a lot as they claim that one can regard the point differently." (Interview: team member 6)
	Collective Boundary Spanning	"At the very beginning of this project, we looked at some think-tanks and thought about buying some of the information. But, based on the information we received gratis, this acquisition would not have been worthwhile. And market research is quite expensive, but we contacted Mr. Müller from delta consulting and asked if they had any results of studies…" (Interview: team member 6) "Generally speaking, I would support the idea of attending these few meetings [with the project partner] with all the team members because then we would not have the job of transferring this information to each other. Then we would invest our travel expenses very well, in my personal opinion. However, our project partner does not take the same view...." (Interview: team leader) "First of all, I think we want to show a kind of unity, this could be one reason. Then, of course, many ears hear more than only two and can also transfer the information better to the others. Because, I mean, if Mr. Dieter Schmidt were to sit on his own, and have to deal with writing, listening and discussing, then this would lead to chaos. In this way, it is warranted that at least somebody catches things, and that is also apparent in the narrative flow [in our meeting]. Then one person is speaking and another one says, 'yes, but you forgot to say…' or something like that." (Interview: team member 7)

Table 15: Shared Leadership (Radar Team)

6.7.4 Development of Shared Leadership

The prerequisite for the emergence of shared leadership in the Radar team was part of T&S organizational culture, including the downplay of organizational hierarchies, both between the management of the institute and the project level and also within each project. One of the team members reported, *"We have flat hierarchies. That is certainly one aspect. There is nobody in our team that everybody turns to in order to find out what he thinks so they can say what he wants to hear…"* (Interview: team member 2) In a similar vein, another member claimed: *"For us it is quite normal that project leaders do not have such a superior role so that they practically decide what is to be done in the project."* (Interview: team member 1)

In the understanding of the T&S institute, according to one team member, project leaders were in charge of *"… very formal tasks. The project leader takes care of all the administrative processes involved in projects, such as reporting duties, budgeting and control, etc. making sure these things are done properly … In rare cases, the official team leader has something like a guideline competence – they [team leaders] would theoretically have guideline authority. But, usually this guideline authority is not made use of and most of the things are negotiated within the group…"* (Interview: team member 1)

Besides the flat organizational hierarchies mentioned, the assumption of leadership activities by the team members was supported by the expertise and seniority of many team members. One member reported, when asked to comment on leadership in his team: *"Leadership, yes, we have a project leader, but in my opinion he keeps a very low profile, as we have very experienced colleagues in our group who have many ideas and proposals related to our project."* (Interview: team member 2) Moreover, the official team leader acknowledged that he tried to warrant freedom in each single subproject due to the expressiveness of many members in his team: *"In this project group, and in view of the experience of its members, my task really involved guiding the discussion a bit."* (Interview: team leader) This intended low level of leadership influence from team leader to members aimed rather at a self-mutual influence process among all members which was also explained to be due to the team leader's further commitments as an

institute co-leader of T&S: *"After a while the project team members know that I cannot fulfill all needs as a project leader. To this extent they are assigned the role and play the part."* (Interview: team leader)

Hence, it was observed that team members, particularly more senior ones, were involved in the leadership process and often stepped in when they recognized the need to do so. One team member reported: *"There are sometimes unsettled points where I have the feeling that we need to discuss it, like today with various things. That is also the case with the other team members. Comments are made like 'we need to…, what does it actually look like…, there we did this in such a case, …who is doing that?' These questions were often raised by us…"* (Interview: team member 3) In a similar vein, another team member acknowledged that team members collectively had an eye on project progress and additionally assumed the role of intellectually challenging each other's arguments in project discussions. In his own words: *"There is no central decision- maker who defines how to do something and so on. And you can also see this in our project, that we collectively discuss project progress, that we develop our project approaches together, and additionally that we allow these approaches to be challenged by the others."* (Interview: team member 1)

As team members were acquainted to each other from other previous joint projects, there was not such an emergence and development observed as in the previous student teams. The shared leadership distribution was rather present when I entered into this project.

6.8   Team Learning Process

6.8.1 Reflection

6.8.1.1   Seeking Help and Feedback

Field data identified a set of activities which team members engage in to invite their mates to participate in problematic situations. Particularly young team members often looked for help in the process of the Radar project. For example, one of the members recalled the following: *"When I was writing the profiles, I asked them for help during*

the meeting, because I was not getting on with one of my profiles. And I said 'Please help me'… I really did not know what to do and I asked them to help me." (Interview: team member 7) One instance was observed when team members collectively reviewed the preliminary proposals for profiles. This meeting had been fixed to go through distributed profiles together, when one of the young members asked the other members for help. The following team situation was observed:

Team Leader*: "Today we received a number of profiles - a lot. I thought that for today's meeting we should think about which profiles we want to do more with? - Surveys we want to do quickly !?! On the other hand, we should use this meeting as an opportunity to go through the 10 profiles that have been distributed to check the correctness of the format, the structure….And we should take this meeting as an opportunity to discuss the profiles we have in front of us as well, and to go through them as regards their content. What do you think? What about the order? Who would like to start?"*

Team member 7: *"Yes, I have a problem with my profile. I don't know which of you has read it. Otherwise I have some copies here - because I'm really having difficulties - wow – I'm finding it really hard to cope with the topic of social undesirable behaviors. [Team member 7 hands over a copy to team member 3]. In the meanwhile, I have already asked Max. And I thought at that moment that I would manage it, but I don't really know what to do. At the beginning, it was not clear to me what the term 'therapy' really means? And then what social undesirable behavior actually means? That can be viewed either this way or that … these are my problems … I only wrote these parts as bullet- points because I felt very unsure. I would like to discuss this issue with you …. First of all, I would like to know if the subpart 'what is it about' is correct, or what could I add? Do you guys have additional ideas?"*

(Observation of team meeting: 13.08.2009)

This fragment of the team meeting exemplifies this openness of seeking help from others. This team member honestly stated the difficulties she had experienced in composing the profile. She claimed that she had already sought for feedback from Max on a bilateral basis. Additionally, another young scholar also acknowledged when experiencing problems that he had often asked some of the team members, more on a

need basis, outside meetings. This team member described it as follows: *"We talked to each other outside our team meetings too. For instance, I recently talked to Petra to get some more insights…. If any one has questions, these questions are definitely answered. It was not her profile, but we discussed some points during a break in speaking speech. This was really good for me, as I received some new aspects…"* (Interview: team member 6)

In meetings observed, the more senior team members sought for feedback as well, not by acknowledging experience problems, but rather by asking their mates to comment on their ideas and proposals. One of these members claimed: *"Either we clarify it in our project discussion [during the meeting] or often, we receive bilateral feedback because we often distribute our profiles in advance and then some members already show interest before the meeting, but also often during the meeting."* (Interview: team member 2) The above fragment of team meeting additionally exemplified that this team took the time to refer to each individual profile to seek feedback. In this observed meeting, after team member 7 had revealed her difficulties, other team members sought for feedback on their profiles as well (Researcher's diary).

Furthermore, team members did not stop at team's boundaries when seeking feedback; rather T&S members outside the Radar team's boundaries were also consulted. In one team member's own words: *"At times, there are some colleagues who are not directly involved in this project but who we may consult when we have questions. Actually, this is part of the philosophy of our project, that the whole institute is involved in this project wherever it makes sense."* (Interview: team member 2)

6.8.1.2   Giving Help and Feedback

While help-seeking activities encourage others to participate in solving problematic situations, these activities do not guarantee collaboration from the others. On the contrary, the others need to take some time and effort to assist in raising open questions from others. In this team, members acknowledged a high degree of willingness to help each other. In one member's own words: *"I think we do not work side by side, but rather truly together. And ideas are listened to and not put down, and there is not only*

one person in the team who decides things – the project leader. And the project does not only take place in project meetings, instead I often go to Petra, to her office, and we discuss some parts. I think we work together really well." (Interview: team member 5) In a similar vein, another team member also acknowledged this mutual feedback given within the team. He reported: *"Team members show willingness and openness to look through and to discuss someone else's part and to give some advice. But everyone still has the image of uncommunicative scholars who withdraw to their rooms to write treatises. But this is not the case in our team. There is always the possibility to make contact; I do not have any kind of reservation about approaching team members."* (Interview: team member 6)

In observed team meetings, the comments team members received were often very provocative and challenging to the person who presented the idea. These comments were, however, regarded as very supportive, because ideas were not only frequently questioned, but rather comments were given that proposed ways of improving the idea. In one member's own words: *"The good thing is that everything is questioned at the meetings, but additionally, we find a way to achieve a result together. No-one is left out in the cold when they are criticized. And that, well I find it very positive that there are actually no exposure campaigns, but just argumentative exchanges that take place on an objective level."* (Interview: team member 6) Receiving feedback from colleagues often includes new perspectives on the topic, as one of the members explained: *"I wrote for instance the profile 'digital naïves' and Mr Meier commented at the meeting that he was not satisfied with it. I think I wrote this profile from my perspective and it included my perspective. And I think I composed the profile the way I understood the topic. But it seems to me that he [Mr. Meier] views this topic from a different perspective and I am looking forward to his reaction. [In the observed team meeting, there was no time left to discuss this in depth. That is why both persons postponed this discussion to a later time] So, what his critical comments are about, and I am looking forward to receiving them in order to get some new impulses."* (Interview: team member 5)

Outside team meetings, team members also sent each other information which they though might be of interest for the respective profile. For example, one of the team members reported: *"For instance, during my research, I found some aspects for*

affordable medical care, Petra's profile. Then I sent her these two references, two key words, I thought these would help her to research in this direction. Then she actually implemented this advice in her profile." (Interview: team member 5)

6.8.1.3 Reframing

In project discussions, it was often observed that team members changed their initial perception of the project into a new understanding. One of the team members described it as *"a kind of internal self-reassurance and self-reflection, this is part of our task!"* (Interview: team member 1) In team meetings, one of the members often presented an idea which again was absorbed and commented on by team members. It was observed that members made new sense of what they had already known. Discussions led to new framings of the initial position. Britta referred to one instance when explaining this reframing process: *"It was about my profile of undesirable social behavior. Team discussions did not change it by 180 degrees, but it actually led to a kind of direction which I had not seen before."* (Interview: team member 7) Another team member exemplified this kind of reframing of her profile as well. In her own words: *"The profile was related to illness and the second one to aliment. I did the changes based on the comments I received from the group…I absorbed the criticism and incorporated the feedback into my profiles."* (Interview: team member 3) One of the members remembered this successive reshaping of Petra's profiles as follows: *"Petra's profile, the one about the eating habits, we discussed this twice in detail when she more or less left each time with the comment that, OK, she would try again to sharpen it in order to convince us."* (Interview: team leader)

This reshaping of the team's initial understanding was not only encouraged by internal challenging comments by members, but also by external partners. Dieter, the team leader, recalled a reconsideration of one member's profile as follows: *"With the profile digital naïve, it was a combination. On the one hand, one of the guys from TechBrain commented, 'this combination is odd'. And this was in line with what we had already discussed in one team meeting. The question was actually if this kind of naïves, old people who can not follow this* [digital world], *whether this problem still exists? Or whether these people have already grown out of the generation that is working. Hence,*

65-year-old people who cannot work with a computer are less likely to be found…. And because of that we took it out...” (Interview: team leader)

Members of this team built on each other's comments, some of them more challenging than others, which led over the course of time to a reshaping of previously held assumptions. This successive building of member's comments to a new understanding is exemplified by Britta's explanation: *"It was about synthetic biology; whether this topic was something new or not and whether we would still take it into consideration or not. And in this discussion, Max and Petra had a kind of debate. He said something and she said something different. What it boiled down to was that neither of them had the correct meaning of the term 'synthetic biology' in mind…and coincidentally, a week before, I had attended a seminar in Berlin which was about synthetic biology… and I had my notebook with me in which I had remarked on the term synthetic biology. In this debate, Max concluded that they were maybe talking about two different things. And then Dieter Schmidt recommended clarifying this definition. And then I said, hey guys, 'I have the correct explanation'. Then I told them what I had written down. And based on this, our discussion on this topic became clearer and clearer."* (Interview: team member 7) Based on Britta's clarification of the term 'synthetic biology', the team reconsidered what it had previously discussed.

6.8.2 Action

6.8.2.1 Codification

During my research stay at the Radar team, I rarely observed that team members translated collective implicit insights from team discussion into explicit codified knowledge on a collective way. During the observed team meetings, team members gained new insights and also defined tasks that needed to be done; however, these insights were not translated into explicit action items in the form of meeting records. Once in a while, team members sketched some ideas on the board during some brainstorming session, though I did not perceive that these ideas were translated into a document or a digital file in the form of a photo which could be viewed by members at a later point in time.

The codification process seemed to run more on an individual basis. The insights which team members received relating to the profiles were individually integrated into the profiles. In the observed team meetings, some of the team members also wrote down reference points which were, however, not proactively shared among team members in the form of meeting minutes. Actually, even the team leader acknowledged this lack of writing meeting minutes. He reported: *"We don't do this [take minutes]. Each author is in charge of doing this him or herself. Once we actually did have a problem as one of the members could not attend this meeting. Then I tried to communicate what had been discussed to her, or Olaf tried it. In some cases, this could have been done much better, I think. The alternative would have been to take minutes of meetings and to try to record information."* (Interview: team leader) But for him, this was a kind of trade-off decision related to the cost and added value of the team. In his own words: *"It would be very expensive [to write records]. So this was also a cost consideration, at least a bit."* (Interview: team leader)

Another team member underplayed the need for writing meeting minutes. In his own words: *"Relatively little is taken down in writing. This would be a lot of effort for little benefit. And because we pretty much stick by our decisions; I mean that when something has been decided in the project meeting, and then, as a rule, the colleagues abide by that, then I think such a very formal process is unnecessary."* (Interview: team member 1)

In contrast, however, other team members highlighted the future need for taking written records of team meetings. The absence of any record including agreed issues often led to the fact that team members did not really know when and what the next steps were. According to one team member, a record would support team members in finding team information. In her own words: *"There is no record which contains what we have arranged. And in our project we often experience situations like 'Who has written it and where, what is it? In which folder?'"* (Interview: team member 3) In particular for any members who were not able to attend the meetings, minutes would have been of high relevance as this team member followed on: *"Although one of the others had already said that we would need a record of the meeting so that we were aware of what had been discussed and when, even in the case of absence, and when was documented. But*

in our case, nothing was documented and then I also said that we really need records of our meetings." (Interview: team member 3)

Contrary to the meetings held inside its own boundaries, the team kept records when meeting with its external partners. One team member reported: *"I just conferred with our project partner. And then we changed to a strict record technique, and there it does not function without records."* (Interview: team member 1)

6.8.2.2   Transferring New Knowledge to Others

The attitude of the team members towards transferring information to others outside its own boundaries seemed to be open. In the interviews, members reported that they would often informally refer to new topics identified in this Radar project when speaking to other members of the T&S institute during their lunch breaks. In one member's own words: *"This happens during our lunch breaks, yes, we sometimes talk about these topics."* (Interview: team member 5) Along the same lines, the team leader reported: *"I know from our lunch breaks that theses kinds of topics are preferably discussed. Yes, when 'foresight' scholars have found a good source of information then it is a very good topic for our lunch breaks. I do not really know if they discuss the methodology in finding and evaluating these topics, or whether this can be communicated…"* (Interview: team leader) Hence, team members updated the others rather informally about members' profiles sooner than about the procedure, the methodology on how to achieve the most important topics.

When this project stood at the beginning of its life cycle, team members generally talked about the Radar project rather than the transfer of final project results from this project to externals. One of the members referred to an instance when he informed one of his colleagues at the T&S institute about the Radar project: *"One of my colleagues had asked me what we were doing? Then I explained our project to him. This guy was surprised at the importance of our project."* (Interview: team member 6) In the interviews, members indicated that later in the project results of the Radar project would be *"…presented in monthly workshops in which topics and methodologies and discussed…"* (Interview: team member 2) among members of the T&S institute.

Additionally, team members seemed to be open to presenting their preliminary profiles to their collaborators at TechBrain, the partner responsible for identifying themes that were characterized by a high technological relevance. They shared each other's profiles and met in order to discuss their profiles.

6.8.2.3   Making Change and Improvement

Overall, team members acknowledged a continuous change and improvement from the beginning to the present stage of the Radar project. In one member's own words, *"Where we are concerned, this project is running very well and disciplined … although it seems that we discuss a lot… Under the present circumstances, the project is making good progress - and very fast when it is evaluated against more hard facts. And I think if we had a kind of dead climate in which nothing happened, where nothing was discussed, this would be boring. This project would not be much fun!"* (Interview: team member 1) Another team member highlighted the progress the team had made since project start as well: *"This project is a very satisfying experience, a project in which something really happens, where something is demanded. It is good for me to know that I am not working for the garbage can…. One of our workshops, for example, was really good because we worked constructively a whole day and really moved on as regards content."* (Interview: team member 6)

At the beginning of the project, some of the junior members searched for emerging forward-looking themes, which in turn were subsequently ranked by team members. This process of identifying new themes was new to the team members and was acknowledged as a successful advancement stage. One member reported: *"It went off fruitfully without a hitch … the searching process in which at the start of the project we had not known how to proceed."* (Interview: team member 1) During a workshop in the middle of stage 1, *"We combined many themes, because we often had topics double and triple. And at this workshop we divided them and kicked some out, and those that seemed to us to be relevant stayed."* (Interview: team member 7) Over the course of the project, the proposed themes at the beginning of the project changed in as much as, *"Some topics do not lead back to the initial source of information now, they have changed so much in the course of discussion."* (Interview: team member 3)

During my research stay, team members often gave feedback on each other's profile. One member reported: *"Profiles were written and then there was a kind of evaluation phase where everyone looked through them, where we proofread, where we received comments from our colleagues, and then we incorporated this feedback."* (Interview: team member 5) Another team member acknowledged a gradual improvement of her profiles, *"I rewrote the profile relating to illness and food based on the feedback I had received from the group. … I integrated the criticism and changed it."* (Interview: team member 3) Another team member also confirmed the general reaction of the team to feedback received. One of the members reported: *"We are currently implementing the feedback we got. To some extent, integrating the comments will work, but in other cases, I am not sure if it is possible. But, generally speaking, we try to elaborate on feedback we receive."* (Interview: team member 1)

Although most of the feedback directed at individual profiles was implemented by the team members, it was observed that some more general ideas directed at the overall project were not followed up. In one meeting observed, at the end of stage 1, team members identified the profiles where there was a thematic overlap. Members discussed combining identified profiles, however this change did not happen as one of the team members reported: *"We discussed which profiles should merge. We said we could merge this profile with this one and that one; yeah, that was the problem - 'we could!' We could do it, it could be done, but no decision was made. The person did not receive any instruction. And I was a little bit disappointed and thought, 'These are the same profiles, unmodified, which are to be included in the final version.' Nobody merged the profiles, but, they should have done!"* (Interview: team member 3)

6.9   Effects of Shared Leadership on Team Learning

Summary: Team's Learning

In sum, this team engaged in an almost complete learning process, conceptualized as interplays of *reflection* and *action*. However, I identified some difficulties in the team's action part of learning that should have been taken to implement team's gained insights.

With respect to the team's reflection, I observed, over the course of the project, a set of activities in which team members engaged to encourage their team colleagues to join in problematic situations. Not only young team mates often looked for help in the process of the Radar team and openly admitted to needing members' help; even the more senior team members sought for feedback in the form of asking their mates to comment on their ideas and proposals. Members did not stop at their team's own boundaries when seeking feedback; instead, externals were also consulted to gain their feedback on the team's approach. While feedback seeking usually only invites others to join in each other's process, this behavior does not guarantee the members' willingness to take the time and effort to participate in each other's subproject undertaken. In this team, however, members did make the effort, they discussed and went through the various members' tasks. Indeed, comments team members received among each other were often characterized as very provocative and challenging. These arguments were regarded as very supportive as assumptions were not only voiced as questions; rather the team often collectively found new ways to approach the individual member's task. Hence, over the course of observed stage 1 of the Radar project, team members successively changed their initial perception of project subtasks into a new understanding. I identified that members shifted each other's awareness in ways that made new frames visible.

In terms of the team's action part - activities that teams need to implement in order to benefit from collectively gained insights - it was revealed that this observed team experienced some minor weaknesses. Collectively gained insights were rarely translated into explicit codified knowledge in the form of taking minutes of meetings. Instead, the team individually put down gained insights, although a sharing process of this codified knowledge was not observed. In addition to the team's rather individually oriented codification activities of gained insights, team members showed themselves to be open to sharing preliminary results of the Radar team with externals, members from the team's organization as well as project partners. All in all, team members acknowledged progress in the Radar team project and a gradual change of individual profiles. It emerged that team members implemented feedback and ideas received from colleagues which, over the course of the project, led to successive improvements in the team's profiles. Although most of the received feedback directed at individual profiles was

implemented by the team members, it was observed that some rather general project ideas that did not relate to specific members were not followed up and hence sank into oblivion.

The following table summarizes the learning behaviors engaged in by the team, subdivided into reflection and action.

Reflection Developing Collective Insights		Action Implementing Gained Insights	
Markers:	Illustrative Data	**Markers:**	Illustrative Data
Seeking Help and Feedback	"When I was writing the profiles, I asked them for help during the meeting, because I was not getting on with one of my profiles. And I said 'Please help me'… I really did not know what to do and I asked them to help me." (Interview: team member 7) "Yes, I have a problem with my profile. I don't know which of you has read it. Otherwise I have some copies here - because I'm really having difficulties - wow – I'm finding it really hard to cope with the topic of social undesirable behaviors…" (Observation of Team Meeting)	Codi-fication	"We don't do this [taking meeting minutes]. Each author is in charge of doing this him or herself. Once we actually did have a problem as one of the members could not attend this meeting. Then I tried to communicate what had been discussed to her, or Olaf tried it. In some cases, this could have been done much better, I think. The alternative would have been to take minutes of meetings and to try to record information." (Interview: team leader) "There is no record which contains what we have arranged. And in our project we often experience situations like 'Who has written it and where, what is it? In which folder?'." (Interview: team member 3)
Giving Help and Feedback	"I think we do not work side by side, but rather truly together. And ideas are listened to and not put down, and there is not only one person in the team who decides things – the project leader. And the project does not only take place in project meetings, instead I often go to Petra, to her office, and we discuss some parts. I think we work together really well." (Interview: team member 5) "Team members show willingness and openness to look through and to discuss someone else's part and to give some advice. But everyone still has the image of uncommunicative scholars who withdraw to their rooms to write treatises. But this is not the case in our team. There is always the possibility to make contact; I do not have any kind of reservation about approaching team members." (Interview: team member 6) "The good thing is that everything is questioned at the meetings, but additionally, we find a way to achieve a result together. No-one is left out in the cold when they are criticized. And that, well I find it very positive that there are actually no exposure campaigns, but just argumentative exchanges that take place on an objective level." (Interview: team member 6)	Trans-fering New Know-ledge to Others	"I know from our lunch breaks that theses kinds of topics are preferably discussed [with members of the institute]. Yes, when 'foresight' scholars have found a good source of information then it is a very good topic for our lunch breaks. I do not really know if they discuss the methodology in finding and evaluating these topics, or whether this can be communicated…" (Interview: team leader) "One of my colleagues [of the institute] had asked me what we were doing? Then I explained our project to him. This guy was surprised at the importance of our project." (Interview: team member 6)
Reframing	"A kind of internal self-reassurance and self-reflection, this is part of our task!" (Interview: team member 1) "It was about my profile of undesirable social behavior. Team discussions did not change it by 180 degrees, but it actually led to a kind of direction which I had not seen before." (Interview: team member 7) "The profile was related to illness and the second one to aliment. …I absorbed the criticism and incorporated the feedback into my profiles." (Interview: team member 3) "Petra's profile , the one about the eating habits, we discussed this twice in detail when she more or less left each time with the comment that, OK, she would try again to sharpen it in order to convince us." (Interview: team leader)	Making a Change and Improve-ment	"Where we are concerned, this project is running very well and disciplined … although it seems that we discuss a lot… Under the present circumstances, the project is making good progress - and very fast when it is evaluated against more hard facts.... " (Interview: team member 1) "This project is a very satisfying experience, a project in which something really happens, where something is demanded. It is good for me to know that I am not working for the garbage can…. One of our workshops, for example, was really good because we worked constructively a whole day and really moved on as regards content." (Interview: team member 6) "I rewrote the profile relating to illness and food based on the feedback I had received from the group. … I integrated the criticism and changed it." (Interview: team member 3) "We discussed which profiles should merge. We said we could merge this profile with this one and that one; yeah, that was the problem - 'we could!' We could do it, it could be done, but no decision was made. The person did not receive any instruction. And I was a little bit disappointed and thought, 'These are the same profiles, unmodified, which are to be included in the final version' Nobody merged the profiles, but, they should have done!" (Interview: team member 3)

Table 16: Team Learning Behavior (Radar Team)

Summary: Team's Leadership

In this Radar team, which was characterized by highly reflective learning behaviors and minor weaknesses in the action part of learning, more than one individual member was engaged in team's leadership activities. Although an official project leader was designated for this team, he did not take a superior role in the team which was in accordance with the organizational culture that aimed at flat organizational hierarchies. In observed meetings, the official leader appeared as a regular team mate who took over a role as moderator and coordinator, rather than as a superior. Hence, no commandos and clear directions were given by any single member of the team; on the contrary, this Radar team based its project decisions on collective agreement. It was observed that team members mutually influenced each other in the achievement of the final team goal. Therefore, there was not only a leadership influence observed from the team leader to the team members, but also vice-versa and among each other. This taking over of leadership activities among team members was greatly supported by members' seniority and functional expertise, but also by members' experience in leading their own projects which were running in parallel to this observed Radar project.

In relation to performed leadership, at the team meetings my observations revealed an energetic exchange of leadership activities among team members which influenced team members as regards to task, relations and change. Only some weaknesses were identified in the performed task oriented substance, in particular in the leadership activity of clarifying members' roles and objectives. At the same time, these more or less committed leadership activities influenced the learning process of the Radar team. Exactly how these leadership activities influenced team learning, both as regards reflection and action, will be the subject of the following discussion.

The Role of Task-Oriented Leadership Activities in Team Learning:

Observations of team meetings revealed an energetic exchange of task-oriented leadership activities among team members over the course of the Radar project which, in turn, seemed to bear on the team's learning behaviors. Right at the very beginning of the Radar project, during the **planning process**, team members needed to make sense of the request which the public contracting body had put out for application. A small number of team members, the so-called core team, met with an external partner in order

to grasp the ministry's external set goals. Members were involved in reflective discussion in order to understand and to arrive at a common understanding of what the team needed and was expected to do. In one team member's own words: "*…This could also be regarded as our project start, as this was the point at which the intellectual work of our project started. A small core team from T&S and members of TechBrain met long before the actual project start [in October 2008] in order to discuss what a project design could look like… And then we had a larger brainstorming round, just to sound out how we imagined the project, what the objective could be … that had a major influence on our proposal.*" (Interview: team member 1)

During my project stay, I also observed that all team members were highly involved in planning more detailed milestones which had already been determined in the presented proposal to the ministry. For instance, an expert workshop to take place at the end of stage 1 had already been appointed in the proposal; however, how the workshop would take place and the procedure were the content of observed meetings. Based on the reference points of the presented proposal, team members elaborated further possible characteristics and steps for conducting the workshop. Members took up the idea of the expert workshop and carried out further brainstorming on how to proceed in detail. In one of the observed meetings, the team leader stimulated the others to think about the upcoming workshop together. In the observed team meeting, he announced: "*I would like to use this meeting to reflect on our appointments with TechBrain and what we want to discuss with them in relation to our planned expert workshop. Among other things, it is a matter of whether the format of the workshop should be two half days or what……..this means that I would actually like to use today's meeting to turn various considerations over in our minds – to get some points clearer and perhaps put together some arguments in advance.*" (Observation of team meeting: 23.06.2009) Hence, the need of the members to plan their task stimulated the team to discuss project steps in detail and concurrently to gain new project insights.

The team's planning process led to a decrease in the team's ambiguity; it induced the team to focus on specific topics during the project, in the sense of knowing how to filter the most important details. The insights gained by the team from the planning it had undertaken became explicit in the proposal presented to the ministry. For this document,

the team came up with a specific milestone plan of what was to be done and what it needed to deliver for each stage. When this proposal was accepted, this plan was communicated and distributed to the rest of its members at the beginning of the project. For the team leader, this planning process even supported the self-management effect of this team. In his own words: *"This kind of planning is very important. This planning has essentially contributed towards the self-management process running as such in our team. Everybody had the planning in mind. Otherwise we would have experienced a different kind of discussion. It would have been less goal-oriented."* (Interview: team leader) In a similar vein, another team mate also acknowledged the positive effect on her project undertaking: *"By actually always following such a red thread … well, there has to be a red thread that continuously runs through [the project] to which you can return or find orientation."* (Interview: team member 7) Due to this decrease in the team's ambiguity, in the sense of having clear and codified milestones in mind, the members knew exactly where the project stood during the process, which helped members to follow the plan and actually to complete their assignments.

The team's collectively agreed goals were reinforced by the team leader, who was regarded by members as the "*coordinator*" (Interview: team member 7) of this Radar team. He took over the role of **clarifying team members' roles and objectives**. He maintained that team members had all the same understanding of the team's task and prevented any significant misunderstandings from emerging. One of the team members described his role as follows: *"Leadership. Yes, well, we have a project leader who, in my estimation, keeps a low profile, especially as there are relatively experienced colleagues in the group who also have lots of ideas, suggestions and so on. So for him the most important thing is of course to channel, to make sure that the no diverging expectations arise so that everyone would be running in different directions."* (Interview: team member 2)

The official leader supported team members' acting on gained insights by focusing discussion in the team in the direction of the sighted goal. By summarizing main discussion points, team members knew where they stood as a group. One team member reported: *"At the end, he summarizes what we need to remember, yeah, he does that quite frequently; I think it's quite good that he simply keeps on track and such*

discussions are result-oriented, because sometimes one seems to lose sight of the result, and well, it's his task to make sure that things keep going." (Interview: team member 6) Additionally, the team leader appeared to keep at a certain distance from the project; he brought discussions to an end when team members could have kept on discussing. In one member's own words: *"Well, there has to be somebody who ties things up, as it were, and says, 'right, we've got so far and we're going to stop here'. And he's the one who has to do this. He has this function, or authority, and sometimes it is difficult to find a good finishing point. Sometimes he manages it well and at other times not so well. But otherwise the discussion would often continue for much longer. It is always essential to the timeframe as well. We make very, very good use of the time due to the passion for discussion that prevails within the team. Then he simply has to set a full stop. He doesn't do this by gagging the discussion, I didn't get this impression."* (Interview: team member 3)

Notwithstanding this, one team member reported situations during which she felt lost and therefore asked the project leader to repeat what she was supposed to do next. She described the situation as follows: *"For example, once we had a really stimulating ongoing, very long, very discursive meeting, and we discussed many, many things. At the end of the meeting, I could not grasp what was the initial position. Particularly, I was not sure because during this meeting we were constantly debating about doing something one way, or the other way, or like this. In the end, I did not know what we had agreed on. And then it helped me a lot that he summarized it again in brief. No, actually I asked Dieter Schmidt 'What is going on now? What do I need to do?' And then he summarized everything."* (Interview: team member 7) After this team member had asked the team leader to clarify the task, the team member knew what collectively gained insights to implement.

Although the team maintained its task focus in team discussions though summarizing the content, it was, however, observed that specifically assigned tasks were often left open at the end of the meeting. In observed meetings, there was nobody who clearly defined members' tasks for the next meeting. This lack of defining short term tasks negatively impacted the team's action part of learning, as some insights were lost over the course of the team's project. In one member's own words: *"… in this case, again,*

we did not record it, we did not follow it up as it was not recorded. And then the discussion fizzles out, but then again this point pops up. About the laymen workshop, we had this idea some meetings before. And now, we have this situation; it would be great but now it is too late. And exactly that is our problem. We always run into the same problem, now we don't have the time any more, maybe next stage. But now, one of us needs to take charge of it. Someone needs to be named to take charge of this task. … but in our case, there is a bit of a lack of something binding, we always leave without much sense of obligation." (Interview: team member 3) This situation consequently exemplified that this leadership task of clarifying team members' roles could be better enforced in the future by clearly defining and repeating each members' tasks at the end of team's meeting. This would further support most of the team's insights being implemented and followed up by individual team members. One of the team members described this future need for enforcing this implementation of gained insights, especially those resulting from highly intellectual discussion: *"In my opinion, the others are involved in these critical considerations as well and then they talk about them. That's what makes it all so fascinating. That's what a process benefits from. It's just this lack of commitment in the implementation, that's when this energy fizzles out somehow. One should hold on to what one has somehow, otherwise it will go away again."* (Interview: team member 3)

Based on the team leader clarifying roles and objectives activities by making the actual situation for the team clear, it was observed that team members built on the leader's undertaking and added new perspectives. At one meeting observed, for instance, the team leader summarized what this team and BrainTech had agreed on how to proceed in the expert workshop. In this situation, one of the members stood up and sketched the main points the team leader had just referred on the board. Based on this, this team member proposed a new structure of the meeting to the team, a new frame of the expert workshop. Hence, this member added a new perspective, gained new insights based on the team leader's clarifying activities (Researcher Diary). Hence, the team leader's clarifying roles and objectives activities encouraged the reflection part as well as the action part, albeit with some weaknesses.

The team **collectively monitored** the team's progress. In observed team meetings, team members reviewed together the various member's profiles as one of the team members acknowledged*: "We often did a kind of evaluation like today, in order to review the work we had done"* (Interview: team member 6). This review process stimulated the team members to perform their tasks and implement the received feedback. However, since each person's ideas and insights were not put on record, the team had no common ground to check whether specific insights really had been implemented or not. It appeared that this kind of assurance process of implementing received feedback lay in each member's scope of action.

The review of each other's project action rather enforced discussions on the profiles and formed the basis for gaining more collective insights and new ideas. For example, at the end of stage 1, two team members had the idea to review all the profiles by entering and remarking on feedback in one excel sheet. Based on this review of all distributed profiles, the team members identified profiles which could be combined into a single profile. One team member reported: *"One of the juniors came up with this excel sheet…and then we, mainly Markus and I, discussed which of these profiles could be brought together."* (Interview: team member 3) Therefore, new project insights emerged based on the team's collective review of the team's actions. Hence, the monitoring process did not only ensure that main ideas were implemented, but also served as the foundation for the further development of collective insights.

The Role of Relations-Oriented Leadership Activities in Team Learning:

Due to the fact that most of the team members knew each other at the beginning of the project, members' relationships did not need to be established rather more to be maintained. This role of maintaining member's relationships was done by a few members. These performed leadership activities led to an open climate and ensured that no conflicts emerged. One of the team members assessed the climate within the team as, *"At the best, super! Really good. There is a very good atmosphere in our team…. The easygoing way things are said, that supports a very relaxed atmosphere."* (Interview: team member 3)

This open and friendly team climate served as the basis for intensely collective debates on each other's profiles and general project approaches. It allowed team members to admit to having difficulties and ask others for help. Additionally, it warranted that argumentations, including the exchange of different opinions, did not lead to personal conflicts so that further team discussions between members were not endangered. One of the members referred to the role of the team's open climate in its potential for reflection by claiming:*"Our climate has a positive effect; is noticeable today in discussions that because several minds are working together, an idea can be developed further, as it were. Or that someone says, 'No, that's rubbish', and then one may get an understanding of the arguments as to why that is rubbish."* (Interview: team member 3) Hence, this open team climate established the basis for collective reflection.

The Role of Change-Oriented Leadership Activities in Team Learning:

The team was characterized by a high number of team members who were in a position to question each other's work. However, according to team members, two members were particularly highly engaged in **intellectual stimulation** activities. These two encouraged the other members, or each other, to rethink assumptions and to regard the stated argument from a different perspective. One of the team members acknowledged: *"… stimulating, sure, but it certainly achieves something … and sharpening one's arguments is emphasized again and again, and to do this one has to grasp the things to be done in this way."* (Interview: team member 6) Hence, intellectual stimulation activities forced team members to rethink given assumptions and to look at problems from different angles. In a similar vein, in the interview, one of the junior members explained Max's influence as follows: *"Yes, he simply spurs me on in the sense that he always questions everything in such depth. And then I noticed when, I was writing those topic profiles or something like that, I thought about what he would have said on the subject and where he would maybe find weaknesses or similar. And that is sort of, that is what motivates me to do it right somehow, right in inverted commas!"* (Interview: team member 7)

Therefore, intellectual stimulation activities led to a reframing of the team's approach and hence assured that no obvious paths were followed. One of the two members who took over this intellectually stimulating role described her impact as follows: *"Well, I*

feel that I sometimes play the role of a devil's advocate, like, critically questioning things and simply turning everything round to see whether we are on the right track, that we don't sort of fall asleep." (Interview: team member 3) Hence, the team's reflection was enhanced by this member's intellectual stimulation activities.

The change oriented leadership role was further operationalized through collective **boundary spanning**, in terms of scouting information on the team's task and collaborating with others outside the team. The team's collective boundary spanning activities obviously increased the amount and variety of information which was available to this Radar team. However, it was important for the team that its members spread out externally gained information so that all team members could benefit from these external insights. In observed team meetings, the meeting often started with an update on what had happened outside the team's boundaries, updates on conferences attended by only a few team members, or on meetings with collaborators, for instance, with the partner TechBrain, but also on other matters. One team member reported: *"At the beginning of the meeting, the members usually update each other on what has been done and where. For example, some of them often have meetings with TechBrain. And then they update us on what they have talked about, how the meeting proceeded. We get to know what they discussed at these meetings. Also this is the case with delta consulting. This was initiated by Markus, because that was his contact. And then those who went to delta, they also told us about what this consulting agency offers. This is always very open."* (Interview: team member 7)

In a similar vein, another team member also pointed to the fact that records were written that enhanced the transfer of external information to the team. He claimed*: "We have two ways of transferring external information within the team….we have records…and then we talk in our meetings about what happened at this meeting with the partner. And this often goes beyond what is written in the record."* (Interview: team member 1) Additionally, for this team mate, the process of sharing information was of highest importance as the rest of the team needed to understand why certain project decisions had been made with the external partner. In his own words: *"At any rate, we hope it will help to get a better grasp of the backgrounds of certain decisions. It is not always so clear why certain things are decided in a certain way, … perhaps decisions were made*

with a difficult project partner that wouldn't have been decided in such a way if we had had complete creative freedom. And how such compromises materialize, I think this should be explained to our colleagues. As a rule, that's what happens at such meetings. And then of course, lots of things crop up at this kind of project meeting with the project partner that, let's say, support the development of certain decisions, understanding how certain decisions emerge. And that's something that should be … the colleagues should be allowed to participate in this." (Interview: team member 1) Accordingly, it was of utmost importance to share the results of the team's boundary spanning activities among each other so that team members had a common understanding of why certain ways were followed. Generally speaking, the quality of team reflection was increased through external insights once these were accessible to all mates of the Radar team.

As the project was at its beginning rather than at its end, the members' boundary spanning activities stimulated the team's insights more than the action part, particularly the transfer of ideas to externals, as only preliminary results could be transferred to externals. However, in the interviews and at the observed team meetings, it seemed that some knowledge was transferred, in particular to TechBrain. However, no direct relationship could be observed because of the early phase of the project.

Overall, these findings suggest that the shared leadership including task, relations and change substance - performed by team members and the official team leader - encouraged this team to engage in nearly complete learning cycles, however, with some weaknesses in the action part of learning. Collective planning, maintaining relationships, intellectual stimulation and boundary spanning activities served mainly as the basis for collective reflection. Clarifying roles and objectives as well as monitoring primarily forced the action part of learning in that the team's gained insights were implemented. However, some weaknesses in the implementation of the team's gained knowledge were observed as, from time to time, some insights were not followed up by team members as no duties were defined for doing this. Therefore, for the future, it became apparent that this team should rather engage in more clarifying roles and objectives in the sense that one of the team should clearly define and record more short-term task responsibilities resulting from the team's gained insights during team discussion.

The following table displays the relationships of shared leadership activities on team learning.

Leadership Substance	**Reflection** Developing Collective Insights		**Action** Implementing Gained Insights	
Task-oriented	Descriptive Effect	Illustratve Data	Descriptive Effect	Illustrative Data
Collective Planning	Team's need to plan stimulate members to discuss and reflect on project goals	"…This could also be regarded as our project start, as this was the point at which the intellectual work of our project started. A small core team from T&S and members of TechBrain met long before the actual project start [in October 2008] in order to discuss what a project design could look like… And then we had a larger brainstorming round, just to sound out how we imagined the project, what the objective could be … that had a major influence on our proposal." (Interview: team member 1) "I would like to use this meeting to reflect on our appointments with TechBrain and what we want to discuss with them in relation to our planned expert workshop. Among other things, it is a matter of whether the format of the workshop should be two half days or what…..…this means that I would actually like to use today's meeting to turn various considerations over in our minds – to get some points clearer and perhaps put together some arguments in advance." (Observation of team Meeting)	Decrease of ambiguity; codification of collective insights through preparation of working plan	"By actually always following such a red thread [milestone plan] … well, there has to be a red thread that continuously runs through [the project] to which you can return or find orientation." (Interview: team member 7) by working on the project
Clarifying, Reminding and Coordinating Team's Objectives	Based on members summaries, other members add new perspectives and new ideas rise	Team leader summarized what this team and BrainTech had agreed on how to proceed in the expert workshop. In this situation, one of the members stood up and sketched the main points the team leader had just referred on the board. Based on this, this team member proposed a new structure of the meeting to the team, a new frame of the expert workshop (Observation of team meeting)	Maintaining task understanding in discussions, yet lack of short term role tasks negatively impacted team's action part of learning, as some insights were lost	"Leadership. Yes, well, we have a project leader who, in my estimation, keeps a low profile, especially as there are relatively experienced colleagues in the group who also have lots of ideas, suggestions and so on. So for him the most important thing is of course to channel, to make sure that the no diverging expectations arise so that everyone would be running in different directions." (Interview: team member 2) "At the end, he summarizes what we need to remember, yeah, he does that quite frequently; I think it's quite good that he simply keeps on track and such discussions are result-oriented, because sometimes one seems to lose sight of the result, and well, it's his task to make sure that things keep going." (Interview: team member 6) "… in this case, again, we did not record it, we did not follow it up as it was not recorded. And then the discussion fizzles out, but then again this point pops up. About the laymen workshop, we had this idea some meetings before. And now, we have this situation; it would be great but now it is too late. And exactly that is our problem. We always run into the same problem, now we don't have the time any more, maybe next stage. But now, one of us needs to take charge of it. Someone needs to be named to take charge of this task. … but in our case, there is a bit of a lack of something binding, we always leave without much sense of obligation." (Interview: team member 3) "In my opinion, the others are involved in these critical considerations as well and then they talk about them. That's what makes it all so fascinating. That's what a process benefits from. It's just this lack of commitment in the implementation, that's when this energy fizzles out somehow. One should hold on to what one has somehow, otherwise it will go phut again." (Interview: team member 3)
Collective Monitoring	Task related problems are detected and new ideas emerged	"One of the juniors came up with this Excel sheet…and then we, mainly Markus and I, discussed which of these profiles could be brought together." (Interview: team member 3)	Enforcement of the action part of learning if gained insights have been implemented, yet lay in each member's scope of action	"We often did a kind of evaluation like today, in order to review the work we had done" (Interview: team member 6)

Relations-oriented				
Building and Maintaining Members' Relation-ships	Open, trustful environment allows team members for open reflective discussions	"At the best, super! Really good. There is a very good atmosphere in our team…. The easygoing way things are said, that supports a very relaxed atmosphere." (Interview: team member 3) "Our climate has a positive effect; is noticeable today in discussions that because several minds are working together, an idea can be developed further, as it were. Or that someone says, 'No, that's rubbish', and then one may get an understanding of the arguments as to why that is rubbish." (Interview: team member 3)		
Change-oriented				
Encourage Members to view points in a different way	Other team members consider new perspectives, reframe team's approach	"Yes, he simply spurs me on in the sense that he always questions everything in such depth. And then I noticed when, I was writing those topic profiles or something like that, I thought about what he would have said on the subject and where he would maybe find weaknesses or similar. And that is sort of, that is what motivates me to do it right somehow, right in inverted commas!" (Interview: team member 7) "Well, I feel that I sometimes play the role of a devil's advocate, like, critically questioning things and simply turning everything round to see whether we are on the right track, that we don't sort of fall asleep." (Interview: team member 3)		
Collective Boundary Spanning	Increase of teams insights when external gained insights are shared among members	"We have two ways of transferring external information within the team….we have records…and then we talk in our meetings about what happened at this meeting with the partner. And this often goes beyond what is written in the record." (Interview: team member 1) "At any rate, we hope it will help to get a better grasp of the backgrounds of certain decisions. It is not always so clear why certain things are decided in a certain way, … perhaps decisions were made with a difficult project partner that wouldn't have been decided in such a way if we had had complete creative freedom. And how such compromises materialize, I think this should be explained to our colleagues. As a rule, that's what happens at such meetings. And then of course, lots of things crop up at this kind of project meeting with the project partner that, let's say, support the development of certain decisions, understanding how certain decisions emerge. And that's something that should be …the colleagues should be allowed to participate in this." (Interview: team member 1)		

Table 17: Relationships between Leadership and Team Learning (Radar Team)

7   Cross-Case Analysis

In the preceding chapters, I presented my collected data on leadership and learning within three different teams, two teams involved in the CEMS business project (BPIS and MarkOP) and one project team from the T&S institute (Radar). The results of all three teams have been presented so far as individual case studies. The next step, according to Yin (2003), is to review the findings of the cases in a comparative manner. I will comparatively discuss the results in view of the questions which drive this PhD research project, namely the role of shared leadership in team learning.

In doing so, I will comparatively discuss four main parts. The first and second part of this cross-case report focuses on the nature of shared leadership: Firstly, in accordance with the single case analysis, I will comparatively discuss the composition of shared leadership, particularly the kinds of leadership activities each team was engaged in or neglected to perform. This follows Yukl's (2010) understanding of leadership which claims that effective leadership consists of three leadership substances, namely task, relations and change. Secondly, by focusing on the time dimension of shared leadership, teams' leadership developments are compared across the three observed teams. In this part, I distinguish between the teams which shared the leadership among members and the team which rotated its leader position among members over the team's life cycle, though concentrating on a single leader at any one point in time.

Thirdly, I cross-examine the occurrence of learning in the team and the team's learning process based on Edmondson's (2002) concept of team learning, by comparatively looking at how the teams engaged in (1) reflective behaviors, i.e. activities that promote new insights, and in (2) action, to implement gained insights. In the final, fourth section, I compare the relationships between leadership activities and learning in the three studied teams.

7.1   Performed Leadership Activities

This section compares observations of the performed leadership activities across the three cases by distinguishing leadership as activities relating to task, relations and change which built up effective leadership when engaging in all three substances (Yukl, 2010). For each of these substances of leadership, Yukl (2010) suggests operational leadership activities which I have adopted for analyzing the data for each individual case. The task-oriented leadership substance includes planning, clarifying roles and objectives, and monitoring; the relations-oriented role is operationalized by building and maintaining relationships between the team members. The change-oriented leadership substance comprises intellectual stimulation and boundary spanning activities.

In the following, I will compare the teams' engagement in each of the three substances of leadership and whether these engaged leadership activities were individually performed or shared among members. The table following the section on task, relations and change substance of leadership illustrates in a comparative manner how each of the three teams engaged in the corresponding leadership activities.

7.1.1 Task Substance of Leadership

7.1.1.1   BPIS and Radar Teams: Shared Task Substance

In the BPIS and Radar teams, the members collectively based their **planning** on goals that had already been externally broadly defined. The BPIS team collectively made sense of the client's set vision which, in turn, allowed for planning the team's steps. The collective planning undertaken by the team allowed team members to know what, how and when different subtasks had to be done in order to achieve the team's overall consulting goal. Similarly, in the Radar team, members also made sense of the external goal which had been set by the public client. In order to apply for this consultancy job, some of the team members needed to compose a proposal including a project plan with broadly set milestones. After the proposal had been accepted by the client, this proposal was distributed to those members who had not been involved in conducting this presented proposal, at the official project start. Throughout the observed team process, all members were involved in specifying further upcoming milestones which had only been touched on in the presented proposal. In both teams, the members were involved in

the planning process, in the longer term, by grasping the externally set goal and defining the team's plan and also in the short term planning process by specifying clear procedures for the team.

The BPIS team's agreed goals were further enforced by one team member, the team representative, who took over the role of **clarifying the team's goals**. As the coordinator, this team member maintained an overview of the whole project by specifying the team's meeting agenda, focusing discussions on the team project, summarizing the contents of meetings in minutes, and additionally clearly indicating each member's task responsibilities after the meeting. Similarly, one member of the Radar team was in charge of coordinating the team's project. Here too, the officially designated team leader took over this role of keeping a broad overview of the team's goal. During my stay at the T&S institute, he specified the agenda of each meeting, summarized meeting content after a certain period of time, and also refocused the discussion when the team appeared to be losing sight of its project. Contrary to the BPIS team, though, no clear task responsibilities were defined for each member. It was taken for granted that team members would deduce their individual tasks from the team's discussion. Hence, it was often left open which of the team members would deal with a task by the next meeting.

Regarding the leadership activity of **monitoring** the team's progress and performance, both the BPIS team and the Rader team collectively gathered information about their team's projects. At the beginning of meetings, team members updated each other on their respective subtasks. Members of the BPIS team regarded this collective review on each member's task as motivating since they were aware that all members had been working on their individual project tasks. In the Radar team, team members also used meetings as an opportunity to go through members' profiles and to identify strengths and weaknesses of each one's subtasks. Similar to the BPIS team, shortly before approaching the end of stage 1, members collectively reviewed all the presented profiles and looked for subtask interfaces in order to hand in a consistent team project. Hence, both teams had an eye on their team's progress and output and collectively monitored their performance.

7.1.1.2 MarkOP Team: Struggling to Define Project Task

In contrast to the previous teams, in the MarkOP team, the members experienced difficulties with the team's **planning**. This team only engaged in few discussions on what the team was aiming to do to grasp the vision of the company. This lack of attention to the externally set goal led, in turn, to an incorrect emphasis in team's consulting project approach. Team members regarded the planning activity, including goal setting, as the task of the team leader, hence, not as a collective team activity. This is not surprising when one takes into consideration actually observed incidents when members asked the leader to give and specify one member's tasks as they did not know what to do. However, the team leader did not feel comfortable and knowledgeable enough to define the team's plan. These inadequate planning activities resulted in vague, very broadly set directions which members found difficult to take as a guideline.

Team's inadequate planning process also negatively impacted on their capacity to **clarify roles and objectives** as no clear direction was defined. More specifically, as this team did not manage to define a clear approach how to solve client's problem, there was no basis for the team to build on in order to reinforce existing goals, as these were vaguely defined, or rather did not exist. Although in both phases the leader sporadically tried to coordinate this project in a sense by defining some tasks to the team, the members did not understand each other's responsibilities, which again led to misunderstandings and overlaps in the team's task. This situation resulted in members' dissatisfaction and insecurity what to do as well as members' redundancies in performed tasks.

The rather individual focus on working on team's project led to a low commitment to **monitor** team's performance and particularly to review in more detail each other's results. As the team approached the end of the project, they did not go through all the members' approaches, only the team leader checked whether anything had been handed in by members. Additionally, it appeared that the final review by the team superior was mainly as regards format rather than content.

7.1.1.3 Comparative Conclusive Remarks on Teams' Task Leadership

In sum, the case of MarkOP exemplifies this amplification of leadership activities in a negative way. The fact that the team did not sufficiently grasp externally set visions resulted in vaguely defined, even rather non-existent goals for the team which in turn could not be clarified, reinforced or even monitored by the team leader or members. On the contrary, BPIS and Radar showed similar approaches in sharing task leadership in each team. Both teams were highly involved in planning their team's goals and monitoring their progress and performance. Similarly in both teams, the designated project leader (Radar) and team representative (BPIS) also took over a coordinator function in reinforcing already agreed plans. However, the differences emerging from the data were that the representative in BPIS team additionally specified the members' short-term task responsibilities which needed to be done by the next meeting, which was left open in Radar. The following table illustrates patterns of task leadership activities performed by BPIS, MarkOP and Radar.

Task Substance	BPIS Team		MarkOP Team		Radar Team	
	Single vs. collective	Description	Single vs. collective	Description	Single vs. collective	Description
Planning		- Planned together based on company- set long-term goal - Definition of milestone plan		- Little attention to externally set goal - Very vaguely defined directions		- Planned together proposal to be presented based on externally set goal - Definition of milestone plan - Planned together upcoming events
Clarifying Roles and Objectives		- Coordinator in the team kept overview of the project - Specifying team's meeting agenda, focusing discussions - Indicating each member's task responsibilities		- Low planning effected CRO - No basis for reinforcing team's goals as these were only vaguely defined		- Coordinator in the team kept overview of the project - Specifying team's meeting agenda, focusing discussions - No definition of clear task responsibility for members
Monitoring		- Collective review of team's progress and output in meetings		- Basic final review of team output whenever members handed task in - Review on the format rather than on content		- Collective review of team's progress and output in meetings

Table 18: Patterns of Task Leadership Activities Performed by Teams

7.1.2 Relations Substance of Leadership

7.1.2.1 BPIS Team: From Unknown Members to Good Friends

As members did not know each other at the beginning of the business project, it was important for members of the BPIS team to get to know each other. Particularly, one team member took over the role of **building members' relationships** by encouraging non-project-related discussions at the beginning of the meeting or by promoting collective attendance at social events. This undertaking resulted in a friendly, cohesive team climate in which every member enjoyed being part of the team project and was

motivated to spend time and effort on this project. The team's relationships were further enforced and **maintained** through supportive and considerate behavior of this specific team member while looking after the team members' interests. After some project time had elapsed, other team members adopted this highly supportive behavior towards each other. Over team's life span, more and more instances were observed when members offered each other to take over other members' work to unburden individual members.

Relationships were further maintained by proactively solving tensions between members before conflicts could emerge. There were cases observed where single team members experienced problematic project situations. However, these were discussed in the team shortly after they emerged and were solved before those involved could feel marginalized from the team.

7.1.2.2 Radar Team: From Knowing Each Other to a Strong Team Feeling

In contrast to BPIS team, at the beginning of the project, team members in Radar mainly knew each other from other projects of the T&S institute. Although members' relationships did not need to be built through intensively getting to know each other, as seen in BPIS team, here it was more important for this team to **maintain these relationships**. This was mainly done by a few of the team members who showed considerate und supportive behavior to other team members by, for instance, taking over voluntary group tasks or by standing by for someone else. In the latter case, for instance, when recalling an actual occasion, one of the senior members spoke up for a junior colleague who unfortunately did not receive notice that a meeting had been rescheduled, hence came an hour too late to the meeting. This senior team mate explained this particular situation to her and went out of the meeting room in order to print out the required documents which she needed during the team's meeting. Also the team leader openly made an excuse for this lack of sharing the rescheduling with her. This junior team member appreciated this supportive and considerate behavior of both mates and acknowledged in the interview to really having felt as an accepted member and part of the team, although she was one of the less experienced ones.

Tensions between members in harsh project related discussions were also alleviated by clearly indicating friendly and open words so that these particular situations were sorted out between members. With these considerate and soothing comments, one team member often took charge to ensure that heated, highly intellectual discussions with often contradictory opinions did not lead to personal tensions which could have caused members' marginalization of the group.

All in all, similar to the BPIS team, these considerate activities aimed at maintaining members' relationships led to a friendly, cohesive and enjoyable team climate. In this team, members felt motivated to take the effort and time to work on this project, even on a voluntary basis besides the regular project work at the T&S institute.

7.1.2.3 MarkOP Team: From Unknown to Being at Odds with Each Other

Similar to the BPIS team, the members of MarkOP did not know each other at the beginning of the project. Contrary to the BPIS team, only very few leadership activities were directed at **building and maintaining relations between members**. At project start, the members took a good relationship for granted and focused on their team's task. Yet, as project difficulties arose, members' common demeanor broke into rather individual-oriented actions. In the interviews, members indicated a lack of group feeling for engaging in a common project which, in turn, seemed to result from the team's low level of engagement in building and maintaining relations between the members.

After some time in the team's life span had passed, team members themselves felt this lack of supporting each other and showing interest in each others' subtasks. This lack of support and the feeling of leaving members hanging on led, in turn, to a rise in tensions among members. Although one member clearly indicated her dissatisfaction with this team, the rest of the team did not take this occasion to discuss and solve the tensions, as done in BPIS. These unresolved tensions among team members, including the feeling of being left alone, led to the rise in personal conflicts among members. Unresolved conflicts caused members to be at odds with each other and some were not even talking to each other at the end of the project.

7.1.2.4 Comparative Conclusive Remarks on Teams' Relations Leadership

To summarize, three different kinds of the relation-forming side of leadership were observed in the three studied teams. At the beginning of the project, the BPIS team took the time to build up its relationships between members by getting to know each other. In contrast, in MarkOP relationships were taken for granted; members did not focus on becoming acquainted with each other which, however, led to rather individual orientations in the members' undertaking. Members worked on individual tasks and instead showed little supportive behavior to each other throughout the team's life span. This was contrary to the BPIS team in which a team feeling emerged. From the beginning to the end of the project, team members increasingly showed highly supportive and considerate behaviors. Members spoke up for each other and collectively took care that tensions were solved. This again was contrary to MarkOP where emerging tensions were left unaddressed which, however, evolved into personal conflicts. Contrary to BPIS and MarkOP, members of Radar knew each other from previous projects. Relations did not have to be built, though, similar to BPIS, they did need to be maintained. Members showed highly considerate and supportive behaviors, which again also led to a strong team feeling. In the following table 19, relations-oriented leadership activities of the three cases are opposed.

Relations Substance	BPIS Team		MarkOP Team		Radar Team	
	Single vs. Collective	Description	Single vs. Collective	Description	Single vs. Collective	Description
Building and Maintaining Members' Relationships		- One member mainly built relationships through encouraging common social events in order to get to know each other - Maintaining relationships though showing supportive and considerate behavior towards each other - Over time more and more team members were involved in showing supportive behavior towards each other		- Members took a good relationship for granted - No activities were performed to build members' relationships - Lack of showing supportive and considerate behavior towards each other		- As members knew each other, no activities were needed to get to know each other - Maintaining relationships through showing considerate and supportive behavior towards each other - Sticking up for other mates
Managing Tension		- Relationships were further maintained through collectively solving rising tensions		- Tensions among members were not solved - Tensions developed into personal conflicts		- Heated, highly intellectual discussions were alleviated by clearly indicating friendly and open words

Table 19: Patterns of Relations Leadership Activities

7.1.3 Change Substance of Leadership

7.1.3.1 BPIS and Radar: Eager for Something Different

In BPIS and Radar, the teams' **intellectual stimulation** activities were directed towards questioning underlying assumptions of team's task. In BPIS, one of the team members emerged as the challenger who questioned proposals presented by team members and encouraged the others to rethink their assumptions. At the beginning, one of the team members felt personally attacked by these challenging questions. This member needed to learn that these intellectually stimulating activities were not targeted at questioning her person and capabilities, but rather at enhancing the quality of the team's project. After some time, another member of BPIS adapted to this intellectual stimulation behavior and additionally started to challenge members' stated proposals and encouraged them to consider new points of view.

Contrary to BPIS, in Radar, most of the team members considered themselves in the position of questioning each other. However, here too, in observed team meetings, two team members in particular emerged as the ones who pushed each other and the rest to rethink and to question held assumptions. Both were described as someone with "an evil eye" (Interview: team member 6) or as "devil's advocate – hence, critically questioning and turning it inside out…" (Interview: team member 3). Similar to BPIS, one of the junior colleagues acknowledged being personally offended by these intellectual stimulation behaviors upon joining this team: Additionally, she needed to learn that this questioning behavior was not directed at questioning her person, but were only aimed at improving the team's task.

In terms of team's **boundary spanning**, BPIS and Radar were both collectively engaged in scouting external information for the team as well as coordinating and collaborating with externals. By the nature of the team's consulting task, BPIS needed to scan its task environment intensively to figure out trends and technologies in order to elaborate and recommend new ways of achieving the client's internationalization proposals. Members were in charge of scouting for external information through pure online research to broadly understand the client's environment as well as by interviewing externals to gain very precise information for the team's task when approaching the implementation phase of the consulting project. The coordination with others outside the team's boundaries was also done together: Although a team representative was assigned by this consultancy, who was initially supposed to attend these coordination meetings alone, the other members of BPIS also joined in these representative meetings as everybody in the team had ideas he or she was eager to present to the consultancy.

Similar to BPIS, in the Radar team all the members were engaged in scouting external information via online research or via members' networks. Additionally, two of the team members approached an external consultancy which had expertise in knowledge fields needed by the team. During the observed period, these two members built up collaboration with this consultancy on how and in which specific fields the team could buy this external information. Similar to BPIS, in respect of coordination with externals, the assigned project leader was in charge of coordinating with external parties,

including the partner and the team's public client. Here too, however, the team leader included the rest of the team in this coordination process. In these meetings, three to four members, including the project leader, attended these arrangement meetings. For the team, it was important to attend these meetings with as many people as possible because team members were eager to understand the reconcilement of - often contradictory - interests between the collaborator, the client and Radar. The team leader supported and encouraged the idea of attending these external coordination meetings with all members of his team. Yet, the project partner did not appreciate meetings with many members from Radar team as the partner only attended meetings with two members. That is why not all members of Radar went to these collaboration meetings - but including the maximal number of members possible in the leader's opinion - in order to respect the partner's wishes.

7.1.3.2   MarkOP Team: Sticking to the Initial Position

In MarkOP, two team members sporadically engaged in **intellectual stimulation** activities in team situations where these mates felt the need and received the external feedback to fundamentally change the team's habits. Therefore, contrary to BPIS and Radar, members' intellectual stimulation was directed at questioning the team's process function. The two members encouraged their mates to be more critical and even enforced the negative feedback which the team had received from externals. This intellectual stimulation behavior by these two members was related to the general process functioning of the team, though no clear critical advice was given among each other about the individual subtasks, as seen in BPIS and Radar. It was rarely observed that members questioned task- related assumptions during their project.

Team members of MarkOP engaged in low frequency of **boundary spanning** activities, both in scouting and collaborating with externals, compared to BPIS and Radar. During the team's life span, it omitted to intensively and systematically scan its external environment. When asking externals such as clients for information, team members did not dig deeper even if they did not immediately receive information. This reactivity was also shown in the team's coordination activities with externals of team's consultancy. In contrast to BPIS and Radar, in this team the representative attended the coordination

meetings of team's embedded consultancy alone and played an under-represented role at these meetings. As a result, members admitted an inferior standing of their team in its embedded organization which resulted from this low frequency of collaboration with other teams of its consultancy.

7.1.3.3 Comparative Conclusive Remarks on Teams' Change Leadership

To sum up, BPIS and Radar showed high similarities in their change oriented leadership activities. In both teams, members emerged who took over the intellectual stimulator role directed at questioning the team's tasks and its assumptions. Also similarly, there were members who needed to learn how to absorb criticism when given. In terms of their boundary spanning activities, in both teams, all the members were in charge of scouting for external information. The coordination with externals was also carried out with many members, although in both teams this coordination task had initially been the responsibility of the team leader (Radar), or group representative (BPIS). However, in both teams the team leader and team members assessed collectively attending meetings with external collaboration partners as important. In contrast, in MarkOP, only few intellectual stimulation activities were observed. In most cases, these were directed towards changing the team's functioning, yet not at questioning the team's task and its assumptions. Additionally, MarkOP engaged differently in its boundary spanning activities, only scouting perfunctorily for external information. The coordination with externals was rather reactive. In contrast to BPIS and Radar, in this case only the team representative attended these meetings with a rather restricted position in team's embedded organization.

The following table 20 juxtaposes the team's leadership activities towards the change orientation.

Change Substance	BPIS Team		MarkOP Team		Radar Team	
	Single vs. Collective	Description	Single vs. Collective	Description	Single vs. Collective	Description
Encouraging Members to View Points in a Different Way		- One member emerged as the challenger - Team learned that intellectual stimulation was not targeted at questioning one's person capabilities but at team's task - Second member adopted this role later		- Intellectual stimulation was directed at questioning team's process functioning - No critical advice was given about the individual subtasks		- Two members were mainly engaged in questioning team's task - Young mates needed to learn how to take critical and questioning feedback
Boundary Spanning		- All members engaged in scouting external information - Coordination with others outside team's boundaries together - Collective attendance at meetings with externals in time		- Team omitted to intensively scan its external environment - Team representative attended coordination meetings of embedded organization alone		- All members engaged in scouting external information - Coordination with externals, including the partner and the client was done collectively, not only by the leader

Table 20: Patterns of Change Leadership Activities

7.2   Time Dimension: Patterns of Team Leadership

7.2.1 Radar and BPIS Team: Distribution of Leadership among the Team

A distribution of leadership among the members was observed in both of these teams. In Radar, the team from the T&S institute, an official project leader was designated. Although each of the T&S institute's projects was characterized by this position, team leaders did not usually take over a superior chief position, but rather a moderator function with responsibility for ensuring a reliable contact to the client and additionally assuring administrative financial tasks. Team members regarded themselves as coequal in the Radar team with no hierarchies between each other. This was especially true for experienced team members who took over official project leadership functions in other projects of the T&S institute. In one project team, members worked as regular mates and simultaneously in other projects of T&S as project leaders. This kind of rotation of official project leader functions at the T&S institute, explained as "one day, a colleague is a superior, but the next day I am the project leader for this person," (Interview: team

member prevented the emergence of power games among members in a single project. In this observed team, directions given to this team were mainly based on common agreement, particularly through convincing members in project discussions rather than by rank of the official team leader.

Hierarchical differences did not emerge among members in the BPIS team either, though one team member was asked by team's embedded organization to take over the team representative function. The initial idea of this assigned role was that this team representative would meet the other representatives of its consultancy to assure the information flow and common strategy between all teams. In BPIS, however, most of the members attended these group representative meetings. Members of this team found it important to collectively understand and shape the strategy of its embedded organization and hence collectively performed this task of representing the team outwards. Similar to Radar, the officially designated team representative took over the function of coordinating the project, including arranging meetings or reminding members of collectively agreed tasks. Hence, project decisions in this team were also based on common agreement rather than on individually set directions by a superior member.

Over the course of both the Radar and BPIS teams, it crystallized that the teams' leadership developed into an influence[14] process across multiple members, including the official team leader as well as team members: In Radar, the official team leader did not only influence team members, rather he allowed the rest of the team to influence him as he stated: "I also allow them to have an influence on me, which can only be positive…". (Interview: team leader) Similarly, the other team members, particularly those members who were experienced in leading projects, also influenced each other in the direction of the sighted team goal and of the maintenance of team's climate. These mutual leadership influence processes were also observed in BPIS where most of the team members were engaged in performing leadership activities. Taking the time factor into consideration, this team was characterized by a continuous increase in team members engaging in team's leadership over the life span of this team. It appeared like a naturally

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[14] Yukl regards leadership from an influence process understanding, including activities of task, relations and change orientation (Yukl, 2010).

emerging transfer of leadership responsibility among members or rather a positive infection of taking over and adopting leadership activities among members of the BPIS team. From the beginning to the end of this project, members naturally emerged as co-leaders in areas in which members were most knowledgeable. As the team approached the mid of the project, most of the team members performed leadership activities that influenced the team and the other members in areas related to task, relations and change. The team's leadership developed from a central placement of the team representative to a circular placement where nearly all members engaged as co-leaders. The following figure exemplifies this evolution of leadership from a central placement to a more circular formation in the BPIS team.
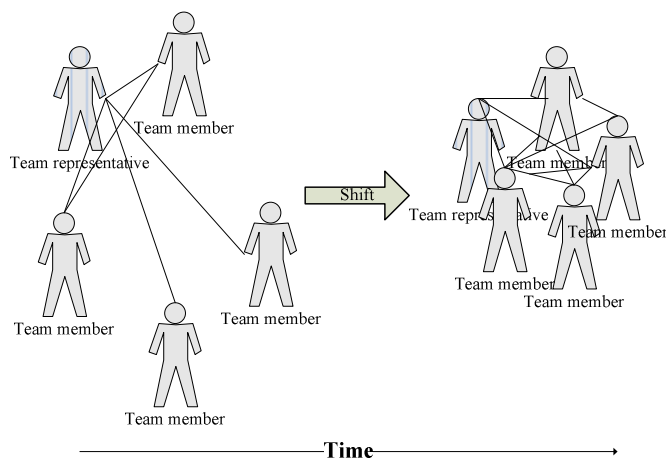
Figure 18: Distribution of Leadership among Team Members in BPIS Team

In both teams, the distribution of leadership activities appeared like a circular placement of co-leaders with many connections, not only to the direct partners within the circle, but also among each other, no matter whether one of the team colleagues was the official project leader or the team representative.[15]

7.2.2 MarkOP Team: Focus on Single Leader by Rotation of this Position

In conformity with the BPIS team, in MarkOP a team member was also designated to perform the representative function at the beginning of the consulting project. However, in this team, the representative function developed into a superior role, a leader who

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[15] As team members of the Radar project were acquainted to each other already at the start of the project due to previous joint projects, and additionally as I was not present at the beginning of the project, an emergence and development of shared leadership could not be directly observed.

took charge of the whole project. The team representative received more responsibility than the official function had initially involved. The representative appeared as the superior in the team and clearly gave directions as to what was to be done. Only one additional team member emerged as a co-leader in team situations in which the representative felt overstrained. In the middle of the project, when the team representative felt overtaxed and frustrated by this team, another member took over the official team representative function (time 2). However, as this team member did not perform leadership tasks adequately and only stuck to his individually assigned task, another team member, the co-leader of phase 1, took over the team representative function from the middle until the end of the project (time 3). This shift of team leader role might be regarded as a timely rotation of the leadership responsibility among members. This change of the leader position appeared to be due to members' and leaders' dissatisfaction with the team's functioning and performance. They felt the need to change the team's behavior by changing this leader position. The following figure exemplifies this triple rotation of the leader position among team members in the MarkOP team.
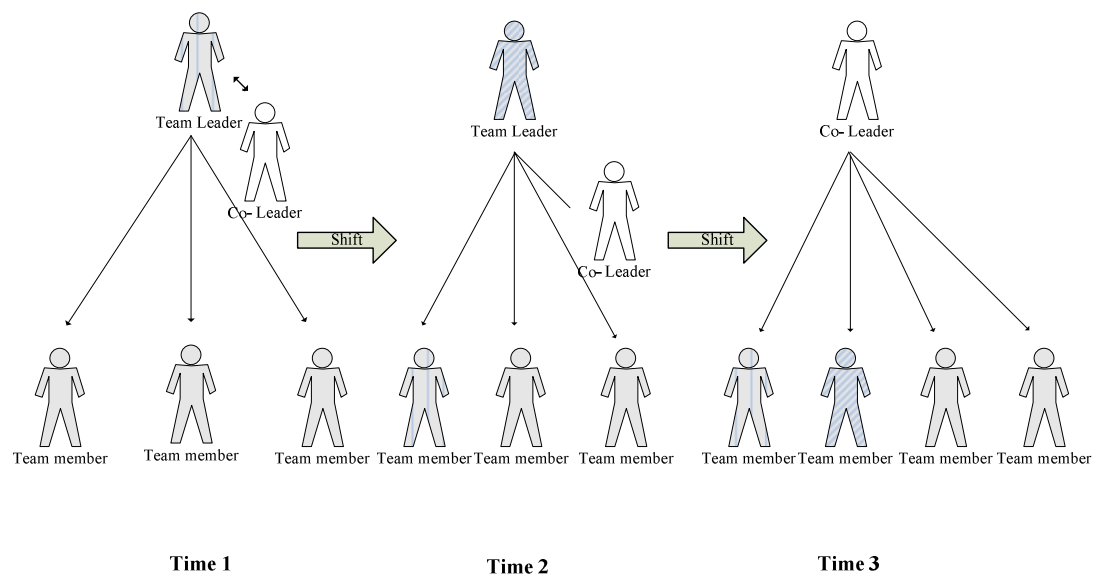
Figure 19: Timely Rotation of Leadership Position in MarkOP Team

Over time, the rest of the team relied more and more on this superior member and acted reactively, by clearly asking the leader what they were to do, or what they were to focus on in the project. Although I observed a mutual influence process among team leader 1 and the co-leader in the first part of the project (time 1), this leadership influence

between the team leader and the co-leader decreased to a lower level while the rest of the team showed reactive behavior by showing minimal activities relating to task, relations and change. Over time, the reactive behaviors of most team members and this superior role of the representative intensified these hierarchical differences between the leader and the rest of members just as much as in the final stage of the project (time 3), when a single third leader brought the project to a kind of end. Generally speaking, over the life span of this team, the members of MarkOP increasingly looked up to one chief at a time.

7.3   Patterns of Team Learning

To explore the teams' learning capacity, learning behaviors were distinguished into two main learning behavior categories of reflection and action (Edmondson, 2002) in the analysis of the three individual cases. Each of the two learning categories was constituted by specific learning behaviors: In accordance with recent team learning process conceptualizations (Edmondson, 2002; Gibson & Vermeulen, 2003, Kasl et al., 1997), the former category included learning behaviors such as seeking help and feedback, giving help and feedback, and reframing. The latter category entailed behaviors that take action based on new insights, therefore decreasing the team's ambiguity (Gibson & Vermeulen, 2003). In particular, this sub-category of learning comprised behaviors such as codification, transferring new information to others, and making change and improvement.

This twofold classification of team learning allowed for the identification of three patterns in the BPIS, MarkOP and Radar teams: BPIS appeared to iterate between learning activities of reflection and action. The Radar team also engaged in a nearly complete learning cycle including high reflection, though with some minor difficulties in action. The MarkOP team showed little evidence of either learning category, however. The subsequent table 21 juxtaposes the activities of reflection and action for each team.

7.3.1 BPIS Team: Iterative Cycle of Reflection and Action

In terms of team's **reflection** part of learning, at the BPIS meetings, I observed a set of activities which members engaged in to invite others to participate in problematic situations during both team projects. Members openly admitted to having experience problems and hence **sought for help and feedback** from their mates. Members approached their mates to discuss their respective subtasks and also sought for feedback beyond the team's boundaries, namely collectively from the team's tutor. As a response to help seeking, members had to take some time to assist in rising problems: Members showed a high degree of **willingness to help** each other; members joined in the process of solving problems and discussed various subtasks of team members. More specific feedback was also given on members' subtasks when the team approached the end of the project. There were several moments observed when team members made a new sense of what they had already known, hence **reframing** their initial understanding of the project task. The transformation of team members' perception into a new understanding appeared to be imposed by internal, challenging project discussions. It was observed that members built on each other's comments, some more challenging than others, which led over the course of time to a reshaping of previously held assumptions. Additionally, externally gained feedback appeared to transform the team's understanding of its project.

With regard to the **action** part of team learning, observational data of BPIS revealed a set of activities when team members translated collective implicit insights into more explicit concrete action items through a process of **codification.** There was one team member who often recorded the team's insights and agreements by entering the team's collectively gained insights into meeting minutes which, in turn, were sent to all team members. It was even observed that the records of a previous meeting were used as a starting point in the subsequent one in order to further elaborate on project pathways. In addition, actions were taken as regards **transferring the team's newly generated knowledge to others** outside its boundaries. In sum, BPIS showed **continuous improvement** in its project proposal: members built up on comments in the team's dialogue and implemented advice and feedback from each other and from outside. Then, in the subsequent meeting, they asked for further feedback which, over the course of the

project, finally led to a continuous development of the consultancy project and to reconsiderations of the team's proposals.

Thus, BPIS engaged in complete learning cycles, gained collective insights on the team's task, and subsequently implemented and acted on the team's insights. This finally resulted in the team's project output which was externally perceived as a very satisfactorily completed project product. The team's faculty members, as well as members of the team's embedded consulting in their peer evaluation, assessed the project delivered by BPIS as very good.

7.3.2 Radar Team: High Reflection, Minor Difficulties in Action

In respect of the team's reflection part of learning, members of Radar also showed high openness in **seeking help and feedback** from each other, similar to BPIS. In this case, the younger, less experienced mates admitted to being lost and asked for help in terms of how to approach their task in observed meetings as well as in a bilateral way outside meetings. The more experienced team members also sought for feedback among each other by asking what members though of their presented profiles. This was not only found in relation to members inside the team, also some of the members asked externals to give feedback on their profiles. Analogous to BPIS, members of Radar responded to this help seeking and showed a high degree of **willingness to constructively help** the juniors with framing their profiles. **Feedback giving** among all team members was often observed in team meetings which resulted in the emergence of new perspectives for single profiles. Hence, members **reframed** their initial understanding to new understandings of individual profiles through collectively debating members' profiles. Similar to BPIS, the team's reshaping of its initial understanding was also encouraged by project discussions with externals outside the team's boundaries.

In terms of the team's action part of learning, members of Radar rarely translated gained insights from team discussion into explicit action items, which had, however, been observed in BPIS. It seemed that the **codification** process ran on a more individual basis in Radar. Members extracted their tasks from project discussions and wrote individual tasks for a member's subtask down, though these were not proactively shared among

the members. Some members indicated a future need for introducing the procedure of recording minutes of meetings as members experienced the lack of knowing what had been agreed during team discussions, in particular in situations where members could not attend meetings. However, similar to BPIS, the members' attitude towards **transferring new information to others** outside its own boundaries seemed to be open, in particular to the project partner and client. Members updated others in their embedded organization informally on the team's progress rather than in formal meetings; this might have been due to the early stage of this project as, no final results could be presented as yet. In sum, members acknowledged a **continuous change and improvement** from the beginning to the present observed stage of the Radar project, similar to BPIS. Profiles which team members conducted had been improved based on the feedback received. Although most of the feedback directed at the individual profiles was implemented by the team members, it was observed that some more general ideas directed at the overall project were not followed up.

Thus, to sum up, this team successfully engaged in reflective behaviors to increase its members' insights. In contrast to BPIS, however, minor difficulties were experienced by this team in the action part of learning, particularly in codifying and implementing more general ideas of the team's project. The codification of the team's insights ran on a more individual level, team members wrote the insights down that were important for each one's profile. But insights directed at the overall project were lost from time to time and hence were not implemented by this team. However, because the team stood at the beginning, the exploratory phase, rather than at the end of the project, and profiles were written on an individual basis, the difficulties in implementing collective insights did not impede the general continuous improvement and performance of team's task so much. The focus of this project stage still lay on the team's increase of insights, at which this team was successful in. Although this project was regarded by most members as a very successful one, some members indicated the need to improve the action part, particularly the codification of the team's insights which is in accordance with my analysis.

7.3.3 MarkOP Team: Struggling in Reflection and Action

Over MarkOP team's life span, field data revealed only a few activities which members used to induce their mates to participate in problematic situations. On the contrary, members of MarkOP worked more individually on small, less interdependent subtasks and **rarely gave feedback to each other**. In observed meetings, members were superficially addressing diverse topics which were in a broader sense related to the project, yet without going into detail in any of these diverse topics. This behavior was even reinforced through members irregular attendance at meetings, as members could not build on each others' knowledge. Only one team mate actively tried to obtain help from her mates. However, instances were observed when most of the members neglected to respond to her request for assistance. She could not rely on her team mates and needed to ask members outside the team's boundary for help shortly before finalizing the mid-term presentation. Similarly, when approaching the end of the project, team members appeared to give little constructive feedback on each other's written subparts. As a result, in contrast to BPIS and Radar, this team retained its initial perspectives of the team's task and omitted to collectively **reframe** previously held assumptions. The team's perception of team functioning only changed from the beginning to the end in terms of more collaborative and supportive approaches to working together. Yet there was little evidence observed of collective reframing where the team's task was concerned. The members rarely expanded each other's comments and failed to combine their respective ideas into one overall project proposal.

In terms of the team's action part of learning, again differently to BPIS, MarkOP tried to **codify** the team's knowledge by recording the content of meetings into minutes. However, the difficulty lay in the unstructured way meetings were held which led to the fact that members experienced difficulties in extracting concrete action items for minutes. This behavior as regards codifying the team's insights was also contrary to Radar, as this team at least tried to come up with minutes of meetings, though this was ineffective for MarkOP because it was too general. In contrast with BPIS and Radar, this team also appeared to be rather reserved when **transferring knowledge to others outside the team's boundaries**. In sum, contrary to BPIS and Radar, this team showed only little project progress in its task and seemed to be moving in circles. "You never close it. So next time you meet up, the same issues come up. Why do they come up?

Because last time, it was not properly closed. It was not closed because the ideas were not really discussed, accepted or rejected," (Interview: Vladimir) admitted one team member when evaluating the team's progress - or more aptly the team's standstill. Likewise, although MarkOP arrived at a new perception in terms of how to work in this project, no action was taken to change self-identified weaknesses.

On the whole, in contrast to BPIS and Radar, this studied team struggled in practically all activities for building team learning. The team members showed little evidence of reflective behaviors, subsequently resulting in a low rate of collective action and a poor externally assessed project product. Besides the low external evaluation by the team's faculty advisor, the team's peers in its embedded consultancy evaluated the team's final project product very poorly, in contrast to BPIS.

7.3.4 Comparative Conclusive Remarks on Teams' Learning

The BPIS and Radar teams showed similar occurrences of the teams' reflection part of learning. Both teams were able to increase their insights through mutually helping each other when task-related problems arose or by discussing members' profiles as a feedback partner. These debates led to a reconsideration of initial task assumptions and to continuous reframing of the team's understanding of the project. Contrary to this, the MarkOP team only gained very few new collective insights. Members tended to work on individual tasks and overlooked members' pleas for help and feedback. Due to these rare collective debates on team's project, members neglected to rethink the team's task together and continued with their initial understanding of the task. And only after receiving harsh feedback from externals regarding the team's attitudes did members from MarkOP reframe their perception on how a team should function.

With regard to the teams' implementation of collective insights, all three teams showed different kinds of occurrence. Whereas members of the BPIS team successfully engaged in all three action activities, Radar experienced some problems in the process of codifying collective gained insights. Instead, members individually made notes on what to do for each task, although minutes of team meetings were not recorded. Also in keeping with BPIS, it appeared to be open to transferring new information to externals

and additionally revealed continuous progress in its project. In contrast to BPIS and Radar, the MarkOP team struggled in practically all activities concerning taking action to implement insights. The team's reshaping of understanding to more collective teamwork was, however, not implemented. Although this team recognized the need to change its habits, it did not take any action to do so. The following table juxtaposes learning subdivided into reflection and action in the three presented cases.

Name of the Team	Team Learning Pattern	
	Reflection	**Action**
BPIS Team	- Team members sought for help and feedback - Members showed high willingness to help each other - Team members reframed their initial understanding of the project ✓	-Team's collective insights were codified in minutes of meetings - Team members transferred team's newly generated knowledge to others - Team showed continuous improvement in team's project ✓
MarkOP Team	- No mutual help and feedback giving was observed - Team reframed its perception of team functioning, but not team's understanding of task ✗	- Team experienced difficulties in extracting concrete action items from team discussion when writing minutes of meetings - Team acted reserved when transferring knowledge to others outside team's boundaries - Team showed little progress related to team's task and no change in team's functioning ✗
Radar	- Mutual helping and feedback giving was observed - Team members reframed their initial understanding of the project ✓	- Codification process ran on an individual basis: The team did not write minutes of meetings - Members' action concerning transferring new information to externals was open - Team showed continuous progress in their consultancy project ✓

Table 21: Team Learning Classified into Reflection and Action

7.4   Shared Leadership and Team Learning

As just perceived in the previous section, BPIS was the team that engaged in complete learning cycles, including gaining collective insights and additionally taking action to implement this gained new knowledge. Similarly, Radar also engaged in continuous learning activities. It appeared to be high in reflective behaviors and also in action, with some minor flaws in the collective codification processes. Apart from this, both teams also showed a similar distribution of leadership among the team. In Radar as well as BPIS, both an official leadership position and a representative role were designated.

However, hierarchical differences were played down and members of both teams did not feel any rank distinctions among each other. Instead, in both teams this officially designated person took on a coordinator role whereas others emerged as co-leaders in different aspects of leadership.

In contrast, MarkOP showed only little evidence of either learning category, engaging in little reflection and practically no collective action. In terms of the team's leadership, the team representative function developed into a rather superior position which was contradictory to both teams in which hierarchical differences were played down. In MarkOP, the team representative appeared as the superior in the team and definitely gave the directions. Yet, when the team experienced problems, this position was rotated to another member who took an even more superior position. Over time, the members of this team looked up more and more to one chief at a time, which was contrary to Radar and BPIS, where leadership distribution developed into a rather shared circular placement.

How these different leadership formations were linked to team learning, and in particular how specific leadership activities relating to task, relations and change bear on reflection and action, is the subject of the discussion below. In the following, I will start to comparatively review the role of shared leadership activities in learning in the successful ones, both the BPIS and Radar teams. In the next step, I will oppose these relationships with the failure case, the MarkOP team.

7.4.1 How It Worked Well: The BPIS and Radar Team

Task Substance of Leadership

In both successful teams, the team's **planning** process was shared among the members. Both teams worked as a consultancy where each external client had already set a very broad goal. Team members needed to make sense of the request which the client had submitted. Members were involved in reflective discussions in order to understand and to arrive at a common understanding of what each team needed to do. In both teams, it was shown that each team's need to plan its task stimulated members to engage in

brainstorming, to debate and discuss the project and concurrently, to gain project insights.

Their team's collective planning process led in both successful teams to a reduction of ambiguity in the sense of knowing how to proceed in the project and where to focus on in more detail. Members of both teams came up with a milestone plan and consequently took action based on the team's gained insights through collective planning. In the Radar team, the codified project plan was part of the required proposal the team had needed to present to the ministry. In contrast, the writing of the milestone plan, in other words the team's codification of gained insights on its goals, was on an optional basis supported by one member of BPIS. Hence, in both teams, insights gained by the team became explicit proposals so that workable knowledge could be developed in each sub-area.

These collectively agreed team goals were reinforced by one single team member who took over the leadership activity of **clarifying roles and objectives**. In Radar as well as BPIS, the officially designated project leader or team representative, respectively, were the ones who engaged in this leadership activity. In both teams, these particular members focused and maintained the team's discussions in the direction of the sighted goals and the inherent actions that needed to be taken to achieve the team's goal. These members apparently decreased ambiguity in the team by, for instance, summarizing the main points of team discussions or refocusing team discussions when the team drifted from its main topic. Hence, this leadership activity supported team members' acting on collectively gained insights by maintaining and focusing team's dialogue towards the respective goal.

Contrary to Radar, the coordinator of BPIS additionally reminded and repeated collectively agreed next steps and consequential members' tasks derived from project discussions. In other words, this member reinforced agreed tasks which led to the fact that members knew what they were supposed to do which, in turn, induced a reinforcement of implementing collectively generated and discussed ideas. This member encouraged the team to act on what they had collectively agreed and discussed, taking into consideration the team's overall progress. Unfortunately, this particular leadership

activity of reminding members of tasks derived from collective discussions was often lacking in the Radar team. Although the project leader maintained and focused team discussions by summarizing the content, it was, however, often left open who would do the consequential tasks. This resulted in some of the ideas gained from group discussions not being followed up so that they were lost over the course of team's project[16]. In this team, members were rather supposed to individually deduce each member's task for the subsequent meeting based on the team's discussions.

In both teams, based on these two members' clarifying activities on each team's action part, in particular on their summarizing main points of their teams' discussions, other members responded, in turn, and added new perspective and ideas which again led to the generation of new insights in both teams. Hence, due to these clarifying activities by the project leader and team representative, respectively, not only was the action part of learning enforced, but rather an interplay between the action and reflection part of team's learning was induced.

Both teams often started their meetings by reviewing together the progress of each project as to whether the defined plan and agreements had been achieved and thus implemented. Both teams **monitored** each other's actions regarding what each member was supposed to have done by asking members about the status quo of subtasks. This collective review process in meetings encouraged members of both teams to perform their tasks and implement their received feedback, as members were asked to give an update. Beyond this collective review in meetings, members of the BPIS team additionally engaged in individual review processes outside meetings by comparing the individual output with the codified task responsibilities of each member which had been recorded in minutes and distributed. Here, it seemed that individual members of BPIS stimulated the team to act on missing issues which all members had previously collectively discussed and agreed to do. In contrast, in the Radar team, the team had no common ground to individually review the members' output as to whether specific insights had really been implemented or not, because task responsibilities of each were

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[16] For this reason, the link and line respectively of the task leadership activity clarifying roles and objectives is dashed when graphically illustrating the role of clarifying roles and objectives in action in Figure 20.

not codified in meeting minutes. Hence, it appeared that this kind of assurance process lay in each member's scope of action in Radar.

In Radar and BPIS, the review of each other's project action, in turn, supported discussions on members' subtasks and formed the basis for gaining more collective insights and new ideas. It was observed that, whenever a team member updated the others about the status quo of his/her subtask, other members challenged this review by asking several questions. Hence, it seemed in both teams that collective monitoring not only stimulated the implementation of insights, but also induced reflective insights.

Relations Substance of Leadership

In contrast with Radar, members of BPIS did not know each other at project start and thus **relationships needed to be built** between the members. One of the members of BPIS was mainly engaged in ensuring the team became acquainted with each other. This leadership work resulted in a friendly, cohesive and trustworthy team environment in which the members identified with their common project task and took the time to help each other by raising questions. This open, trustful and constructive group environment enabled open and reflective discussions among team members by asking each other straight questions and requesting help, admitting difficulties or challenging feedback. On the contrary, as members of Radar had known each other before project start, the team did not need to build its relationships, but did need to **maintain its relationships**. These leadership activities were engaged in by a few members, resulting - as with BPIS - in a friendly and open team climate which also served as a common basis for intensive debates on each other's subtasks. On the one hand, it allowed members to ask for help and feedback without feeling personally incompetent. On the other hand, this open climate led to the fact that members felt confident when they had ideas which did not conform to the team's main body of thought.

In Radar, when members engaged in highly confrontational discussions on the team's task, one of the members took additional care that these debates did not lead to explosive personal argumentations by making cheerful and calming comments in order to maintain the team's relations. This was observed in the BPIS team as well, where relationships were also maintained by facilitating the resolution of tensions among

members. Members of both teams indicated a benefit for the team's reflection potential because, if the team's relationships had not been maintained, the team might possibly have broken up which, in reverse, would have meant fewer occasions for collective in-depth discussions with each other. Even some of the members, in particular from BPIS, felt supported and assured by managing tensions in the team and felt encouraged to be more active in team discussion, thus sharing more insights and ideas with the rest of the team.

Change Substance of Leadership

In both teams, members engaged in **intellectual stimulation** behaviors which in turn promoted the teams' reflection. In BPIS, one of the members emerged as the challenger right from the start of the project. She encouraged the rest of the members to question their task assumptions and to consider new points of view. Thus, her team's insights were reinforced by this intellectual stimulation behavior which inspired the team to question the status quo and to look at task-related problems from a different angle. This beneficial role of intellectually stimulating activities in the team's reflection was also observed at Radar. Here, contrary to BPIS, two members were highly engaged in performing this role of intellectual stimulator. Again similar to BPIS, these activities led to a reframing of single members or overall team's approach and hence assured that no obvious paths were followed. Changes in the team's initial understandings resulted from these intellectual stimulation activities.

The change-oriented leadership was further operationalized through **boundary spanning** activities engaged in by all members of the two observed teams. These boundary spanning activities increased the amount and variety of information which was available to both teams. However, it was important that, in a further step, this external - and often individually acquired - information was also circulated to all members of Radar and BPIS so that all members could profit from these insights. In both teams, information gained from external sources was often shared at the beginning of a meeting or in a codified manner by distributing documents. Consequently, in both teams, collective insights were enhanced by externally acquired knowledge once this was accessible to all mates.

Although both teams' reflection part of learning appeared to be positively influenced by boundary spanning activities, the action part of team learning, particularly the activity of transferring new information to externals, seemed to be only partially effected. In both cases, no real links could be observed since in the BPIS team, the team's embedded organization acted in a rather insulated manner and did not welcome a high degree of collaboration, although this team often invited other teams from its consulting company to meet to exchange information. Likewise in Radar, no link between boundary spanning and the action part of learning could be observed as this team was still at the beginning and no final results could be transferred to externals of its organization. Hence, due to the early stage of Radar's team project and the low appreciation of collaboration in the BPIS team's environment, no clear argumentation for the role of boundary spanning in the team's action can be given at this point.

The following figure gives a description of the role of shared leadership activities in team learning in the successful cases. The marked lines depict the relationships of shared or individually performed leadership activities of the task, relations and change substance in either the reflection or the action part of team learning. In Radar, one of the lines, in particular the relation of clarifying roles on action, is dashed as the Radar team experienced some minor flaws in this particular task activity. This, in turn, did not enhance the team's action part of learning to the full extent, as some of the team's insights were lost. The arrows between team reflection and action depict the interactions between the two learning categories. In both cases, it appeared that collective planning not only enhanced the reflection part but also, in a subsequent step, the action part of learning. Similarly, though vice-versa, the leadership activities of monitoring and clarifying roles and objectives enhanced, firstly, the action part of learning and, secondly, the reflection part as team members again started to reflect on the team's implemented insights.
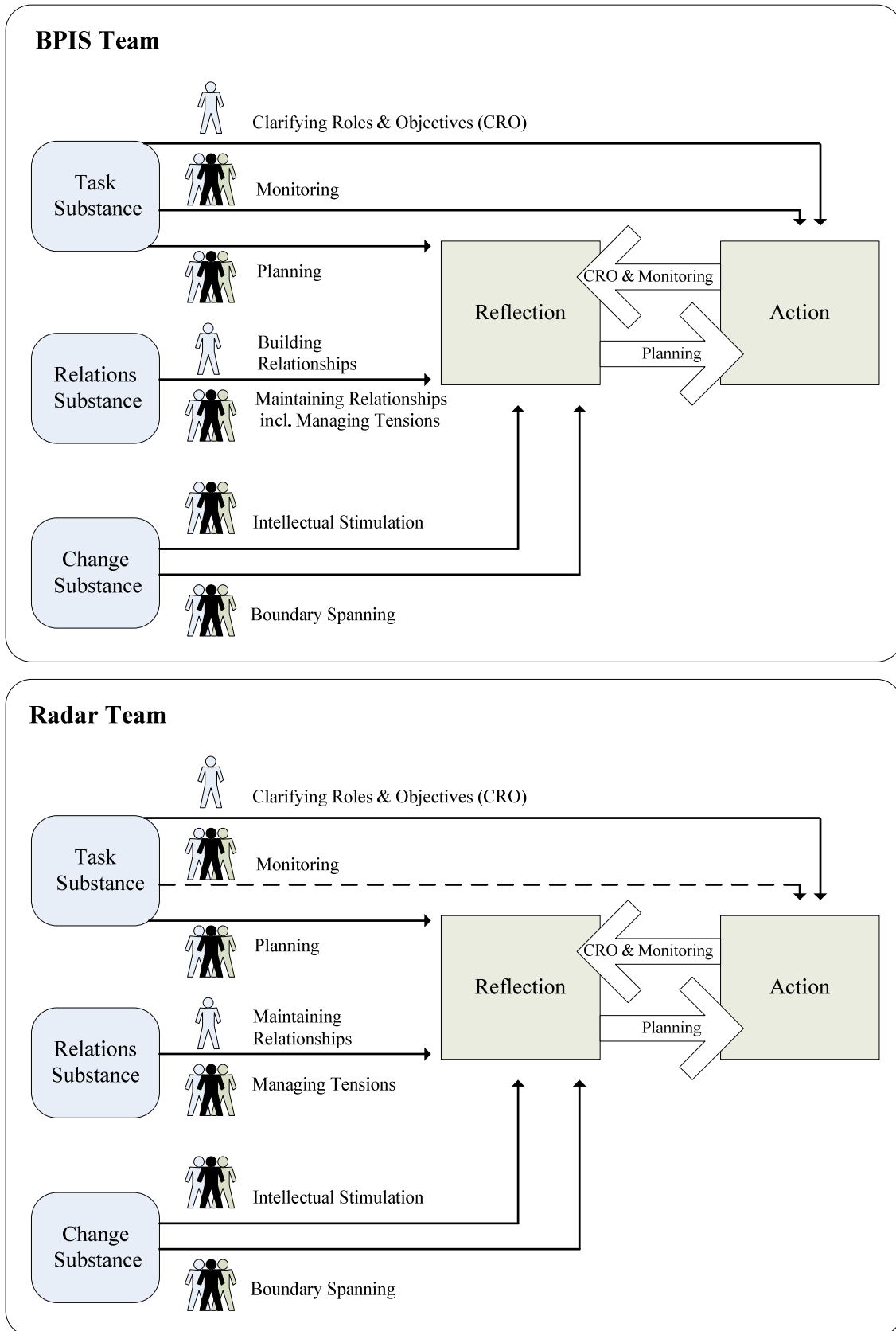
Figure 20: The Role of Leadership Activities in Team Learning (BPIS and Radar)

7.4.2 How It did Not Work: The MarkOP Team

Task Substance of Leadership

Not the team as a whole, but rather the team leader, was responsible for defining MarkOP's direction. Yet, only little attention was given to the client's set vision and the relevant given task. Contrary to the successful projects, the team paid only little attention to **planning** the team's project, including setting its goals and defining the steps to achieve these goals. This low level of planning did not encourage members to collectively and intellectually put themselves in the situation of the company. This low level of leadership activity was compiled by gaining superficial collective insights into the team's task so that the team members even felt rather lost. In contrast to Radar and BPIS, the members did not know what to focus on, they experienced difficulties as to which knowledge fields to gain insights in, and additionally where to gain information from.

Due to the team's low level of grasping its goals, MarkOP could not set clear directions that it could act on. Contrary to Radar and BPIS, where each member received and worked on specific task pieces which in sum add up to the whole team project, in the MarkOP team, each member acted more on individually gained project understandings, often only with little connection to other members' project undertaking. Members described their undertaking as rather non-reflective deeds aimed at showing that each member was actually working and doing something, no matter whether it made sense or not, to achieve a consistent project.

MarkOP's few planning activities also resulted from the team leader's low capacity to **clarify roles and objectives** as no clear directions were defined in the team. Similar to the successful teams, the team leader took charge of this coordinator role, yet with the big difference that in this team no project objectives were defined, which the team leader could have reinforced. In comparison to Radar and BPIS, where the team leader or group representative took over the coordinator function including summarizing content in or after project discussions or reshaping the content of discussion in case the team had drifted to non-project related topics, in MarkOP, none of these activities were observed. From time to time, the team leader sent minutes of meetings, but with general

contents without specifying each member's project task duties. These rather inadequate activities directed at clarifying members' roles and objectives led to misunderstanding and overlaps in the team's task. In other words, nobody in the team took charge of implementing the actions that had resulted from project meeting discussions among the members, even though these gained insights were fewer in comparison with the successful teams.

Similar to MarkOP's restricted planning and clarifying roles and objectives, it only engaged in more basic **monitoring** activities. Monitoring activities performed by the team leader were observed at the end of each phase, as the team needed to present its findings over the course of the whole project, as observed in the successful teams. In Radar and BPIS, team members often asked each other at the beginning of each meeting to update the others in the form of giving a review of members' assigned tasks. In MarkOP, however, this collective review of ongoing activities was not observed. In this team, when the team reached the end of each phase, the leader took charge of checking whether the written subprojects were submitted and whether members used the correct format in the presentation. However, as the specific content of the individual team members' subtask was not collectively defined in advance, the team leader could not review whether collective insights had been implemented.

Additionally, the team's insufficient collective monitoring of its progress and output also led to the fact that no new insights were gained through the process of giving each other a status quo as seen in both successful cases. In Radar and BPIS, it appeared that collective monitoring not only simulated the action part of learning, but also - in a subsequent step - the reflection part, as other members commented on the status quo of the assigned project tasks which again led to new ideas and reconsiderations. Recalling the MarkOP case, team members acknowledged their low level of reviewing activities on team members' subproject proposals which, if fully presented, would have led to the detection of potential weaknesses in the team's project.

Relations Substance of Leadership

Similar to the BPIS student team, the MarkOP members did not know each other at the beginning of the project. In the successful BPIS team, one of the members took charge

of **building relationships** by getting to know each other at project start which resulted in a friendly and collaborative team feeling. In contrast, members of MarkOP took good relations among students for granted and did not show any activities directed at becoming acquainted with each other[17]. According to members, a group feeling never emerged due to this lack of building members' relationships. Members worked individually, less connected to each other and were rather engaged in finishing their individual, self-defined work rather than showing a high willingness to help each other. This appeared to be contrary to the two successful teams, where members felt strongly related to the team project. Members of both teams showed a high degree of willingness to help each other when members experienced problems, or to be available as a feedback partner to comment on subtasks in and out of meetings. The more individual engagement of MarkOP members increasingly led to fewer incidents where members spent time and made the effort to help and discuss each others' subtasks so as to gain collective insights. Remembering an actual incident, one of the members felt left alone shortly before the final marketing presentation: She could not rely on the help of her mates to solve emerging project difficulties, although she had desperately sought for help. She had to solve the problem on her own and asked others outside the team's boundaries to help her.

Overall, in this team, task related problems increasingly developed into personal disappointments and tensions which, towards the end of the project, grew to such an extent that some of the members did not even talk to each other as nobody was capable of solving these problems among members. This **lack of solving team tensions** was in contrast to the successful teams where the members tried to actively maintain the team's relationships. In the event of difficulties emerging among members, BPIS members took the initiative to solve the tensions among each other to avoid losing members and their intellectual contribution to the team's discussion, hence avoid losing collective insights, as observed in MarkOP team.

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[17] That is why the Figure 21 does not show any line between the relations side of leadership and the reflection part of learning as the team engaged in no relations oriented leadership activities.

Change Substance of Leadership

As the MarkOP team experienced difficulties and received critical comments from its colleagues at the consultancy on the team's working habits, two team members emerged as the **intellectual challengers** in the team and reinforced this externally gained feedback. These two tried to shake the other members awake by aiming to change members' understanding of how a team should function. One of the two recalled in the interview: "Nina and I tried to initiate conflicts – in order to stimulate their thoughts…" (Interview: Thomas). Yet the impact both members had on the new understanding of working together was only short-lived. The team returned to its initial perception and continued to work individually without showing much responsibility for the team as a whole. Team's intellectual stimulation activities were totally different in comparison to the successful cases. In Radar and BPIS, intellectual stimulation activities were directed at questioning task related assumptions and task procedures and were not directed, as observed in MarkOP, at the team functioning. Additionally in both successful teams, intellectual challengers emerged right at the beginning of the project. This was contrary to the MarkOP team where both challengers emerged towards the middle to end of the project when externals had perceived this team to be one of the worst in the consulting project and had clearly formulated the need for this team to change something in order to perform better. Additionally, in the successful teams, members acknowledged the beneficial role of this intellectual stimulation in the team's reflection. Additionally, the team's gained insights through intellectual stimulation were followed and acted on by members, leading, in turn, to a continuous improvement in both their projects. This was not the case in MarkOP where a reshaping of the team's understanding of team functioning was observed, but only for a short time. Unfortunately, members returned to their initial way of working, clearly forgetting their newly agreed understanding of working as a team.

The externally and more individually acquired information which team members gained through their limited **boundary spanning** activities was rarely shared with the other team mates. Information from the few scouting activities as well as insights gained through coordination activities with the rest of the consulting company engaged by the leader were seldom shared among members. This was also in contrast to the successful teams where the teams' collective insights were enhanced since members shared their

externally gained knowledge in meetings or in a codified form with the rest of the team members. In MarkOP, most of the time, members could not participate in insights gained from more individually oriented boundary spanning activities as acquired information was not proactively shared. Likewise, the action part of learning, in particular the transfer of knowledge to others, was under-represented as the official team leader engaged in a rather reserved role in the team's embedded organization. This was again totally the opposite to BPIS, where the team tried to reach other teams in its embedded organization in order to transfer and exchange information, although, in this case, the other teams appeared to be rather reserved as regards collaboration.

The following figure illustrates the role of leadership activities in team learning. In sum, most of the leadership activities in the MarkOP team were engaged in by a single individual, the team leader. Yet these leadership activities were not performed to a great extent. These activities could not, or rather could hardly, enhance the team's reflection or its actions. This low engagement of task and change oriented leadership activities are illustrated in the Figure 21 as dashed lines between task oriented and change oriented leadership and reflection or action. The arrows between reflection and action are also dashed as the rather narrow extent of task and change oriented leadership activities did not stimulate either reflection (through CRO and monitoring) nor action (through BS and planning) in a subsequent step, as observed in Radar and BPIS. As MarkOP did not engage in any relations oriented leadership activities, no link was observed, illustrated in the figure by crossing out the leader and the absence of a line between the relations substance of leadership and the reflection part of learning.
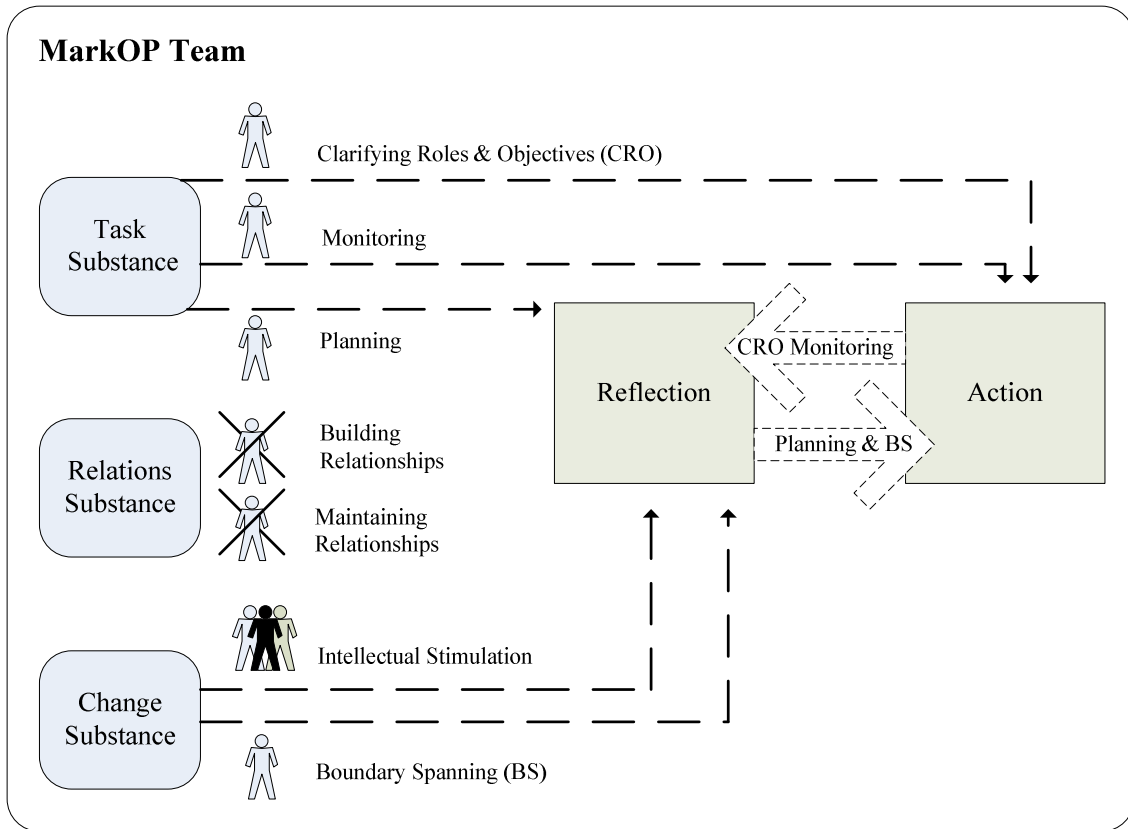
Figure 21: The Role of Leadership Activities in Team Learning (MarkOP)

8   Discussion

This discussion part conforms to the structure of the two research questions presented in the literature review which are again summarized in the following.

The first research purpose of my PhD project focuses on the nature of shared leadership, a research undertaking suggested by recent scholars (Carson et al., 2007; Yukl, 2010). The bulk of research on leadership has been done on the influence of the effective individual leader on team performance (Burke et al., 2006; Mathieu et al., 2008), and only little work has been done towards empirically understanding the nature of shared leadership (Carson et al., 2007; Day et al., 2004). I applied Yukl's (2010) behavioral tradition of effective leadership, in which he claims that effective leadership, regardless of whether it is focused or shared, consists of the engagement in three substances of leadership, including the task, relations and change dimension. For each substance of leadership, Yukl (2010) proposes specific leadership activities: For the task substance of leadership, Yukl (2010) proposes leadership activities including planning, clarifying roles and objectives, and monitoring. The relations substance implies the activities of building and maintaining team members' relations. Boundary spanning and intellectual stimulation are activities which build up the change substance of leadership.

As teams are dynamic constructs which change their functions over their life span (Hackman & Wageman, 2005; Gersick, 1988), I have assumed that the team members' engagement in those performed leadership activities also change over time, which is in accordance with the shared leadership definition I have applied in this research (Pearce et al., 2004; cf. chapter 2.5.2.6). That is why, when studying the distribution of shared leadership, I also looked for its emergence and development. In sum, I had the following research question in mind when exploring the nature of shared leadership:

Research Question 1: How are leadership activities shared?

The second purpose of my research project focused on better understanding the relationship between leadership and team learning. As leadership is directed at influencing team processes in terms of building and framing a team's task, maintaining a team's social context and opening members' minds to something new, I chose to study a team process which is predicated on the conditions created by leadership. For this doctoral research project, I resolved to investigate the role of leadership in team learning. This is because team learning literature specifically highlights the importance of social safe conditions enhanced and maintained by team's coach in order to make learning behaviors possible (Edmondson, 1999). Team learning scholars also point to the importance of framing team's task in order to make reflections on team's task feasible (Sarin & McDermott, 2003; Wong, 2004). A further dimension recently highlighted as a precondition for team reflexivity concerns the change substance of leadership (Schippers et al., 2008). For teams to explore something new, it is essential to have someone in the team who pushes the members to go in new directions instead of sticking to the existing knowledge base (Wong, 2004).

However, existing literature only focuses on particular learning preconditions generated through leadership. Because of this narrow focus of very specific leadership activities when studying team learning, other scholars have called for a broader perspective on leadership when exploring its impact on learning (Burke et al., 2006; Edmondson, 1999). That is why I have explored the influence on team learning of leadership activities related to task, relations and change (Yukl, 2010).

Research Question 2: How do shared leadership activities influence team learning?

The discussion part is structured into four main parts. In the first part, I will discuss my contributions directed at the nature of shared leadership, including performed shared activities and shared leadership emergence and development, and will link these findings to existing leadership research. The second part focuses on the link between shared leadership and team learning and highlights the complementary effects these three subcategories have on team learning. In the third part, I will present implications

which are of interest to managers in today's organizations. The fourth part of this discussion section pinpoints the limitations of this research which, in turn, also constitute new possibilities for future research.

8.1   Nature of Shared Leadership

8.1.1 Distribution of Shared Leadership Activities

In this section, I have focused on the composition of the nature of shared leadership and examined the leadership activities performed by team members when influencing each other. I have applied the traditional behavioral school of leadership by Yukl (2010). In this stream of leadership research, effective leadership is built on three substances of leadership, namely task, relation and change, for each of which Yukl (2010) proposed activities for operationalizing these substances. I investigated the proposed leadership activities in each team and explored the occurrence of performed leadership activities in the respective teams. In the three cases in question, the following picture emerges:

The successful student team BPIS and the Radar research team performed activities in all three dimensions. Both teams had a designated official team leader who engaged in leadership activities: Both team leaders took on the task of coordinating the team's project on a need basis, including proposing dates for meetings, sending invitations and, in BPIS, writing minutes after meetings had been held, which included the tasks collectively agreed for each member. These leadership activities engaged in by the designated leaders are in accordance with Yukl's (2010) proposed "clarifying roles and objectives of leadership activity" of the task substance of leadership. In both teams, the task substance of leadership was further supplemented by two activities which were, however, engaged in by all members. These task leadership activities included planning the team's goals and monitoring its performance. Similar to the relations substance of leadership that was mainly shared by a few members in each team, the change-oriented dimension also stemmed from the team. A few members in each of the two teams were highly involved in intellectual stimulation behavior, supplemented by boundary-spanning activities performed by the whole team, although in both cases the designated leaders were the official contact persons for externals.

Contrary to the successful cases, the designated leader of the MarkOP team engaged solely in leadership activities. This leader engaged mainly in very basic, though only a few, task-oriented leadership activities. In particular, the team failed to plan its task including setting clear goals regarding what was to be done in the project. This, in turn, led to the fact that no clarifying roles and objective activities could be engaged in as no clear directions had been set. The designated leader only tried to keep an overview of what each member was doing by more or less monitoring their rather individual-oriented engagement in the project. The team's low participation in task leadership again bore negatively on the team's whole project approach. Members became frustrated and conflicts among members emerged which were not resolved either by the temporary leader or by members. Hence, relations-oriented activities that would have built up and managed relations between the team members were not observed. Similarly, the change-oriented dimension of leadership was also performed on quite a low level.

Altogether, in the successful cases, the team leader and most of the team members engaged simultaneously in leadership activities related to task, relations and change. All three substances of leadership served as important building blocks for good team functioning. Not only task and relations oriented dimensions were important as presumed by the traditional two-factor dimension of task and relations; significantly, however, both teams engaged highly in change-oriented behaviors, often leading to the fact that not the first idea was followed, but rather that new, diverse ways were discussed.

By empirically looking at what shared leadership consists of, this analysis provides first empirical insights on how leadership is distributed in a team when these three leadership dimensions of task, relations and change are applied. In doing so, I have contributed to the recent call for future research on what shared leadership consists of, including performed leadership activities and their interrelations (Carson et al., 2007; Mathieu et al., 2008; Yukl, 2010).

One existing study so far only investigated the relationship between antecedent conditions, including shared purpose, social support and members' voice, and shared

leadership (Carson et al., 2007). But how these antecedent conditions developed, what activities were actually done to establish such antecedent conditions and by whom, were questions which were left undiscussed (Mathieu et al., 2008; Yukl, 2010).

Consequently, in my approach I have looked for the leadership activities performed by team members that sum up shared leadership. In both successful teams, even though most team activities related to task, relation and change were performed by more than one member, the coordinator role was still left in the hands of the official designated leader. This is also in accordance with recent theoretical concepts on shared leadership (Pearce et al., 2004; Pearce, 2004, c.f. literature review on shared leadership definitions) which expand the concept to the integration of an officially designated leader when defining shared leadership. What kind of activities the official designated team leader takes on and how these activities interact with the leadership activities stemming from the rest of the team have, however, not been empirically investigated (Cox et al., 2003). In this respect, I also provide insights into this gap in knowledge: My findings shed light on the nature of shared leadership, on what shared leadership consists of, including the three performed leadership substances and their interrelations, in cases where one of the team members was the official team leader.

8.1.2 Emergence and Development of Shared Leadership

To get a better knowledge of the nature of shared leadership, I explore how shared leadership emerges at the beginning of the project and then evolves over the team's life span. Although the initial situation in the three observed teams was similar, two different forms of shared leadership development emerged from the data.

At the Beginning of Teams' Lives:

At the start of each project, a project manager or team representative was designated in all three cases. In the two successful teams, the team managers did not take over a superior position in the team. The project leader of the research group took over a moderator function among team members and assured reliable contact to the client as well as assuring administrative financial tasks. Similarly, at the beginning of the successful team project, one of the team members was also assigned to take over the

team representative function, including the task of meeting the other teams in the consultancy to assure information flow and common strategy among the teams. After some time had passed in the team's life span, however, this task was performed collectively by most members.

A different picture emerged in the case of the unsuccessful student team. Similar to the successful team, a team representative was also selected in this case. However, contrary to the other two cases, the representative of this team took over most of the responsibility for managing the project. Only one further team member emerged as a co-leader right at the beginning of the project, although over time this member withdrew from giving this leadership support to the rest of the team.

During Teams' Lives:

In the successful student project teams, multiple team members gradually emerged as co-leaders. Besides the team representative, a further team member was highly engaged in leadership shortly after project start, and emerged as a natural co-leader. Similarly, a third member partook in the leadership process and emerged as an additional leader in fields in which this member was knowledgeable. In the middle to end phases of the project, most of the members engaged to a greater or lesser extent in the leadership process. There appeared to be a continuous increase in members' engaging in the leadership process and emerging as co-leaders in the consulting project. Members observed each other when engaging in leadership, adopted some leadership behaviors performed by their colleagues, and stood in for specific leadership activities when others were absent or members naturally felt the need to do so. This observation is in accordance with Gronn's (2002a) distributed leadership understanding as a conjoint agency, including a reciprocal influence process among members. The fact that team members adapted to each other's leadership behaviors might be regarded as an example of such a reciprocal character of leadership influence among members.

In sum, the leadership in the successful teams evolved from a central placement of the team representative to a circular placement in which nearly all the members engaged as co-leaders. Team members influenced each other, no matter whether one of their colleagues was the official project leader or the team representative. The following

figure illustrates the first form of shared leadership - the successive increase of team members participating in the team's leadership.
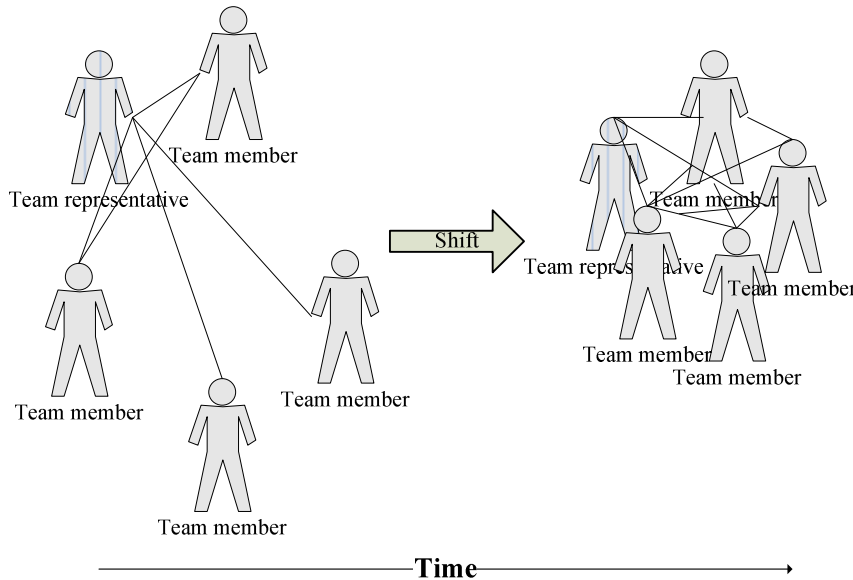
Figure 22: Form 1: Successive Increase in Team Members Leading the Project

In contrast, the unsuccessful team increasingly relied on one team representative at any one point in time. However, shortly after project start, the team experienced initial problems with the task and additionally with each other. The team leader felt overstrained and overtaxed and asked the team to select another member as their leader. As a result, another team member took on this leadership position. Such a shift of the team leader position was observed again at the end of the project, when the project seemed to be collapsing. These shifts of the team leader position might be regarded as a timely rotation of the leadership responsibility among members. It appeared that the change in leadership was due to members' and leaders' dissatisfaction with the team's functioning and performance. The following figure illustrates the shared leadership form of rotating the single leadership position among team members.
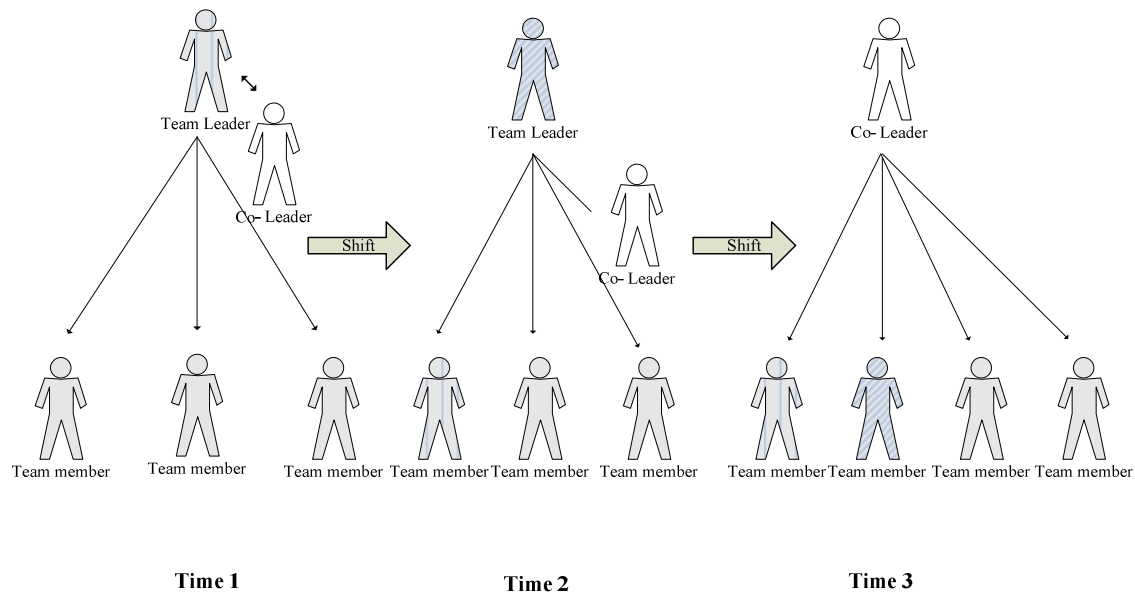
Figure 23: Form 2**:** Multiple Rotation of the Leadership Position among Members

Support is given that links the findings from these two explored forms of shared leadership to recent literature. Pearce et al., (2004) claim that shared leadership is developed by a serial emergence of official and unofficial leaders, as could be seen in the successful cases. However, these authors do not answer the question as to what this development process looks like. Day et al. (2004) also affirm this successive development process of shared leadership. These scholars conceptualize shared leadership as an outcome of a team's episode. Day et al. (2004) acknowledge that a team leadership cycle is not complete after the first round, but rather that a team's enhanced or decreased capacity for distributed leadership serves as input for the next leadership cycle phase of the team. What actually happened in each of the described team episodes and how shared leadership was distributed could not be answered by this theoretical concept of shared leadership (Day et al., 2004).

Hence, I contribute to the literature on the nature of shared leadership by illuminating the process of the emergence and development of shared leadership. I found two different kinds of development forms of shared leadership; one with an incremental increase of team members being involved in leadership, the second form concerning the rotation of the single leader position among members. Though Carson et al., (2007) pointed in their review to the possibility of regarding shared leadership from a rotating point of view, namely: "Teams with high levels of shared leadership may shift or rotate

leadership over time, different members provide leadership at different points in team's life cycle and development" (Carson et al., 2007:1220), this perspective of shared leadership from a rotating point of view is only quite vaguely explained by these authors. Does this definition mean that one team leader engages in leadership at one point of time, as seen in the failure case; or that two or more team members engage simultaneously in leadership, which is then rotated to other team members? My findings showed that rotating the single leader position several times did not have a very positive impact on the team. Rather, the rest of the team relied increasingly on the single leader position and only performed the tasks which had been assigned to the individuals by the team representative.

In sum, although at first glance the unsuccessful student case seemed to be a team that shared its leadership among three members over the team's life cycle, the individual team leaders acted in each case more like superior, vertical leaders with clear leadership influences from the superior to the subordinated members, but not vice-versa, even though this position was rotated three times. This situation in which a more or less purely top-down leadership was rotated led me to the next crucial insight, namely to highlight the time factor more in future when studying shared leadership.

Most empirical studies have measured shared leadership cross-sectionally (Carson et al., 2007; Ensley et al., 2006; Hiller et al., 2006). In existing studies so far, it has not been considered whether team leadership is based on several members at the same time in the team's life cycle, but rather only if the team relied on more than one person for team leadership throughout the team project. However, my findings point to the importance of having more than one team member involved in the team leadership process at the same time (successful teams) rather than different members at different points in the team's life span in the form of rotating the leadership responsibility from time to time (unsuccessful team). If I had asked the unsuccessful team via a questionnaire, "How many members served as a leader in your team?" the answer would have been three. According to recent definitions of shared leadership featuring the number of leaders as a key determinant of shared leadership - "DL (distributed leadership) in this sense means more than one leader" (Day et al., 2004: 874) - this number of three would have led to evaluating this team as one sharing its leadership.

Therefore, to better understand the concept of shared leadership in the future, it is important not only to ask whether the team relied on multiple members leading the project, but rather if members engaged in leadership in parallel and not consecutively. This additionally suggests longitudinal designs over time for further studying this collective phenomenon, as used in this PhD research project.

8.2   Shared Leadership and Team Learning

Although the first research question on how leadership activities are shared in a team delivered good insights into the nature of shared leadership, this research question did not provide any insights into its supportive character in team processes. I chose team learning, as learning is predicated on conditions created by leadership (Brooks, 1994; Edmondson, 1999). However, the few papers investigating the influence of leader behaviors on team learning highlight very specific antecedent conditions generated through leadership in respect of team learning (Edmondson, 1999). That is why I looked for effective leadership including three dimensions of leadership (Yukl, 2010) and investigated how those activities affect team learning. In particular, by applying Yukl's (2010) effective leadership understanding, I have viewed how the task, relation and change role affected reflection or action, two team learning categories that constitute team learning (Edmondson, 2002).

Task Substance and Team Learning

Collective **planning**, the first operational activity in the task substance, was shown to primarily support the reflection element of learning in the successful teams. The members' need to plan their team's task and define its goals stimulated them to engage in brainstorming, to debate and discuss the project, and concurrently, to gain project insights. In a subsequent step, the planning process also enhanced the action element of learning. Collective planning led to a reduction of ambiguity and to a codification of the teams' proposals in the form of a milestone plan which helped team members to actually implement gained insights. Such a link between planning and action goes in accordance with a study by Sarin and McDermott (2003). These authors found that initiation of the goal structure by the single leader enhanced the application of knowledge. However, the findings of Sarin and McDermott (2003) did not address how

the initiation of a goal structure by the single leader supported the action part of learning. Additionally, the question of whether and how the initiation of a goal structure supported the reflection part of learning was not a subject of discussion for Sarin and McDermott (2003).

Instead of focusing solely on goal setting in a team, as done by Sarin and McDermott (2003), I took a broader perspective on task behaviors and included two further task-leadership activities, namely clarifying roles and objectives and monitoring, which have not been discussed to date in relation to team learning.

In terms of **clarifying roles and objectives,** in both successful teams it was important for the team to have someone in charge of coordinating and clarifying what the team had already agreed on. Findings indicate a positive relationship as regards clarifying roles and objectives in the action part of learning as well as in the reflection part in a subsequent step, as other members of the team added new perspectives and ideas which, again, led to the generation of new insights in both teams.

In terms of **monitoring**, findings concerning the successful cases revealed a positive effect of collective monitoring on team learning. This supportiveness was primarily observed in the action part of learning, because members forced each other to perform their tasks and to implement gained insights by being asked to give an update at the beginning of each meeting. In a subsequent step, collective monitoring also appeared to enhance the team's collective insights since other members challenged views by asking several questions.

In sum, the role of the task substance of leadership in learning is an unknown quantity when compared to the relations-oriented stream of research that highlights the importance of a team's climate on learning behavior (Edmondson, 1999, 2002). By studying how task-oriented leadership operationalized by planning, monitoring and clarifying roles and objectives supports team learning, I contribute to this particular knowledge gap in the literature on leadership and learning (Edmondson et al., 2008).

Relations Substance and Team Learning

In order to explore the relations substance of leadership in team learning, I investigated two leadership activities: The first one concerned the **building of relations** among team members which was especially important for those teams which did not know each other at the beginning. This resulted in a team climate in which members felt confident to ask each other questions, get feedback and openly discuss their ideas. Findings in all three cases highlighted the importance of **maintaining relations** between the members, the second leadership activity of the relations substance. In both successful cases, I found that relations among members were maintained through actively dealing with rising tensions which, if neglected, could have led to personal conflicts, as seen in the failure case. This unsuccessful case made it evident that omitting to take care of rising tensions among members led to an increase in personal conflicts and a more individual focus on the project by the members, which again prevented the team from participating in each other's insights.

Research by Edmondson (1999, 2002) supports this particular link to the relations-oriented leadership on team learning: In Edmondson's (1999, 2002) studies, the existence of a psychologically safe team climate allowed team members to ask questions openly and to admit problems and errors, behaviors that constitute learning in teams. Findings in this research extend this stream of research by looking beyond the presence or absence of power differences (Brooks, 1994, Edmondson, 1996) and a psychologically safe team climate (Edmondson, 1999) when studying team learning. Instead, I have looked back to a step prior to the existence of psychological safety and have made additional investigations applying a leadership perspective on what team members need to do in order to generate such a climate.

Change Substance and Team Learning

The findings in my thesis point to the importance of taking the change substance of leadership into consideration when discussing the role of leadership behaviors in team learning. I have operationalized the change substance using two of Yukl's (2010) proposed activities, namely intellectual stimulation and boundary spanning.

With regard to **intellectual stimulation**, it became apparent in the two successful teams that team members' intellectual stimulation activities enhanced the team's reflection part of learning. By linking these findings to a related field of research on learning, namely that of team reflexivity[18], also defined as "the extent to which teams reflect upon and modify their functioning" (Schippers et al., 2008: 1593), it is possible to identify similarities. By studying 32 work teams on a cross-sectional basis, Schippers et al. (2008) found out that transformational leadership by the project leader, including intellectual stimulation, enhanced team reflexivity. However, in the two successful cases, I found that intellectual stimulation activities were not primarily engaged in by the official team leader, as proposed by Schippers et al. (2008). Rather, in both cases, regular members emerged as the challengers in the team who encouraged members to rethink their ideas, which in turn often led to new project insights.

Additionally, the leadership activity of **boundary spanning** in the successful teams was shown to enhance the reflection part of learning. In the observed teams, most of the team members engaged in scouting the team's external context or coordinating with external parties. For the occurrence of team learning, however, it was important that this externally, and often individually, acquired information was also circulated to all members in a further step so that all could profit from these gained insights. This process of sharing externally gained information **internally** among members at team meetings was of particular importance to increasing the team's insights.

However, literature on team learning tends to overlook this internal process of sharing externally acquired knowledge among members of the team. A previous empirical study on team learning by Wong (2004) differentiated between internal learning (learning from interactions among members) and external learning (learning by seeking help, ideas, or feedback from external parties). Wong (2004) conceptualized and measured the external learning part, similar to Ancona and Caldwell's (1992) scouting activity of boundary spanning, and looked at whether individual members scouted external information in the team project. This scouting process was evidence that a team had

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[18] Edmondson et al., (2008) regard the concept of team reflexivity as a stream of research related to team learning in their literature review.

learnt. However, findings from the three cases point to the importance of distinguishing boundary spanning from learning and regard them as two separate concepts.

This necessity to share and discuss externally gained information from boundary spanning so that team learning occurs is in compliance with recent discussions on the distinction between 1) individual learning in a team context and 2) team learning. In a literature review on group learning, Wilson et al. (2007) claimed in the Academy of Management Review: "Some treatments of group learning confuse levels of analysis by not distinguishing 'individual learning in the context of groups' from 'group-level learning'. What we mean by this is that individuals can learn within the context of a group, and their learning may improve the group's performance, but it is still individual learning unless shared by members of the group." (Wilson et al., 2007:1042) Hence, the facilitative character of boundary spanning on the reflective part of learning goes beyond Wong's (2004) concept of external learning. Although Wong (2004) regards scouting as a synonym for external learning, this thesis stresses the importance of distinguishing these two concepts as 1) a particular leadership activity (Burke et al., 2006; Edmondson, 2003; Yukl, 2010), and 2) team learning (Edmondson, 2002). This is because individually gained external insights often need to be shared and discussed so that the team can profit as a whole from externally gained knowledge and not solely a single team member in the context of a group (Wilson et al., 2007), as this would not count as team learning in Wilson et al.'s (2007) understanding of team learning.

8.2.1 Complementary Effects of Leadership Substances on Team Learning

Findings from the cases showed that each of the three leadership substances primarily supported reflection or action. In particular, **relations-oriented** leadership activities formed the basis for learning to occur through the creation of a friendly environment. Such a climate allowed team members to ask questions openly and admit problems in order to gain help from the others, constituting activities in the reflection part of learning. The change perspective, particularly intellectual stimulation, encouraged everyone in the team to think about the point in question and often led to a reframing of previous assumptions and ideas. Together with the relations substance, it stimulated the reflection part of learning. **Task-oriented** behavior tended to focus more on the action

part of learning, guaranteeing that collectively gained insights were really implemented. In sum, teams characterized by engaging in all three substances of leadership were also shown to engage in complete learning cycles, including reflection and action. The following figure depicts the complementary effects of task, relations and change substances of leadership on team learning.
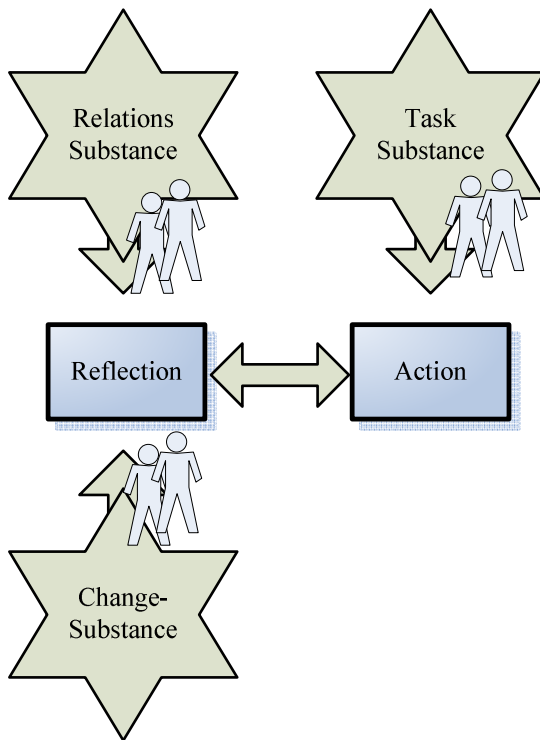
Figure 24: Complementary Effects of Leadership Substances on Team Learning

The few existing studies which deal with the link between leadership and team learning focus only on a single leadership aspect, namely on the task, relations **or** change dimension (e.g. Edmondson, 1999, 2002; Schippers et al., 2008), although in Yukl's (2010) understanding effective leadership is based on the parallel engagement of all three.

Studying the role of leadership in team learning from just one aspect of leadership only provides restricted insights. The following example is intended to depict this: Let us assume I had only investigated the role of change orientation, in particular intellectual stimulation in team learning. I would perhaps have found a similar positive influence of intellectual stimulation on a team's reflection, as seen in Radar or BPIS, but I would not have found out **what had stimulated the team to act on gained insights**, although the

action part of learning is of the same level of importance as reflection in order to sustain collective learning cycles.

Hence, with these research findings from the three cases, I contribute to the rather rare literature on the role of leadership in team learning (Berson et al., 2006; Burke et al., 2006, Edmondson, 1999) in two perspectives: First, by looking inside each of the three substances of leadership, I contribute to the literature by investigating in-depth knowledge on the relation of particular leadership activities to team learning. Second, as I have not restricted my view of leadership to any single activity of the task, relation or change dimension, as mainly done in recent studies (Edmondson, 1999), I have contributed to the literature by showing the complete picture of leadership when studying team learning. Findings relating to the complementary character of leadership substances on team learning also stress the importance of studying all three substances when investigating team learning.

For this reason, in future research scholars should preferably take a complete leadership picture into account when studying learning at the team level of analysis, as done in this research. With these findings, I am therefore laying the foundation for a contribution to the scarce existing research on the role of leadership behaviors in team learning (Berson et al., 2006, Burke et al., 2006, Edmondson et al., 2008) by taking Yukl's (2010) understanding of effective leadership into consideration.

8.3   Practical Implications

Besides the theoretical contributions to the literature on team leadership and learning, this thesis also provides practical implications for the organization, its managers and its members. In the following, the practical implications specified are directed first at leadership and then at learning in teams.

First, knowledge-intensive firms should encourage leadership stemming from the team parallel to the traditional present top-down approaches. Organizations should formulate and communicate their expectations to organizational members regarding themselves and their colleagues as leaders of their projects instead of relying on project supervisors

for project leadership. It would be important to anchor such expectations in the firm's culture by highlighting the beliefs and values of high collaboration, everybody's responsibility for the organization and its embedded projects, and empowerment to facilitate shared leadership emergence in project teams.

Second, an effective way to minimize organization-wide power differences among organizational members - a precondition for shared leadership emergence (Carson et al., 2007; Kirkman & Rosen, 1999) - became evident to me in the case of the T&S institute with its specific organizational design. In this case, although project leaders were defined, these leaders were assigned in parallel as regular team members to other projects which, in turn, were led by someone else. Hence, project leaders often fulfilled multiple roles, as they often functioned as a project leader and as a regular team mate at the same time, although in different projects at the T&S institute.

Third, project leaders also play a fundamental role in enhancing and amplifying shared leadership in organizations. First of all, leaders need to accept, and also to support and motivate, the process of including their official subordinates in the leadership process, contrary to the classical top-down image of the heroic leader (Locke, 2003). Without the project leader's support, and the more encouragement and expectation setting of regarding him and members as co-fellows, shared leadership cannot emerge. Further, when there is an officially designated project leader, it is important to minimize and manage power differences, not only between the supervisor and the members as just discussed, but also between team members.

Fourth, my results indicate specific leadership activities engaged in either by the officially designated team leader or by team members which, in total, build up shared leadership. Since most of the leadership seminars today still target executive staff, the derived consequence would be to open up such leadership training to a broader audience. First of all, the HR training section should again stress the expectations for mutual leadership and present some best-practice teams that have shared their leadership within the organization. Based on best-practice examples, the trainers could additionally analyze which leadership activities would be important to effective team functioning by taking the team's task and context into consideration.

As seen in the three cases, the leadership repertoire of team members requires awareness of the three substances of leadership, namely task, relations and change. Trainers in leadership skills should develop the team and increase members' awareness of basic project management skills, including setting team goals, monitoring the progress of a team and clarifying each member's duties. The task dimension of leadership can be supported by an IT project management system in which the project goal and its milestones are determined and members' tasks for the next meeting are traceable. Training in team building skills should be offered, in particular for teams that have been newly formed. And, just as important, when teams engage in non-routine tasks, it is crucial to increase members' awareness of change and their consciousness of insights coming from outside the team's boundaries. Additionally, as seen in our cases, questioning each other's assumptions needs to be learnt in order to understand that such intellectual stimulation is directed at enhancing the understanding of and insights into the project task and is not aimed at questioning members' personality and their capabilities.

Fifth, in terms of practical implications for team learning, the successful cases showed that learning in teams takes time and acts as a precondition for learning to occur. However, the unsuccessful team focused purely on doing something and did not take the time to reflect on their project. In present-day organizations, it can often be observed that the focus in teams is on carrying out and performing the team's task, and very little time is given to the team spending time on reflection, as time is regarded as a limited resource (Kasl et al., 1997). Moreover, when taking this costly resource of time into consideration, it is important for teams to take the time to collectively debate their goals, ideas and procedures regarding how to proceed in the project. The Radar team, for example, took one day off for a kick-off meeting outside the T&S organization and debated and brainstormed on the project. And in regular meetings throughout Radar's life span, time was not perceived as a rare resource. In contrast, the failure team tried to conduct the project on the side, during their breaks: There was no time allotted to intensive project discussions. Generally speaking, project managers should take care that their team does not rush from fulfilling one project milestone to the next. It is important for the project leader to provide a kind of 'slack' to the project. In doing so, the project leader acts as a role model, meaning that it is of the utmost importance that a

project leader also dedicates his time to the project and does not only expect this behavior from his project mates.

Sixth, besides the enhancive character of shared leadership roles on team learning suggested in this thesis, other ways to more directly stimulate a team's reflection part of learning may also be relevant to practitioners. On the one hand, teams could be trained in terms of team communication skills, learning in particular to build on each other's ideas in the form of absorbing relevant information from one another, or listening to each other. This is contrary to what the failure case experienced to which members contributed with some comments, but these comments were rarely based on each other in order to build up a common project idea. Besides communication training, creativity skill training should also be provided to enhance team members' capabilities for generating ideas. Workshops at which creativity techniques, such as brainstorming, are trained and applied should be provided to teams in modern organizations.

8.4 Limitations and Future Research

The results of this study represent a first step towards understanding the relationship between shared leadership and team learning. At the same time, however, it has some limitations as well as giving rise to future research possibilities.

The first limitation of this thesis concerns the methodology I have chosen for understanding the role of shared leadership in team learning. The findings of this thesis are based on a qualitative methodology (Yin, 2003), though limiting the generalizability to teams other than those investigated in this thesis. Despite the fact that this exploratory in-depth research method provided me with the opportunity to understand the emergence and development of team leadership and learning (Yukl, 2010), the relationships between both concepts were identified rather than tested. Consequently, a future research option results from the theory building approach taken to understand and analyze the relationships. Hence, relationships between leadership activities and reflection and action are worth testing systematically with the aid of quantitative methodologies in future research.

Second, I studied three teams that were involved in real consulting assignments: Two of them were made up of business students from a graduate class who were involved in an actual business project for a medium-sized company, and the third consulting team was from a research center and had the task of advising the government. All three teams worked part-time on these projects and were in charge of other assignments in parallel. As a result, these teams were not able to work full-time on the observed projects. Shared leadership might, however, emerge and develop differently in a context in which team members worked full-time on projects (Carson et al., 2007). For future research, I suggest studying the emergence of shared leadership in full-time project teams. It would be interesting to observe differences between teams in one organization that dedicate all their members' time to the project in comparison to those that only worked part-time on the project, for instance, for specific organizational initiatives. Additionally, a further fruitful research pathway in this context would be to differentiate shared leadership development in full-time project teams from teams that are newly formed and include members who do not know each other at the beginning, and team projects in which members are acquainted from previous projects.

Third, a closely related future research option might be inferred from the task and the team's context. Although all three teams were involved in real consulting tasks, none of them were embedded in a classical hierarchical organization in which team members held various hierarchical titles, from junior consultant and consultant to senior consultants, project managers and partners of the consultancy (Menden, 2010). In our three cases, hierarchical differences were either not present or were managed by the project manager and embedded in organizational culture and design. As Carson et al. (2007) have also studied shared leadership in MBA teams which were involved in a real consulting case, it would now be interesting to take the next step of analyzing the possibility and occurrence of shared leadership in the consulting business which, by its very nature, is characterized by an extremely hierarchical power structure. A predictor of shared leadership that apparently occurs in consulting firms might be team empowerment (Ensley et al., 2006; Kirkman & Rosen, 1999). It would be interesting to study the impact of team empowerment - the presence vs. absence of it - on shared leadership emergence in consulting firms.

Fourth, again related to a boundary condition for shared leadership emergence, this study did not take the influence of the national culture into consideration. National cultures are based on a set of values and basic assumptions that explain people's behavior in different countries and regions. In my study, I did not take these national cultural assumptions, particularly the aspect of individualism versus collectivism or power distance (Hofstede, 1990), into account when analyzing leadership and learning. This was due to two main reasons: Firstly, although the student teams were located at a Spanish business school, most of the team mates were originally from all over Europe and had come to Spain a few days previously. The teams were consequently not representatives of the Spanish culture. Secondly, the Radar team was located in Germany, though embedded in a research center which, by its very nature and organizational design, called for more autonomous working styles. For future research it would, however, be interesting to understand the impact of the national culture on the emergence of shared leadership development in organizational teams. It may be more likely that a national culture characterized by low power distance and collectivism fosters shared leadership in teams (Carson et al., 2007).

Sixth, a further future research possibility emerges from the development character of shared leadership. In my success cases, I could identify a gradual increase of co-leaders in the leadership process. The failure case showed a kind of rotation of a single leadership role among team members. The reason for such a shift in the leader role was the team's dissatisfaction with its functioning and performance. There may have been other motives for such a shift which would explain the nature of shared leadership development from a rotating point of view, a particular field of research which needs more future dedication. Reasons for such a shift might be the structure of the project, for instance that progress in the project phase would inherently induce a change in the leader position. Another motive for such a shift could be the required leadership skills and capabilities required by the leader at a certain phase of the team's project life span in order to adequately perform this role. In-depth studies are needed to better understand the concept of shared leadership from a rotating point of view.

Seventh, another limitation of my thesis results from the fact that I studied teams with shared leadership formation yet no teams with vertical leadership which would have

given me the opportunity to compare both leadership forms with each other. The reasons for this approach were twofold: First, due to the limited scope of a PhD thesis and the inherently required focus on the studied phenomenon, I decided to adhere to a single form of leadership in order to gain more insights into a new emerging theme in the literature of leadership rather than studying a well-known concept of vertical team leadership (Yukl, 2010). Second, I followed the student teams right from the very beginning of their projects and, for this reason, it was impossible to know in advance how the leadership would develop in each team. As a trained qualitative researcher, I was therefore open to such concepts that appealed to my interest which, in this case, was the role of shared leadership in team learning. For future research it would, however, be interesting to compare teams with a) vertical and b) shared leadership and the role of each in team learning. It would be fruitful to find out whether leadership activities performed by a single team leader are similar as regards reflection and / or action. And then, as importantly, whether a single leader also stimulates this kind of interplay between action and reflection and vice-versa, as observed in the successful cases where, for instance, monitoring activities primarily stimulated the action part of learning and then, in a subsequent step, the reflection part. Hence, future research should take into consideration this idea of comparing shared leadership with vertical leadership and the role of each in team learning.

9   Concluding Remarks

Leadership is considered crucial for enabling organizational performance (Bass, 1995; Yukl, 2010). It has been shown to increase performance indicators such as sales, profit margin, market share, productivity or innovation (Gordon & Yukl, 2002; Rowe et al., 2005; Yukl, 2010). Leadership not only impacts on such hard performance indicators but has also been shown to enhance followers' attitudes, perceptions and beliefs (Gordon & Yukl, 2002). Hence, a lack of leadership evidently has a negative influence on followers' attitudes, leading to e.g. absenteeism, work slowdown or willful sabotage of work facilities (Amabile et al., 2004; Yukl, 2010).

Innovative, creative knowledge work and other organizational activities by employees are typically organized in applying team structures (Brown & Eisenhardt, 1995; Cohen & Bailey, 1997; Hargadon & Bechky, 2006). Not only leadership at the organizational level has been identified as a critical ingredient for organizational effectiveness (Vera & Crossan, 2004). Leadership at the team level of analysis in diverse kinds of teams (Burke et al., 2006; Levi, 200) and particularly in teams working on creative, non-routine tasks, has been shown to enhance the teams' performance (Amabile & Khaire, 2008; Amabile et al., 2004). When applying the behavioral stream of literature on leadership (Bowditch et al., 2008), effective team leaders are those engaging in activities directed at the substance of team's task, relations and change (Yukl, 2010) which in turn facilitate group processes and have been shown to positively impact diverse performance outcomes (Burke et al., 2006).

Team learning as a group process has been identified as a crucial enabler for teams' innovativeness and effectiveness (Bresman, 2007; Sarin & McDermott, 2004; Wong, 2004). A team engaging in learning processes creates new knowledge for team members, for itself as a system or for externals in and outside the organization (Kasl et al., 1997). Recent team learning conceptualizations do not only focus on the process of generating team's insights (Argote et al., 2001; Edmondson, 2002; Gibson & Vermeulen, 2003). Edmondson (2002), for example, also highlights - besides reflection - a team's need to engage in activities which implement gained insights following reflection. In other words, in order to engage in complete learning cycles, teams need to

engage in 1) reflection in order to increase the team's insights, and 2) action to implement such gained insights (Edmondson, 2002).

Research has, however, shown that teams often fail to learn and tend to behave in habitual ways (Kayes, 2004). Failure in learning might result from slackness in reflection and / or reluctance to apply collectively gained insights (Edmondson, 2002). Flaws in learning at the team level negatively impact the organizational capacity to learn (Edmonson, 2002; Senge, 1990) and have even been shown to shut down the performance of a whole organization (Kayes, 2004). Hence, it is important to know what enables teams to learn (Schippers et al., 2008).

As team learning is a socially based occurrence, I decided to study factors influencing team members' interaction in order to better understand the factors enabling team learning. Team learning not only takes place in a social context which shapes team learning, as learning is predicated upon processes requiring intense personal interactions. A team's task and its framing also shape a team's capacity to learn. As the team leader is the person who impacts both dimensions - the social context and the task dimension (Yukl, 1989) - I decided to link leadership and team learning as both task and social embeddedness are essential ingredients of engaging in team learning.

As team learning is especially important to teams engaging in creative non-routine tasks (Bunderson & Sctcliffe, 2003; Edmondson, 1999), I focused on a leadership tradition, namely shared leadership, which is particularly suitable for teams in charge of creative, complex and non-routine tasks (Pearce, 2004). The first reason for shared leadership results from the fact that traditional vertical leaders are less likely to engage in all necessary leadership functions due to the ambiguity and complexity of such projects (Carson et al., 2007; Cox et al., 2003). In particular, such a single leader is at a knowledge disadvantage, because others in the team are more likely to be experts in different fields although they are led by the vertical leader in the traditional leadership understanding (Day et al., 2004). In contrast, in a shared leadership approach, team members have the chance to shape the project in accordance with their expertise and skills (Cox et al., 2003; Carson et al., 2007). A bottom-up force also stresses the importance of integrating team members in the leadership process. Team members

engaged in co-leadership feel motivated as especially knowledge workers are seeking for autonomy on how to best apply their knowledge and skills (Pearce & Conger, 2003; DeNisti et al., 2003).

In order to understand the role of shared leadership in team learning, I moved a step backward and first of all empirically explored the construct of shared leadership. Following my first research question on how leadership activities are shared, I contribute to the literature on the nature of shared leadership. I have applied the behavioral leadership understanding of Yukl (2010) who regards effective leadership as an interplay of performed task, relations and change activities. By observing three teams throughout their projects, I looked at how team members distributed leadership activities pertaining to Yukl's (2010) proposed activities of leadership of task, relations and change substance. In the successful teams, I found out that the officially designated team leader and most of the team members engaged simultaneously in leadership activities related to task, relations and change. Only the activity of clarifying roles and objectives pertaining to the task substance of leadership was identified as necessarily being in the hand of the official designated team leader. The other activities of task, relations and change were shared among team members and were either performed collectively or individually by different team members. Contrary to the successful teams, in the failure case, only the officially designated team leader was engaged in leadership and only focused on very general task-oriented activities, including monitoring the rather individual oriented engagement by the rest of the team. The team's low engagement of task leadership again bore negatively on the team's whole project. Team members became frustrated and conflicts among members emerged which were not resolved either by the leader or team members. Therefore, no relations-oriented activities were observed that would have built up relations between team members. Additionally, only very few change oriented activities were performed which, again, pushed the team into a kind of downward spiral effect, making it much more difficult for the team to change its functioning.

As teams are dynamic constructs which change their functioning over their project life (Day et al., 2004; Gersick, 1988; Ilgen et al., 2005), I also observed the changes in leadership distribution over project time when exploring the nature of shared leadership.

I have contributed to the literature by identifying two different forms of shared leadership development: a) an incremental emergence of team members in leadership, parallel to the presence of a formally designated leader, and b) a rotation of the single leadership function among team members over time. Although the team in question shifted this position among each other, the leader in charge at the time acted more as a superior and engaged in most of the leadership activities.

Having explored the nature of shared leadership, my second research purpose lay in understanding the role of shared leadership activities in team learning and thus contributing to the literature on interrelations between leadership and team learning (Berson et al., 2006; Burke et al., 2006; Edmondson, 1999). I have contributed to this literature in two aspects: firstly, by researching interrelations between each of the three leadership substances and team learning, I provide in-depth knowledge, in particular concerning the link between the task and change substance affecting reflection and action as these links have not been studied before (Edmondson et al., 2008). Relations and change substance primarily support the reflection part of learning, whereas the task substance of leadership basically enhances the action part of learning. Secondly, not only did I study these three leadership categories on team learning individually, but I also provided insights into the complementary character of these three leadership substances as regards team learning. Empirical findings show that in order to engage in successful learning cycles of reflection and action, a team needs to engage in leadership activities of task, relations and change.

Although no final statement can be given as to whether shared leadership is more effective in team learning than vertical leadership, this doctoral research should be regarded as a foundation on which future researchers can build. As this qualitative research project identifies the interrelations between the two concepts more than testing them, it would be fruitful in a further quantitative survey research to compare teams with a permanent single leader and teams with distributed leadership by observing how the leadership activities engaged in by both comparison groups affect team learning.

All in all, I hope that this doctoral research project will arouse other subsequent research fellows' interest in focusing not only on the single manager, but also in opening the perspective to the whole team when discussing the life of teams.

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11 Appendix

11.1 Scientific Output during the MRes and PhD Research Project Period

11.1.1 Scientific Conferences and Presentations

Presentations at PhD Workshops:

Hildebrand, D. 2007. *Presentation of PhD Proposal*. Knowledge Management. EUDOKMA Course. Copenhagen Business School, Copenhagen.

Hildebrand, D. 2007. *Presentation of PhD Proposal*. Innovation in the Creative Economy. EUDOKMA Course. Copenhagen Business School, Copenhagen.

Hildebrand, D. 2007. *Presentation of PhD Proposal*. 17th European Doctoral Summer School on Technology Management (EIASM) Innovation Interfaces, University of Twente, Enschede.

Hildebrand, D. 2008. *Presentation of PhD Proposal*. PhD Workshop of the OLKC 2008. Danish School of Education, University of Aarhus, Copenhagen Business School, Copenhagen.

Hildebrand, D. 2009. *Presentation of PhD Proposal*. PhD workshop of the EGOS 2009. ESADE Business School. Barcelona.

Scientific Conferences:

Dröge, H., & Hildebrand, D. 2007. *The Use of Conversational Strategies for Overcoming Change Barriers in the Transition to Process Orientation*. 2nd Conference on Rhetoric and Narratives in Management Research (RNMR07), Barcelona.

Dröge, H., Hildebrand, D., & Heras, M. A. 2008. *Innovation in Services: Present Findings and Future Pathways.* SERVSIG International Research Conference, University of Liverpool, Liverpool. - Best Paper Award -

Dröge, H., & Hildebrand, D. 2009. *Exploring Patterns of External Learning in Ambidextrous Organizations*. EURAM Conference, Liverpool, England. - Best Paper Award -

Hildebrand, D., Trullen, J., & Sauquet, A. 2008. *Playing Safe, Playing Deep.* The Organizational Learning, Knowledge and Capabilities Conference (OLKC), Copenhagen Business School, Copenhagen.

Hildebrand, D., Dröge, H., & Marsick, V. 2010. *The Role of Shared Leadership in Team Learning.* The Organizational Learning, Knowledge and Capabilities Conference

OLKC, Boston, USA.

11.1.2 Journal and Book Chapter Publications

Dröge, H., Hildebrand, D., & Heras, M. 2009. Innovation in Services. Present Findings, and Future Pathways. *International Journal of Service Industry Management*, 20: 131-155. (ISI Journal)

Dröge, H., & Hildebrand, D. 2009. Book Review: Services Science: Fundamentals, Challenges and Future Developments. *International Journal of Operations and Production Management*, Vol. 29: 317-318. (ISI Journal)

Jaspers. W., & Hildebrand, D. 2007. Wissensmanagement effizient einführen. *IO New Management*,9: 33-36.

Hildebrand, D., & Dröge, H. 2008. Knowledge Performance Measurement. In: Jaspers, W., Fischer, G. (Hrsg.): *Wissensmanagement heute*, 35-63. München. Oldenbourg Verlag.

11.1.3 Awards

05 / 2007	"Förderpreis des Arbeitgeber Verbandes Ruhr / Lenne e.V." Award from the German Employer Association (Arbeitgeberverband e.V.) for the best Diploma-thesis in the academic year 2006.
06 / 2008	"The Christopher Lovelock Prize" granted by the International Journal of Service Industry Management (ISI IF: 0.45) for the Best Conference Paper at SERVSIG International Research Conference, University of Liverpool, UK. Name of the Paper: "Innovation in Services: Present Findings and Future Pathways".
10 / 2009	Best Conference Paper, Track Innovation. European Academy of Management Conference, Liverpool, England.

11.1.4 Scholarships

12 / 2006 – 12 / 2007	PhD Grant of the Catalan Government / European Union Social Fund "Beca FI" for the 1st PhD year.
08 / 2007	RADMA Grant awarded by "R&D Management Journal" for presenting a paper at the "17th European Doctoral Summer School on Technology Management (EIASM)", University of Twente, Enschede.

01 / 2008 – 12 / 2010   Full PhD Grant of the Catalan Government / European
                               Union Social Fund "Beca FI" granted from 2008- 2010
                               PhD period.

11.2 Data Collection

11.2.1 Introductory Remarks to CEMS Teams

E-mail sent to the CEMS project teams:

Dear all,

First of all, I would like to thank you for your collaboration.

As agreed today in our kick-off meeting, I need some support from you regarding your ongoing team activities in the CEMS business project. It would be perfect if you could update me regarding your ongoing team activities in your CEMS business project.

My plans are to be in your official group meetings as often as possible. As you might remember, I do this research project for my PhD thesis and all information and insights I will gain and you will give me will be kept strictly confidential. In the final stage of the CEMS business project, I would like to ask you for an interview with each of you about your experiences and your challenges working in this Business Project.

What I would like to ask you:

- To update me about your team meetings and meetings with your tutor, so that I can join you to these meetings.
- Additionally, I would like to ask you to copy me in your project-related e-mails (dagmar.hildebrand@alumni.esade.edu)
- To be part of your team!

Have you already scheduled a meeting for Thursday (universe-meeting) or Friday (group meeting)?

My contact details are:
E-Mail: Dagmar.Hildebrand@alumni.esade.edu
Cell phone: 676 455 631

See you tomorrow,
Dagmar

11.2.2 Sample of Researcher's Diary

Operations meeting 21:20 – 23:00 (Restaurant at Gracia: February 13th of March)

After the information transfer meeting, the group wanted to talk about the organization of the group itself. The group, and in particular Nina, was really frustrated as the other group (old operations group) had questioned their approach with really detailed questions. The group, in particular Nina and Thomas, thought that the prior OP group would think they were totally unorganized and unstructured.

The group went into a nearby restaurant. First of all, we looked through the menu and ordered our food. After ordering, Nina started discussing the problems within the group. She said that she felt really ashamed to hand in such an unstructured report to the professor. Additionally, she raised the topic of a new leadership position within the team as she would have to spend more time on her job application than on the CEMS project. Nina had an authority problem within the group and referred to it saying, "I sent deadlines, you have to do what I say". Thomas agreed with her and said that he felt that the group was not taking this report seriously enough because the group maybe thought the report would not be handed in to the winery but only to the professor. Additionally, he said he thought the group members were thinking: "Hey, Nina will manage everything. She'll fix it all for us!" Nina thought that they might have a communication problem. She continued, saying that although they did not have any personal relationship issues between team members, they would have to follow what the group leader was saying. For her, this might also have been a problem as they saw each other as friends. She exemplified this with the following: "Oh, it's OK if I don't send the stuff today but tomorrow, because it is only Thomas – a good friend". Nobody responded to the e-mails Nina had sent out during the weekend. Thomas also agreed with her on these points as he sometimes sent text messages to reach the people when they did not respond on their emails. Vladimir agreed on these points too and said that they would have to learn from their mistakes and that he had doubted before the meeting whether they would be able to talk so openly about these issues.

Nina claimed that she would have to spend more time on her job application in the future. As a result, she could only continue in the leadership position if she could dedicate less time to that. Nina said that Maria had also offered the team to take over the position. Vladimir was also eager to do it and said, "I am really passionate to do it. I know we are a good group". Thomas and Nina were a little bit skeptical about the "good group". Thomas said: "We will need to reach new standards of quality. We need a higher level of quality. In comparison to the old operations group, our report really looks like patchwork." Nina also said that she was not satisfied with the job the team was doing. She said that she had done the job on her own the previous weekend. Nobody had really helped her. Thomas said at this point that he had been shocked the weekend before because when Nina sent an e-mail with the subject "we have a problem" Thomas had been the first group member who answered although he was in Hamburg.

Vladimir again said that the group should learn from their mistakes and claimed that he would really like to take over the leadership function. Nina said that one of the main criteria for the leadership position was that the person had constant access to the internet and said to Vladimir: "You do not have access to the internet!!" Thomas agreed with Nina's statement, saying, "When you are doing a universal project you need to be available 24 hours. For example, Peter recently sent me an e-mail in the night". Vladimir said that he had called the internet provider and this guy only needed one more small part, but that the internet would be working in the next few days. Additionally, Thomas was skeptical because Vladimir is married. Thomas told Vladimir, "We would probably meet on Sundays and I do not want you, Vladimir, to get into any trouble with your wife when we meet us at the weekend." Vladimir said that he would definitely get no problems with his wife. "I never had this kind of problems. I do not go out. I am only at home" (Vladimir).

Nina added that the leader had to be really structured and had to be strong at the group representatives' meetings. Nina said, "That is really challenging. And, at the end of the meeting, you as the leader have to write 'we need this, this and this'," said Nina. Additionally, Thomas said, "After each meeting you have to write a reminder / debriefing of the meeting with the next steps." Vladimir agreed and claimed, "Yes,

debriefings and reminders are really important". Thomas said: "We have always the problem to agree when to meet. It is nearly impossible. We have hardly ever managed to meet as a whole team! Xavier has too many courses. Additionally, he did not send his schedule of times when we can meet. He has too many courses." Maria also said that she had to work at the same time and said in the next sentence that she might not have the time to take over the leadership function.

Nina wanted to summarize the main problems of the group which for her were 1) low structure, 2) low respect for each other regarding sending the task on time, and 3) low communication. The goal for the phase was to increase the performance of the group.

Nina asked Vladimir: "Would you have time on Wednesday evening at 9 o'clock to work on the project? Do you have time for the leadership function?"

Thomas said, "I could also do it if I contributed less to the content of the project". Nina said that the group needed Thomas and his content. Additionally, Thomas' idea was to share the function with Vladimir, doing it half and half. Nina disagreed with that and said that it would be much better to have one person in charge at any one point in time. Vladimir said that he wanted to try it. Additionally, Thomas said that they would have to work more and put in some extra work. He was ashamed at what the other universe groups thought about their way of working. He continued by saying that Peter had asked to meet him in person to talk about what had happened in the marketing team. "The report was only patchwork. Each member worked individually," acknowledged Thomas. Additionally, he said to Vladimir, "It was good you offered to put all the written stuff in one document. But in comparison to the operations report, it was only patchwork. The operations group has a really organized, well structured report with at least a content list and a cover page." And Thomas went on, "I had expected from you - Vladimir - that you would maybe also come up with that". Again Nina said that she was not satisfied with the task they did in the first phase.

They discussed the time they would meet to go through the next steps and agreed to meet at Sunday at 8 o'clock. Vladimir said he would come up with an agenda, but then asked what he should include in the agenda, "The next steps of the project?" Nina and

Thomas said, yes, that was supposed to be in an agenda. Additionally, they would continue to talk about the leadership function when Xavier attended the meeting as well.

E-Mail communication after the meeting:

Dear all!

I hope you've had the chance to recharge your batteries! It's good to have an easy weekend in terms of the BP, but soon there will be a lot of work again, and we have to try to prepare ourselves for it as good as possible!

Thanks Vladimir for the outline of the meeting tomorrow. I guess apart from the content related things we should also dedicate 30 minutes to the structuring of our second phase, the outline and organization of our meetings and some other administrative issues.

What's next:

We should meet again to prepare ourselves for the group leader meeting on monday, which Vladimir and I will attend at 1pm.

It is therefore also necessary that we meet before monday. Sunday seems to be the best time for everybody, and since Nina is on a daytrip, we have to do it in the evening.

We all know that it's not the best time for you, Xavier, but it would be great if you could make it because the start of a new phase is always crucial and it was already unfortunate that we weren't able to schedule a meeting with the operations guys that everybody could attend.

I would propose to meet for a dinner meeting. Either at someone's place or at a restaurant. I would gladly cook something at my place if that's of any interest.

Proposed time: 8pm.

Regarding group leadership: Vladimir will take over Nina's part. I will join him for the team leader meeting to get an idea of what the others are expecting from us. BTW: anybody is welcome to join us. But thank you Vladimir for sacrificing yourself ;-)

Ok, that's it from my side for now. Let's schedule sunday's meeting!

Again my proposal: 8pm my place.

Have a great weekend and see you tomorrow,

Thomas

11.3 Data Analysis

11.3.1 Preliminary Code List

<u>Main Theme 1: Leadership</u>

Sub theme: **1.1 Formally designed leader position**
                                     1.1.1 Task of the formal leader
Sub theme: **1.2 Co-leaders**
                                     1.2.1 Emergence
                                     1.2.2 Process
Sub theme: **1.3 Leadership activities**
                                     1.3.1 Task substance
                1.3.1.1 Planning
                        1.3.1.1.1 Individually
                        1.3.1.1.2 Shared
                1.3.1.2 Monitoring
                        1.3.1.1.1 Individually
                        1.3.1.1.2 Shared
                1.3.1.3 Clarifying roles and objectives
                        1.3.1.1.1 Individually
                        1.3.1.1.2 Shared
                        1.3.2 Relations substance
                1.3.2.1 Building member's relationships
                        1.3.1.1.1 Individually
                        1.3.1.1.2 Shared
                1.3.2.2 Maintaining member's relationships
                        1.3.1.1.1 Individually
                        1.3.1.1.2 Shared
                        1.3.2.3 Change substance
                1.3.2.3.1 Intellectual stimulation
                        1.3.1.1.1 Individually
                        1.3.1.1.2 Shared
                1.3.2.3.2 Boundary spanning
                        1.3.1.1.1 Individually
                        1.3.1.1.2 Shared

<u>Main Theme 2: Team learning</u>

Sub theme: **2.1 Reflection**
                                     2.1.1 Sharing information within the team
                                     2.1.2 Seeking feedback about team performance
                                     2.1.3 Discussing errors or problems
                             2.2 Action
                                     2.2.1 Making a change
                                     2.2.2 Finalizing a plan
                                     2.2.3 Transferring new knowledge to others

Main Theme 3: Links between leadership activities and team learning

Sub Theme: **3.1 Task substance and team learning**
          3.1.1 Planning and reflection
          3.1.2 Planning and action
          3.1.3 Monitoring and reflection
          3.1.3 Monitoring and action
          3.1.4 Clarifying roles and objectives and reflection
          3.1.5 Clarifying roles and objectives and action
        3.2 Relations substance and team learning
          3.2.1 Building member's relationships and reflection
          3.2.2 Building member's relationships and action
          3.2.3 Maintaining member's relationships and reflection
          3.2.4 Maintaining member's relationships and action
        3.3 Change substance and team learning
          3.3.1 Intellectual stimulation and reflection
          3.3.1 Intellectual stimulation and action
          3.3.3 Boundary spanning and reflection
          3.3.3 Boundary spanning and action

Main Theme 4: Team

Sub theme: **4.1 Size**
Sub theme: **4.2 Composition of the team**
          4.2.1 Gender
          4.2.2 Age
          4.2.3 Education
          4.2.4 Status
Sub theme: **4.3 Task**
          4.3.1 Project assignment
          4.3.2 Complexity
          4.3.3 Creativity
          4.3.4 Interdependent
Sub theme   **4.4 Challenges**
          4.4.1 Task-oriented challenges
          4.4.2 Free-riding
          4.4.3 Conflicts
Sub theme   **4.5 History**
Sub theme   **4.6 Outputs**
          4.6.1 Productivity
            4.6.1.1 Qualitative
            4.6.1.2 Quantitative

Main Theme 5: Team's context

Sub theme: **5.1 Purpose of the organization**
Sub theme: **5.2 Structure**
Sub theme: **5.3 Organizational culture**
Sub theme: **5.3. Reward system**

11.3.2 Final Code List

<u>Main Theme 1: Leadership</u>

Sub theme: **1.1 Formally designed leader position**
                                        1.1.1 Task of the formal leader
Sub theme: **1.2 Co-leaders**
                                        1.2.1 Emergence
                                        1.2.2 Formation at different stages
Sub theme: **1.3 Leadership activities**
                                        1.3.1 Task substance
                                                    1.3.1.1 Planning
                                                                1.3.1.1.1 Individually
                                                                1.3.1.1.2 Shared
                                                    1.3.1.2 Monitoring
                                                                1.3.1.1.1 Individually
                                                                1.3.1.1.2 Shared
                                                    1.3.1.3 Clarifying roles and objectives
                                                                1.3.1.1.1 Individually
                                                                1.3.1.1.2 Shared
                                        1.3.2 Relations substance
                                                    1.3.2.1 Building member's relationships
                                                                1.3.1.1.1 Individually
                                                                1.3.1.1.2 Shared
                                                    1.3.2.2 Maintaining members' relationships
                                                                1.3.1.1.1 Individually
                                                                1.3.1.1.2 Shared
                                        1.3.2.3 Change substance
                                                    1.3.2.3.1 Intellectual stimulation
                                                                1.3.1.1.1 Individually
                                                                1.3.1.1.2 Shared
                                                    1.3.2.3.2 Boundary spanning
                                                                1.3.1.1.1 Individually
                                                                1.3.1.1.2 Shared

<u>Main Theme 2: Team learning</u>

Sub theme: **2.1 Reflection**
                                        2.1.1 Seeking help and feedback
                                        2.1.2 Giving help and feedback
                                        2.1.3 Reframing
                                    2.2 Action
                                        2.2.1 Codification
                                        2.2.2 Transferring new knowledge to others
                                        2.2.3 Making change and improvement

Main Theme 3: Links between leadership activities and team learning

Sub Theme: **3.1 Task substance and team learning**
         3.1.1 Planning and reflection
         3.1.2 Planning and action
         3.1.3 Monitoring and reflection
         3.1.3 Monitoring and action
         3.1.4 Clarifying roles and objectives and reflection
         3.1.5 Clarifying roles and objectives and action
     3.2 Relations substance and team learning
         3.2.1 Building member's relationships and reflection
         3.2.2 Building member's relationships and action
         3.2.3 Maintaining member's relationships and reflection
         3.2.4 Maintaining member's relationships and action
     3.3 Change substance and team learning
         3.3.1 Intellectual stimulation and reflection
         3.3.1 Intellectual stimulation and action
         3.3.3 Boundary spanning and reflection
         3.3.3 Boundary spanning and action

Main Theme 4: Team

Sub theme: **4.1 Size**
Sub theme: **4.2 Composition of the team**
         4.2.2 Age
         4.2.3 Education
         4.2.4 Status
Sub theme: **4.3 Task**
         4.3.1 Project assignment
         4.3.2 Complexity
         4.3.3 Creativity
         4.3.4 Interdependent
         4.4.5 Assigned time for the project
Sub theme   **4.4 Challenges**
         4.4.1 Task-oriented challenges
         4.4.2 Relational-oriented challenges
Sub theme   **4.5 History**
Sub theme   **4.6 Outputs**

Main Theme 5: Team's context

Sub theme: **5.1 Purpose of the organization**
Sub theme: **5.2 Structure**
Sub theme: **5.3 Organizational culture**