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Leading innovation in fast-growing firms: A multiple case study in the Internet industry

Master Thesis

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PREFACE

This thesis has been written to complete the Master of Business Administration program at the University of Twente and the Master of Innovation Management and Entrepreneurship program at the Technical University Berlin. The master thesis project started in February 2012 and has been accomplished in August 2012.

The multiple case studies were only possible by the cooperation of five German start-ups where founders and employees have been interviewed. I want to thank these participants of the study for their time, openness, interest and valuable insights to the topic of ambidextrous leadership in fast-growing start-ups. I strongly hope that the five companies and also other gazelle start-ups can benefit from the findings of this study.

Moreover, I want to thank Hin-Hey Chung and Jennifer Grant for creating first contact to three of the companies investigated, which was fundamental for the completion of this thesis.

I also highly appreciate the guidance and feedback of my first supervisor Klaasjan Visscher throughout the master thesis project. Especially for the scientific approach to conducting a multiple case study he gave valuable insights and I highly benefited of the frequent discussions concerning my current progress and next steps to be undertaken. Moreover, he gave feedback on written parts of the thesis and thereby helped to improve the overall quality of the final thesis. Thank you very much for the great supervision, proactive feedback and academic guidance.

In addition, several other persons have contributed to the quality of the master thesis. First of all, I want to thank Samuel Rogers for his detailed content-related feedback and native English speaker comments on expression, words and grammar. Secondly, thanks to Philip Schmidt and Damiano Albrecht for insightful weekly discussions, first aid with content and motivation related issues and the revision of my coding and feedback on the final thesis. Thirdly, thanks to my grandfather Manfred Hesse for English proof-reading and comments from a person that is not familiar with the general topic and hence able to give more objective and basic understanding remarks. Fourthly, I want to thank my sister Nora Seetge for assisting me with the tedious task of transcribing 18 interview files.

Furthermore, I want to thank my boyfriend Philipp Kühne who suffered from evening-lasting discussions about missing case participants, motivation, time, data clarity and most of all: pages.

Finally, a great thanks to my family who supported me financially and mentally throughout the years of study. Without them, this thesis and the study progress it stands for would not have been possible.

As you may see, this thesis in the end is the work of several organizations and persons that have contributed to it and I trust that it gives precious insights for those interested into the topics of leadership, innovation and gazelle firms.

ABSTRACT

The author analyses five case studies to show the extent and ways in which ambidextrous leadership is given shape in fast-growing start-ups. Starting point for these elaborations is the success trap firms oftentimes experience when growing rapidly. Ambidextrous leadership as one potential solution to this challenge is explored and found to be built upon two factors. These are the competences cognitive complexity and behavioral flexibility. Only working in close conjunction they are enabling ambidextrous leaders to apply appropriate behaviors in each distinct context. In addition, the study describes concrete behaviors encouraging either exploitation or exploration that have been shown by the investigated leaders. Ambidextrous leadership is not seen as an antecedent to organizational ambidexterity but the interrelations between the two different levels of ambidexterity are incorporated to the study design and analysis. Finally, the multiple case studies reveal that ambidextrous leadership is present in the context of gazelle start-ups not only in form of a single ambidextrous leaders but also jointly expressed by teams of founders.

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INTRODUCTION

The ability to balance several different styles, actions or strategies has long since intuitively been recognized as one key determinant of successful leaders.

Only during recent years this balancing ability has become recognized as a formal strength of leaders in organizational theories under the name ambidextrous leadership. The term ambidexterity relates back to the Latin words *ambo* 'both' and *dexter* 'right hand' describing persons that can use both hands equally well. Transferring the original meaning to a leadership context, ambidexterity describes the ability of leaders to balance the exploitation of current capabilities and the exploration of new ones. As described by O'Reilly & Tushman (2004), this balancing act is one of the most difficult organizational challenges and can be specifically incentivized by ambidextrous leaders.

Ambidextrous leaders have mainly been studied in a theoretical context that combines findings from different other leadership styles and Strategic Management dealing with organizational ambidexterity. To study the upcoming style in practice, rapidly-growing start-ups, the so-called gazelles, provide a very good framework. These companies operate in dynamic environments and experience rapidly changing business conditions. They most often have become successful due to a radically innovative idea enabling them to build a competitive advantage and customer base. Based on this early success, gazelle firms deal with a number of operational challenges like integrating numerous new employees into their organization or complying with extensive customer orders.

They tend to prefer exploiting the existing capabilities and products, thus neglecting the development of future ideas and long-term competitive advantage: a phenomenon called success trap or syndrome (Tushman, 1996). Being trapped in their current success, gazelles find it difficult to continuously adapt to changing market requirements and build an organization balancing both short-term development of existing products and long-term development of radically new ideas for the future. In order to be able to do so, they heavily rely on ambidextrous leaders (Rosing, Frese & Bausch, 2011). This is why these types of founders and managers are expected to be found especially in gazelle start-ups. This enables the author to study their behaviors and competencies giving shape to ambidextrous leadership in the multiple case-studies.

The thesis commences by explaining the overall research design, including the development and clarification of the research goal, the central question, research questions and the research strategy. These considerations on the research approach are the basis for the entire thesis. The second chapter develops the theoretical backgrounds on innovation, organizational ambidexterity and ambidextrous leadership. Building on this theoretical framework, one pilot case and five case-studies in fast-growing start-ups of the Internet industry are conducted and analyzed using within-case analysis and cross-case comparisons. The results from the case-studies are further discussed concerning conclusions, limitations, relevance and guidance for future research in the last chapter of the thesis. All important findings are subsequently summarized in the conclusion.

RESEARCH DESIGN

RESEARCH GOAL

Gazelle firms are important to the national economies as strong job and economic value creators (Acs, 2008; Henrekson & Johansson, 2009; March, 1991; Moreno & Casillas, 2000; Stangler, 2010). They are characterized by high levels of firm growth be it in terms of employment or sales (organic growth) or through acquisitions (Delmar, Davidsson & Gartner, 2003).

As a consequence of their fast growth, they find it difficult to balance exploitative and explorative innovation activities. The literature refers to this challenge as success or competency trap (Gupta, Smith & Shalley, 2006; Lubatkin, Simsek, Ling & Veiga, 2006; O'Reilly & Tushman, 2008; Raisch & Birkinshaw, 2008).

When investigating potential factors that might facilitate the maintenance of a balanced innovation portfolio, researchers found leadership to be of special importance (Gibson & Birkinshaw, 2004; Lin & McDonough III, 2011; Lubatkin et al., 2006; Raisch & Birkinshaw, 2008; W.K. Smith & Tushman, 2005; Un, 2010) The role of the leader in such a trade-off is described as being a negotiator between the conflicting demands of exploration and exploitation (Tushman, Smith & Binns, 2011).

The goal of this thesis is to explore what enables leaders of fast-growing firms to negotiate between these contradictory cues and what behaviors they exhibit to encourage either exploitation or exploration of their followers.

CENTRAL QUESTION AND KEY TERMS

Current literature states quite generally that ambidextrous leadership is an important factor for the balancing of innovation activities (Chen & Ling, 2010; Dover & Dierk, 2010; Lin & McDonough III, 2011; Vera & Crossan, 2004).

It also give first insights of what ambidextrous leadership might be composed of (Rosing et al., 2011, Bledow, Frese & Mueller, 2011; Probst, Raisch & Tushman, 2011). Nevertheless, the specific set of competences inherit to and behaviors exhibited by ambidextrous leaders has until now been discussed from a theoretical point of view without underlying practical data. The current approach is to do meta analyzes and literature reviews on various studies on different leadership styles and out of these analyzes gain insight on the potential functioning of ambidextrous leadership (cf. Rosing et al, 2011). No study, to the author's knowledge, has yet explored how ambidextrous leadership is given shape in practice.

The present research gives no deep insight to the specific competences that are essential for ambidextrous leaders. Although some authors name potential competences they derived from literature reviews (Bledow, Frese, Anderson, Erez & Farr, 2009; Bledow et al., 2011; Chen & Ling, 2010; Mumford, Zaccaro, Harding, Jacobs & Fleishman, 2000; O'Reilly & Tushman, 2008; Rosing et al., 2011; Smith, Binns & Tushman, 2010), no knowledge exists on their occurrence in practice

and how they interact which each other and external factors (Carmeli & Halevi, 2009; Raisch, Birkinshaw, Probst & Tushman, 2009; Rosing et al., 2011).

The same holds true for the specific behaviors that ambidextrous leaders might exhibit to encourage either exploration or exploitation at the follower level. Few researchers have made an attempt to derive lists of behaviors for either side. If doing so these proposed behaviors are developed based on other leadership styles like transformational leadership, transactional leadership, participative leadership or path-goal-theory (Rosing et al., 2011, Bledow et al., 2009, 2011; Carmeli & Halevi, 2009; Lin & McDonough III, 2011). The authors hence try to explain ambidextrous leadership with leadership styles that have a completely different context and have been developed to approach different business or psychological problems. Again, due to the mere listing of potential encouraging behaviors the understanding of interactions between them and the innovation process, situational or individual demands is missing.

Another important question yet not explored by the literature is in which context to find ambidextrous leaders in practice. Are there special types of business types or phases where ambidextrous leaders are essential to ensure continuous growth of a company and if so where do we find these contexts? Literature suggests that ambidextrous leaders might be crucial to ensure a balance of exploitation and exploration especially in times of fast company growth, leading to the potential conclusion that they are especially present in gazelle firms (Faems, Visscher & Lamers, 2011; Hölzl & Friesenbichler, 2007; Hölzl, 2009; Kollmann, Kuckertz & Stöckmann, 2009; Moreno & Casillas, 2007).

The central research question of this thesis incorporates the above-mentioned gaps in the academic literature to shed light on

TO WHAT EXTENT AND IN WHICH WAYS IS AMBIDEXTROUS LEADERSHIP GIVEN SHAPE IN FAST-GROWING START-UPS?

The thesis focuses on gazelle start-ups because leadership is crucial to entrepreneurial companies as they have little tolerance for inefficiency (De Winne & Sels, 2010). Unlike large corporations, start-ups are very much centered on the founder or so-called entrepreneur. The leader of a small company significantly influences the venture through his personal attributes and is the chief guide of strategic decisions. Small company leaders are the main actors in formulating 'the mission of their organizations, setting specific goals, and organizing and motivating the efforts of their employees' (Ensley, Pearce & Hmieleski, 2006:244).

Besides, start-ups provide a good environment to study the relationship between leadership and innovation because of their transparency and lower business process complexity (de Winne & Sels, 2010).

The first acknowledgement of gazelle firms can be found in Birch's early work (1979). He saw gazelles as creating most of the employment growth of the United States. Summarizing the subsequent discussion on characteristics of gazelle firms Henrekson (2008) states that they are on average younger and smaller than other firms and as a discriminant criterion rapidly-growing. He

also concludes that employment is to a large extent created by gazelle firms. I will hence follow the definition of Nicholls-Nixon (2005:77) in line with these criteria, seeing gazelles as 'rapidly growing small and medium-sized enterprises making a disproportionate contribution to employment and wealth creation'.

One additional characteristic established by Birch and Medoff (1994:163) is that gazelles produce 'great innovation'. This is due to the fact that to maintain high-growth rates they rely strongly on innovation (Acs, 2008). Innovation is defined as 'the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organization or wider society' (West & Farr, 1990:9). Following Rosing et al. (2011:956), it is distinguished from mere creativity by 'the implementation, as opposed to mere generation, of ideas'.

Two distinct activities are necessary to fulfill the innovation process as proposed by Rosing et al. (2011) being exploration and exploitation. The conflicting demands between these two innovation types are summarized under the term ambidexterity.

March (1991), one of the pioneers of describing ambidexterity in organizations, saw the distinction between exploitation and exploration in the type and degree of learning (innovation), rather than in the presence or absence of learning like some other scholars (Rosenkopf & Nerkar, 2001; Vassolo, Anand & Folta, 2004; Vermeulen & Barkema, 2001).

In this context exploitation 'is about efficiency, increasing productivity, control, certainty, and variance reduction' while exploration 'is about search, discovery, autonomy, innovation and embracing variation' (O'Reilly & Tushman, 2008: 189). Hence, exploitation is rather about creating incremental innovation while exploration can be linked to the creation of radical innovation (Voss, Sirdeshmukh & Voss, 2008; Benner & Tushman, 2003; Danneels, 2002).

Researchers underline the importance for companies to combine both innovation types in order to gain short-term and long-term competitive advantage (Bledow et al., 2009; Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2008; Raisch & Birkinshaw, 2008).

The ability to balance different types of innovation is called ambidexterity. Ambidexterity has only recently begun to be transferred from the organizational point of view to an individual perspective. This development started with the mentioning of management (Mom, Van Den Bosch & Volberda, 2007), leadership (Cope, Kempster & Parry, 2011; Lin & McDonough III, 2011; Rosing et al., 2011; Zheng, Khoury & Grobmeier, 2010), top management (Smith & Tushman, 2005), and top management teams (Jansen, George, Van Den Bosch & Volberda, 2008; Lubatkin et al., 2006) as antecedents of organizational ambidexterity (Gibson & Birkinshaw, 2004).

Building especially on leadership as one main antecedent of organizational ambidexterity, researchers started to investigate ambidexterity of leaders in more detail as a single concept with a direct effect on innovation (Rosing et al., 2011; Sen, 2010; Tushman et al., 2011). Ambidextrous leaders are able to foster both explorative and exploitative innovation by encouraging increasing or reducing variance and flexibly switching between those behaviors (Rosing et al., 2011).

As described by Rosing et al. (2011), a combination of different leadership behaviors is needed to promote both innovation types effectively. One main competence enabling ambidextrous leaders to apply these different behaviors as the situation demands (Rosing et al., 2011) is called 'behavioral flexibility' (Denison & Hooijberg, 1995; Hall, Workman & Marchioro, 1998; Mumford et al., 2000; Peterson, Walumbwa, Byron & Myrowitz, 2008; Zaccaro, Gilbert, Thor & Mumford, 1991).

The second competence enables leaders to know which leadership behaviors are appropriate in which situation and best encouraging the desired type of innovation. This competence is called 'cognitive complexity' (cf. Akman, Misra & Cafer, 2011; Carmeli & Halevi, 2009; Hendrick, 2011; Larson & Rowland, 1974; Mumford et al., 2000; O'Reilly & Tushman, 2008; Rosing et al., 2011; Smith et al., 2010). Following Larson and Rowland (1974) individuals, who have high levels of cognitive complexity, are able to utilize a number of different constructs when perceiving and understanding their environment whereas individuals with low levels of cognitive complexity have relatively few and strict rules of interpretation rather perceiving their environment in a categorical black and white way. Hence, leaders that possess high levels of 'cognitive complexity' are better able to 'perceive differences in their environment, view others in ambivalent terms and assimilate contradictory cues' (Larson and Rowland, 1974:38), ultimately making them able to manage the contradictions between exploration and exploitation (Smith & Tushman, 2005).

Only through cognitive complexity and behavioral flexibility can leaders combine behaviors encouraging exploitation and behaviors encouraging exploration to foster ambidextrous innovation and firm growth.

The following section identifies sub-questions that are of interest concerning the overall research question and act as a central theme of the research and the thesis.

RESEARCH QUESTIONS

Having defined all important terms of the central question, a general understanding of ambidextrous leadership can be established that shows the interrelationships between each of the aspects mentioned and that underlines the central research focus.

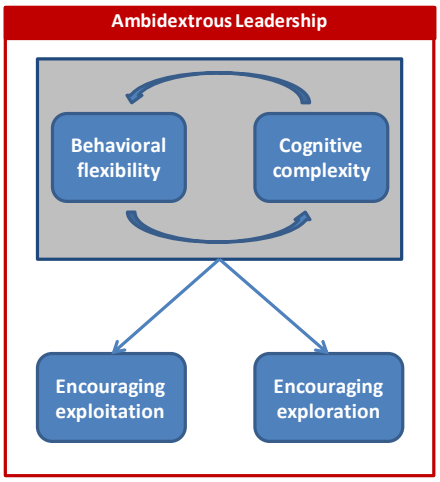

Figure 1: Central research Model.

As indicated by the research questions and pointed out in Figure 1, the main focus of this research is to identify the behaviors and explain the competences forming an ambidextrous leader. So the analysis will be very specific and on the individual level.

Hence, the concrete innovation outcomes will not be of focus in the thesis but their relationship to ambidextrous leadership will instead be derived from the academic discussion (e.g. Bledow et al., 2009; Lin & McDonough III, 2011; O'Reilly & Tushman, 2004; Rosing et al., 2011; Tushman, 1996). The same holds true for the innovation-growth relationship (e.g. Tucker, 2009; Hölzl & Friesenbichler, 2007; Kollmann et al., 2009; Moreno & Casillas, 2007; Moreno & Casillas, 2000).

Therefore, balanced innovation activities are seen as the natural outcome of ambidextrous leadership, whereas fast growth can be seen as the firm setting where a balance of innovation activities and hence ambidextrous leaders are strongly required, should naturally be present and can therefore be observed well.

The research framework is a good starting point for decomposing the central question into several sub-questions which will guide through the thesis. These are:

1. ***WHICH BEHAVIORS ENCOURAGING EXPLORATION ARE EXHIBITED BY LEADERS IN FAST-GROWING START-UPS?***
2. ***WHICH BEHAVIORS ENCOURAGING EXPLOITATION ARE EXHIBITED BY LEADERS IN FAST-GROWING START-UPS?***
3. ***IN WHICH WAYS DO THE COMPETENCES COGNITIVE COMPLEXITY AND BEHAVIORAL FLEXIBILITY ENABLE AMBIDEXTROUS LEADERSHIP?***
4. ***TO WHAT EXTENT IS AMBIDEXTROUS LEADERSHIP ACCENTUATED IN FAST-GROWING START-UPS?***

The research questions will guide through the thesis, so that ambidextrous leadership in entrepreneurial gazelles can be analyzed in a structured approach.

RESEARCH STRATEGY

The research will be undertaken by combining the findings from five case-studies of German start-ups. As illuminated by Harney & Dundon (2006:53) case studies are 'the most appropriate method to yield information about what is happening in small and medium-sized companies'. Start-ups provide a good environment to study the relationship between leadership and innovation because of their small distance between the individual's and the company's performance (De Winne & Sels, 2010).

Each case-study consists of interviews with a manager and employees and secondary company data like information from the company website and the researcher's observations. This process of collecting and comparing data is called triangulation and enables a thorough analysis of the research questions using different viewpoints. The interviews are semi-structured, as such giving frame to the discussion of several questions but also enabling the interviewee to give new interesting insights.

To select the cases, the author made use of non-probability sampling, which is aligned to the qualitative exploratory approach of the study. Companies were identified (using personal network and internet research) and contacted directly by telephone or e-mail. One company was interviewed as a pilot case study in order to improve interviewing skills, optimize case study conditions and test potential questions. This interview has been analyzed and used as basis for the concrete case study

guidelines. Of the 15 identified companies fulfilling the criteria specified in the methodology section, three participated in the study. Moreover, through participation in a large German start-up conference, two further contacts to gazelle start-ups that are participating in the study could be made.

Throughout the research, the author followed a research funnel being very specific, detailed and keeping on the individual level concerning ambidextrous leaders, while considering innovation and company success outcomes on a more general company level. This is also reflected in the number and specification of the interview questions. The interviews with employees are used in order to test the leader's answers and self-image as well as for generating a broader image of his behaviors and competences. It is not the aim of these employee interviews to discover the influence of the leader on employee's innovation activities as this issue is beyond the identified research goal and questions.

The data obtained during the case studies is analyzed using three coding steps: open, axial and selective coding (Strauss & Corbin, 1990). As a result of the coding process, a general framework explaining the behaviors and competences of ambidextrous leaders in gazelle start-ups is developed.

The concrete structuring of the master thesis is explained in the subsequent chapter.

STRUCTURE OF THE THESIS

The report starts with a short introduction to the topic of ambidextrous leadership in gazelle start-ups. This is followed by the explanation of the research design including research goal, central question, research questions, research strategy and the structure of the thesis.

The subsequent explanation of the theoretical framework underlying the case studies includes elaboration on the existing literature about gazelles and innovation, ambidexterity and ambidextrous leadership in the context of fast-growing start-ups. The theoretical chapter ends with the description of an overall theoretical framework and conclusions on the present literature.

The following chapter discusses the methodological approaches chosen for conducting the research. It elaborates on case studies as a scientific method, the sampling process, interviewing techniques, data analysis and reflects on the methodological insights gained from a pilot case study.

The theoretical framework and summary of existing literature are used as a basis for conducting and analyzing the case studies. The data analysis section is separated into a within-case analysis reflecting on each case individually and a cross-case analysis comparing the different cases.

Following the findings from the theoretical section and the overall research framework, each case study is organized around the main theoretical aspects found to be part of the overall concept ambidextrous leadership. Moreover, each case study includes a description of the company environment and internal context as well as a conclusion summarizing the most interesting findings.

The cross-case analysis is ordered around the four research questions and deals with each of them separately presenting and comparing case evidence. The last section of the thesis includes the discussion of results, theoretical and implications, limitations and further research directions.

THEORETICAL FRAMEWORK

GAZELLES AND INNOVATION

'Who creates new jobs: mice, gazelles or elephants?'
David Birch, 1979

The starting point for this study is the research of David Birch (1979, 1981) who investigated rapidly growing firms and their impact on employment in the United States. He made the conclusion that *gazelles* generate most of the employment growth (Birch, 1979).

Through building a rich database of firm characteristics like birth, growth and death, he enabled researchers to study the dynamics of companies in the United States (Acs, 2008). Through his research on entrepreneurial firms, Birch also initiated a trend to study small businesses and discuss their impacts and internal functioning (Acs, 2008). The sample he studied showed that most job creation came from businesses with less than 100 employees and which were younger than four years (Birch, 1981).

Other researchers investigating the topic of gazelles' impact on job creation and economic growth came to conclusions similar to those of Birch's early works: gazelles are a motor of economic growth and employment (Sims & O'Regan, 2006; Moreno & Casillas, 2007; Acs, 2008; Van Praag & Versloot, 2008; Henrekson, 2009).

In 1994 he somewhat reconsidered his initial findings on small and young firms as job providers and came to the conclusion that the unique characteristics of gazelle firms are not size or age, but 'great innovation and rapid job growth' (Birch & Medoff, 1994: 163). Summarizing the findings of Birch and fellow researchers and the ongoing discussion, Henrekson (2008) states that employment is to a large extent generated by gazelles, which are on average younger and smaller than other firms, but as a defining criterion are rapidly growing.

Several scientists, based on these insights into the importance of gazelles, started to research the factors that distinguish gazelles from other companies (Faems et al., 2011; Hölzl & Friesenbichler, 2007; Hölzl, 2009; Moreno & Casillas, 2007).

Important factors accelerating firm growth have been researched for a number of years (for a literature review see Santarelli, Klomp and Thurik, 2006). Many studies have found the characteristics of the entrepreneur and the firm to be influencing growth (Hölzl & Friesenbichler, 2007). Personal characteristics of the entrepreneur (i.e. experience and human capital) as well as financial conditions seem to play a major role (Cressy, 2006; Barringer, Jones & Neubaum, 2005), whereas many other scholars focused on the influence of strategy and leadership on firm growth (Taylor, Gilinsky, Hilmi, Hahn & Grab, 1990; Tonge & Larsen, 1998).

Another major determinant of firm growth is innovation (Hölzl & Friesenbichler, 2007). Gazelles, seen from a Schumpeterian point of view, are able to grow faster than their industry average because they make new combinations of input factors and introduce innovations through which they enable

'creative destruction' (Schumpeter, 1934). Innovation of gazelles is their ability to deliver products rapidly and flexibly adapt new technologies to changing market conditions (Bares, Boiteux, Clerc-Girard & Janczak, 2006). Hölzl (2009) found that especially gazelles close to the technological frontier (i.e. technological progress is important, opportunities are primarily related to innovation) are more innovative than other SMEs as they rely heavily on R&D, comparative advantages and innovation success.

According to Hölzl and Friesenbichler (2007), comparing gazelles to other companies, there seems to be a difference in innovation success rather than in innovation inputs. Especially the successful management of the trade-off between exploiting the current successful products and exploring new ideas for remaining competitive in the long-run is a special capability of gazelles (Danneels 2002; Sims & O'Regan, 2006; Eisenhardt & Martin, 2000; Audretsch, 1995).

The balancing activities that can be undertaken on an organizational level to deal with this trade-off will be discussed in the next chapter.

AMBIDEXTERITY

Gibson and Birkinshaw (2004:209) summarize the findings of Duncan (1976) and Tushman & O'Reilly (1996) by defining ambidextrous organizations as 'aligned and efficient in their management of today's business demands, while also adaptive enough to changes in the environment that they will still be around tomorrow'.

Especially in dynamic environments, finding an appropriate balance between exploitation and exploration is crucial, which is why gazelle firms rely on building ambidexterity into their organization (Faems et al., 2011).

The theory explains how firms are able to survive in the face of change and adapt over time through simultaneous exploitation and exploration (O'Reilly & Tushman, 2008). According to O'Reilly & Tushman's definition (2008:189) 'exploitation is about efficiency, increasing productivity, control, certainty, and variance reduction' and 'exploration is about search, discovery, autonomy, innovation and embracing variation'. Birkinshaw (2004) also uses the terms alignment (exploitation) and adaptability (exploration). Both activities should not be seen as totally opposing each other but rather as two ends on a continuum (Lavie, Stettner, Tushman, 2010). Nevertheless, overemphasizing one activity can lead to organizational inefficiencies:

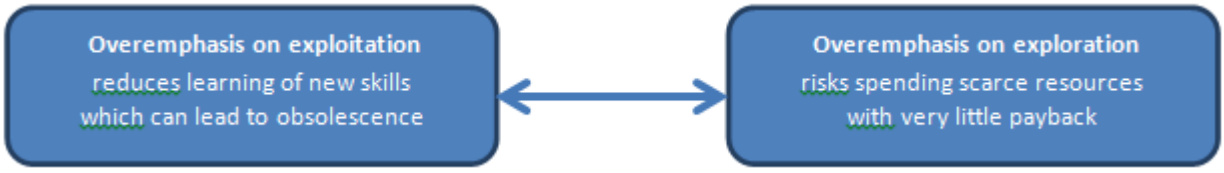

Figure 2: Risks of an overemphasis on either exploitation or exploration.

Birkinshaw (2004) found ambidexterity to be very significantly linked to business unit performance and fully mediating the influence of organizational context on performance.

Porter (1980), with his theory of 'generic strategies', denominates the attempt to fulfill both goals at the same time as being 'stuck in the middle', pursuing neither of the mutually exclusive strategies perfectly. He argues that in order to generate a long-term competitive advantage firms have to select one strategy and stick with it. A combination of different generic strategies will hence result only in a waste of resources without generating a competitive advantage (Porter, 1980).

The difficulty to fulfill both strategies at the same time, as described by Porter and other researchers, is the reason why numerous scholars started to investigate how organizational context is able to create ambidexterity through different timing, structures or contexts.

Three main forms have been investigated: sequential, structural and contextual ambidexterity.

Sequential ambidexterity describes the separation between exploitation and exploration from a product lifecycle point of view. In all the processes that require high levels of exploration (i.e. basic research, product development) the organizational context shall foster 'search, discovery, autonomy, innovation and embracing variation' (O'Reilly & Tushman, 2008:189). In differently timed processes requiring high levels of exploitation (i.e. market introduction, sales) the organizational context shall foster 'efficiency, increasing productivity, control, certainty, and variance reduction' (O'Reilly & Tushman, 2008:189).

Structural ambidexterity is 'to create separate structures for different business activities' (Birkinshaw & Gibson, 2004: 49). It describes the attempt to structurally combine the best of both worlds by making some divisions (e.g. R&D) small and organic and other divisions (e.g. manufacturing) larger and rather mechanistic. The concept also incorporates complementing traditional organizational practices with new organizational structures like spin-outs or acquisitions to pursue both strategies.

The following table adapted from Burns & Stalker (1961:96ff.) gives a good overview of the differences between mechanistic and organic structures:

	Mechanistic	Organic
Task Definition	Rigid & highly specialized	Flexible, less specialized
Coordination & Control	Rules & directives from above	Mutual adjustment, cultural control
Communication	Mainly vertical	Horizontal & Vertical
Commitment & Loyalty	To immediate superior	To the organization, its goals & values
Environmental Context	Stable with low technological-uncertainty	Dynamic, technological uncertainty

Table 1: Mechanistic versus Organic Structure. Source: Burns & Stalker, 1961: 96 ff.

The organizational designs supporting structural ambidexterity can take many different forms. Well-known ones are functional designs that integrate project teams into the existing organizational structure, cross-functional teams that operate within the established organization but outside the existing management hierarchy and unsupported teams that are set up outside the established organization and management hierarchy (O'Reilly & Tushman, 2004).

The most sophisticated but also most difficult to manage organizational design for structural ambidexterity is the Ambidextrous Organization. It establishes project teams that are structurally independent units, each with its own processes, structures and cultures, but are integrated into the existing management hierarchy (O'Reilly & Tushman, 2004). Such an Ambidextrous Organization requires that both business types are held together through integration into the existing senior-teams and common vision and values.

In contrast to this structural separation, **Contextual Ambidexterity** is 'the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit' (Gibson & Birkinshaw, 2004:209). It 'calls for individual employees to make choices between alignment-oriented and adaption-oriented activities in the context of their day-to-day work' (Birkinshaw & Gibson, 2004:49). According to Birkinshaw & Gibson (2004) Contextual Ambidexterity for this reason requires individuals that are able to act ambidextrously by:

- taking the initiative and being alert to opportunities beyond the core work description,
- being cooperative and seeking opportunities to combine their work efforts with others,
- being brokers, always striving to build internal linkages to other individuals or units,
- being multi-taskers, who are comfortable with doing more than one job simultaneously.

Summarizing the different characteristics of exploitation and exploration in an organization (as illustrated in Table 2) we see the complexity of the trade-off faced by many organizations.

	Exploitation	Exploration
Strategic Intent	Cost, Profit	Innovation, Growth
Critical Tasks	Operations, Efficiency	Adaptability, New Products
Competencies	Operational	Entrepreneurial
Structure	Formal, Mechanistic	Adaptive, Loose
Control, Rewards	Margins, Productivity	Milestones, Growth
Culture	Efficiency, Low Risk, Quality, Customers	Risk-taking, Speed, Flexibility, Experimentation
Leadership Role	Authoritative, Top Down	Visionary, Involved

Table 2: Characteristics of Exploitation and Exploration. Source: O'Reilly & Tushman, 2004.

As argued by O'Reilly and Tushman (2004), the unit holding together these different alignments is the senior management team through exhibiting ambidextrous leadership.

In the following chapter this concept of ambidextrous leadership will be introduced, explained and further advanced.

AMBIDEXTROUS LEADERSHIP

It is important to notice that leadership-driven and organizational context-driven ambidexterity are not two ends of a continuum but do coexist and work in close conjunction with each other. Researchers found that leadership of a company has different main responsibilities depending on which organizational ambidexterity types is predominant. Table 3 summarizes the different key tasks of ambidextrous leaders in each organizational ambidexterity context:

	Structural Ambidexterity	Contextual Ambidexterity	Sequential Ambidexterity
Main ambidextrous leadership task	coordinate integration (Jansen et al. 2008; Lubatkin et al. 2006; Perretti & Negro, 2006; Smith & Tushman 2005; Westerman et al., 2006)	design context (Gibson/Birkinshaw 2004)	initiate change (Brown & Eisenhardt, 1997; Rothaermel & Deeds, 2004; Siggelkow & Levinthal, 2003)

Table 3: Organizational ambidexterity - ambidextrous leadership cohesion.

In a structural ambidexterity context, leaders mainly need to coordinate the integration between the separate units dealing with exploitation and exploration (Jansen et al. 2008; Lubatkin et al. 2006; Perretti & Negro 2006; Smith & Tushman 2005; Westerman, McFarlan & Iansiti, 2006). So in fact, the tension between exploration and exploitation is not neutralized by structural ambidexterity but shifted to the top management level (Lubatkin et al. 2006).

When ambidexterity is contextual, leadership needs to design a context in which exploration and exploitation are not mutually exclusive (Gibson & Birkinshaw 2004). The company culture has to transfer the knowledge that both innovation types equally acknowledged and rewarded.

For the timely division between exploration and exploitation, sequential ambidexterity, leadership's main responsibility is to initiate change between the two distinct periods and guide the company through the following periods of transition (Brown & Eisenhardt 1997; Rothaermel & Deeds 2004; Siggelkow & Levinthal 2003).

The different requirements for ambidextrous leaders in each organizational ambidexterity context are also acknowledged by Rosing et al. (2011:957) when stating that 'a single leadership style cannot promote innovation effectively'. They underline the need of different leadership behaviors that can be combined and adapted to changing requirements of the highly complex concept of innovation. In the study on the 'heterogeneity of the leadership-innovation relationship' they discuss the differing leadership requirements of exploitative and explorative innovation activities and call for a leadership style able to serve both innovation types (Rosing et al., 2011).

This line of thought is supported by the pioneers of ambidexterity research, Tushman and colleagues (2011:75), who see the CEO as 'innovation's only friend' and negotiator between the conflicting demands of exploitation and exploration.

In his recent study, Sen (2010:103) searches for a more contemporary leadership style than the previously researched ones, which demands 'Ambidextrous, Connected and Mindful Brains'. The current business environment characterized by complexity, rapidness, trade-offs and change seems to require leaders that are able to show more than one style and adapt their behaviors to the requirements of the current situation.

Especially innovation, as one of the most complex, risky and demanding processes needs leaders that are able to balance the trade-off between being successful in the short-run and remaining competitive in the long-run by switching between behaviors encouraging exploration and exploitation (Smith et al., 2010).

The next two sections will deal particularly with each of these behavior groups starting with exploration.

BEHAVIORS ENCOURAGING EXPLORATION

Starting the establishment of a theoretical and qualitatively explored model of ambidextrous leadership, the first research question is the following:

> ***RESEARCH QUESTION 1: WHICH BEHAVIORS ENCOURAGING EXPLORATION ARE EXHIBITED BY LEADERS IN FAST-GROWING START-UPS?***

March (1991:102), one of the pioneers of describing ambidexterity in organizations, defines exploration as activities like 'search, variation, experimentation, and discovery' which strongly links the activities to the creation of radical innovation. Kollmann et al. (2009:299) are in line with the research of March (1991), defining exploration as 'discovering entrepreneurial opportunities'. Several aspects characterizing exploration are shown in Table 4.

Aspects of Exploration		
Revolutionary change	Strategic tasks	Organic structures
Radical innovation	New technologies	Non-routine
Future (emerging) business	Possibilities (opportunities)	Entrepreneurship
Long-run perspective	Adaptability	Change
Variation	Effectiveness	Creating advantages
Flexibility	Divergent behavior	Path creation

Table 4: Explorative Aspects. Kollmann et al., 2009.

In line with the definition of exploration given by March (1991), ambidextrous leaders are expected to show leadership behaviors that encourage search, variation, experimentation and discovery.

For encouraging follower's exploration it is essential to assign enough resources (time, money, equipment etc.) to the individual or organizational unit (Bledow et al., 2009). Researchers point out the relevance of slack resources, i.e. excess resources (Cyert & March, 1963) for undertaking exploration activities (Faems et al., 2011).

Secondly, a main task of ambidextrous leaders is to create links between different individuals, teams, departments or external partners. By linking, they are able to generate knowledge flows and foster idea generation (O'Reilly & Tushman, 2008). By cooperating with lead customers, universities, partners the companies are able to open their innovation processes to external knowledge which is essential for exploration processes (Faems et al., 2011).

Having designed the organizations external relations and innovation network, ambidextrous leaders are expected to shape the internal culture and environment for exploration. Specifically behaviors building a creative and trustful work atmosphere allow ideas to emerge (Bledow et al., 2009). This is linked to the fostering of positive moods, safety and trust in the overall culture as well as in each leader-follower relationships (Bledow et al., 2009; Un & Montoro-Sanchez, 2010).

For employees to start exploratory processes, they also require large amounts of autonomy and freedom. Hence, ambidextrous leaders are expected to encourage autonomous initiatives and experimentation (Gupta et al., 2004, Bledow et al., 2009). In relation to 'assigning resources', also having enough time and space for exploration is important for employees (Rosing et al., 2011).

Nevertheless, literature suggests that employees still need some kind of specification on which tasks they should work especially creative (Shalley, 1991; Bledow et al., 2009). This is specifically important for companies with contextual ambidexterity because in such a context employees do require some guidance on which type of activities is currently expected of them (Kearney & Gebert, 2009; Bledow et al., 2009). In a contextual ambidexterity context, even goal-setting might be encouraging exploration if the goal to be creative can be clearly assigned to a specific task, giving followers some guidance how to balance their exploitation and exploration activities (Shalley, 1991).

Interestingly, some researchers state that there might also be positive effects on exploration activities if leaders exhibit somewhat contrary behaviors to the ones described before (Gupta et al., 2004, Bledow et al., 2009). Accordingly, time pressure, necessity and threat by changing conditions can enhance a proactive approach to finding solutions for long existing problems. The encouragement of negative moods can be beneficial for creativity in a context where support for creativity and positive emotions are high (George & Zhou, 2007, Bledow et al., 2009). Ambidextrous leaders should in this context also support attempts of their followers to challenge existing approaches (Rosing et al., 2011, Lubatkin et al., 2006). This might be especially important in a company that is already experiencing the challenges of a success trap.

Following the theories of Amabile (1996, 2000) followers who usually focus on exploration are intrinsically motivated. Due to the fact that intrinsic reward is more difficult to assign than extrinsic reward and often linked to knowledge acquisition, work environment and other personal factors Bledow et al. (2009:18) recommend leaders to 'create a work environment that facilitates creativity rather than directly rewarding creativity'.

Summarizing, ambidextrous leaders are expected to show behaviors linked to the assignment of resources, the creation of a network and contact between persons and institutions, the creation of a creativity-fostering work environment, the giving of autonomy and freedom, the encouragement of creativity by negative moods and the specification of tasks in which exploration is required.

It will be one major goal of this thesis to explore and describe in detail the different behaviors that encourage exploration throughout the case-studies.

BEHAVIORS ENCOURAGING EXPLOITATION

The second research question deals with exploitation:

> ***RESEARCH QUESTION 2: WHICH BEHAVIORS ENCOURAGING EXPLOITATION ARE EXHIBITED BY LEADERS IN FAST-GROWING START-UPS?***

Ambidextrous leaders are, in theory, expected to show behaviors encouraging exploitation. Following the definition of Rosing et al (2011:967), these behaviors include taking corrective action, setting specific guidelines, and monitoring goal achievement.

March (1991:102) defines exploitation activities as 'refinement, efficiency, selection, and implementation', strongly linking the activity to the creation of incremental innovation. He sees the need for aligning the organizational context, structures and strategies specifically to exploit existing products and competences (and in parallel explore new ones). Moreover, he saw the distinction between exploitation and exploration in the type and degree of innovation (learning), rather than in the presence or absence of learning like some other scholars (Rosenkopf & Nerkar, 2001; Vassolo et al., 2004; Vermeulen & Barkema, 2001). Baum, Li and Usher (2000:768), following these ideas, state that 'exploitation refers to learning gained via local search, experiential refinement, and selection and reuse of existing routines'. A number of aspects linked to exploitation found by Kollmann et al. (2009) are exhibited in Table 5.

Aspects of Exploitation		
Incremental change	Alignment	Existing technologies
Incremental innovation	Efficiency	Certainties
Existing business	Mechanic structures	Sustaining advantages
Short-run perspective	Routine	Convergent behavior
Selection	Conservatism	Path dependence

Table 5: Exploitative Aspects. Kollmann et al., 2009.

Based on the exploitation definition of March (1991), ambidextrous leaders are expected to show behaviors encouraging refinement, efficiency, selection and implementation.

Refining existing routines and developing new structures assists employees in undertaking exploitation (Gupta et al., 2006). Several potential behaviors leading to the development of structure have been discussed in the literature. Examples are introducing process management (Gupta et al., 2006), the structuring of followers activities (Bledow et al., 2009), setting of guidelines (Rosing et al., 2011) or standardization (Ohly, Sonnentag & Pluntke, 2006).

Structuring of organizational tasks is often paired with a certain level of controlling activities by the leader (Bledow et al., 2009). By taking corrective action, the leader can guide his followers through the exploitation process and provide feedback and improvement suggestions at the same time (Rosing et al., 2011). Moreover, normative performance standards (Bledow et al., 2009) and the monitoring goal achievement (Rosing et al., 2009) drive close alignment of exploitation activities. When encouraging employees to exploit, leaders need to pay close attention to the details of their own work and encourage employees to follow this role model (Bledow et al., 2009).

Additionally, it is important to develop follower's domain-relevant expertise. Through training and development programs their competencies and skills can be refined (Bledow et al., 2009; Lubatkin et al., 2006). This enables followers to effectively exploit and come up with ideas that are not only innovative but also useful to the business (Taylor & Greve, 2006; Conti, Coon, & Amabile, 1996).

As for exploration, employees need to be rewarded if successfully undertaking exploitation. Following the theory of Amabile (1996), individuals that have a focus on exploitative work are extrinsically motivated. Ambidextrous leaders can hence best encourage them to further exploit if rewarding successful exploitation with rewards like money or status.

Summarizing, ambidextrous leaders exhibit behaviors linked to the development of routines, controlling, increasing employee's expertise and giving extrinsic reward to encourage follower's exploitation.

As previously mentioned for exploration, it will be one major goal of this thesis to explore and describe the different behaviors that encourage exploitation more in detail throughout the case-studies.

BALANCING COMPETENCES

Both behaviors encouraging exploitation and exploration need to be combined by the leader in order to form a single personal leadership style. The last research question hence investigates in which specific ways the two types of behavior are linked by ambidextrous leaders, which is the core of ambidextrous leadership:

> ***RESEARCH QUESTION 3: IN WHICH WAYS DO THE COMPETENCES COGNITIVE COMPLEXITY AND BEHAVIORAL FLEXIBILITY ENABLE AMBIDEXTROUS LEADERSHIP?***

Several researchers have already started to describe some potential balancing competences, which enable leaders to adapt the behaviors to the situation and the employee as appropriate (Rosing et al., 2011). Moreover, it is of high importance for the leader to know which behaviors are fitting to which situation and circumstances.

Therefore, one competence enables the leader to switch between behaviors and the other one enables him to understand and know which behaviors are appropriate for which situation.

Zaccaro et al. (1991:321) describe the relation between the two competences as follows:

> '…leaders need two social attributes, social perceptiveness, which promotes an accurate awareness of situational demands, and behavioral flexibility, which facilitates appropriate responses to these demands'.

The first competence enables leaders to be aware of which behaviors are appropriate and required in which situations. This competence is hence linked to the cognitive ability to understand complex innovation and social processes. It is moreover enabling a leader to have a good understanding of the strengths, weaknesses and moods of his employees. Carmeli & Halevi (2009) describe the different terms relating to this concept as a varied terminology containing for example cognitive complexity, integrative complexity or interactive complexity theory. The competence will be called 'cognitive complexity' in this paper as referring to the cognitive mindsets of the leader enabling him to understand complex innovation and social processes.

Following the definitions of Larson & Rowland (1974:38) individuals with low cognitive complexity are characterized as 'having categorical black-white perceptions as well as relatively few, but rigid, rules of integration' whereas individuals with high levels of cognitive complexity are characterized as 'perceiving more differences in their environment, more likely to view others in ambivalent terms, and better able to assimilate contradictory cues'.

In line with these definitions, cognitive complexity is already linked to ambidextrous minds as individuals with high cognitive complexity are able to adapt their behaviors to 'contradictory cues'. Other authors follow this line of thought, describing cognitive complexity as 'cognitive differentiation and integration' (Akman et al., 2011:516) or 'the ability to seek integration across seemingly contradictory tensions' (Smith et al., 2010:458). Also, Rosing et al. (2011) describe cognitive complexity from an ambidextrous perspective as 'the ability to constructively face opposing ideas' relating it to the theory of 'integrative thinking' introduced by Martin (2007:15).

Other authors use slightly differing definitions of the concept. Zaccaro et al. (1991:324) rather draw the bridge to the understanding of social processes aspect stating cognitive complexity to be 'a leader's cognitive capacities within social domains'. Carmeli & Halevi (2009:210) focus on the 'mental capacity to process and interpret information and understand complex processes'.

As the results of the early Larson & Rowland study (1974) indicated, cognitive complexity might be composed of several distinct characteristics that form the entire competence solely in their combination. This study will hence combine the aspects of 'being able to understand contradictory situations', 'being able to understand complex innovation processes' and 'being able to recognize employee characteristics' to the single competence cognitive complexity.

Combining both aspects, ambidextrous leaders need cognitive complexity to recognize which type of behavior is required in which situations and for which individuals or groups.

The second competence enabling leaders to be ambidextrous is a certain flexibility to switch between the encouraging exploitation and encouraging exploration behaviors called behavioral flexibility. It is about adapting behaviors to the awareness created by cognitive complexity.

Hunt, Stelluto and Hooijberg (2004) focus their considerations on creative ventures and come to the conclusion that leadership of these ventures especially requires role flexibility which is another description of behavioral flexibility.

Rosing et al. (2011) refer more concretely to the importance of behavioral flexibility for combining two sets of behaviors: those encouraging exploitation and those encouraging exploration. They call the ability to flexibly switch between appropriate leadership behaviors 'ambidextrous leadership'. Especially considering the requirements of innovation, with its complex processes and different stages, leaders' flexibility to switch between behaviors is fundamental (Rosing et al., 2011).

The inclusion of behavioral flexibility as a competence into the concept of ambidextrous leadership builds on several leadership theories that attempt to describe situational contingencies like the LMX-Theory or path-goal theory (Rosing et al., 2011). Also discussing the specific requirements of

innovation, Bledow et al. (2011:9) call for leaders who 'constantly adapt one's leadership approach to the changing demands of innovation'.

Hall et al. (1998:2) describe behavioral flexibility as 'the ability to act differently yet appropriately in different situations' already including the concept of cognitive complexity into their definition. They moreover explain the occurrence of behavioral flexibility as: 'demonstrated when individuals are both able and willing to make different (and presumably, appropriate) social responses in different social contexts' (Hall et al., 1998:4). Seeing behavioral flexibility as a capability, they define the concept as 'the ease with which an individual can perform a particular behavior when the situation requires it' (Hall et al., 1984:6).

Accordingly, Zaccaro et al. (1991:322) characterize the competence as 'the ability and willingness to respond in significantly different ways to correspondingly different situational requirements' and 'responding equally well to different situational demands'. In line with their view, behavioral flexibility as a competence does not only include the mere willingness but also the ability to adapt behaviors to differing situations (Zaccaro et al., 1991).

Summarizing the findings from the literature review on behavioral flexibility, the paper proposes that ambidextrous leaders need behavioral flexibility to adapt their behaviors to differing situational requirements.

Zaccaro et al. (1991), mainly discussing behavioral flexibiliy, recognize the fact that this competence requires cognitive social structures promoting the situational variance of behaviors which refers back to the cognitive complexity needed as a basis of behavioral flexibility.

Denison & Hooijberg (1995) argue in the same direction seeing cognitive complexity only as a necessary condition for effective leadership, whereas behavioral flexibility is the sufficient condition. They underline this distinction through the statement that 'leadership must inevitably be performed through action, not cognition' (Denison & Hooijberg, 1995:524) and call for studies combining both competences in a theory of effective leadership.

Effective leaders are, according to Denison & Hooijberg (1995:525), able to combine cognitive complexity and behavioral flexibility to 'recognize and react' to the ambidexterity of their environment. Thus, following this line of thought, ambidextrous leadership is not only about conceiving ambidexterity but also performing multiple behaviors based on this conceived environment (Denison & Hooijberg, 1995). Ambidextrous leaders act by showing differing behaviors on the basis of combining the two competences (Zaccaro et al., 1991).

Leaders able to encourage and work in both modes simultaneously due to their cognitive and behavioral competences seem to be better preparing their companies for the competitive landscape of the 21st century and the dynamics of their high growth (Denison & Hooijberg, 1995).

AMBIDEXTROUS LEADERSHIP IN THE CONTEXT OF FAST-GROWING START-UPS

Firms usually tend to associate beneficial aspects with growth as for example an increasing customer base, being able to hire new workforce or the establishment of barriers against new entrants.

They do often neglect the challenges arising with firm growth that are especially present for gazelle firms as above-average growers. The scholarly literature is discussing several difficulties firms often face when growing.

First of all, many growing firms experience the challenge to become trapped in their past. This concept is called path dependency or inertia. It describes how past practices or routines continue in a firm, even if better alternatives are already available and needed due to changing markets (Hite & Hesterly, 2001; Ireland & Hitt, 2003). Apart from changing market requirements another factor possibly leading to a need for changing old approaches is firm growth. With growing employee numbers, customers, networks firms need to rethink their current organizational set-up and approaches to topic like innovation which is difficult as they tend to rely on known procedures.

This trap in old routines and history can also be linked to the concepts of inertia and core competences becoming core rigidities (Leonard-Barton, 1992). It is especially dangerous for fast-growing firms because due to their growth these companies need to alter structures and processes within the organization and usually are active in a dynamic environment.

Additionally, gazelles face an immense trade-off between daily business and the operational challenges of their fast growth. Hiring new employees or setting up organizational structures demand a lot of workforce capacities which might at the same time particularly needed because of the increasing customer and product base. Leaders have to allocate scare resources for either managing the daily business or managing the growth.

Another trade-off inherit to almost all businesses is between efficiency and innovation. An overemphasis on either one side can present problems for companies in the long-run possible leading to the above-described path dependence or organizational inertia (Sarkees & Hulland, 2009). Too much focus on efficiency can make it difficult for firms to alter their strategies in changing environments (Cyert & March, 1992) while an overemphasis on innovation makes firms to take too many risks without generating profits (Levinthal & March, 1993).

The trade-off between efficiency and flexibility is described as the ‘central paradox of administration’ (Thompson, 1967:15) and finds its roots in the company’s choice of structure. Mechanistic structures are seen to support efficiency due to their high levels of standardization, centralization and hierarchy while organic structures characterized by decentralization, freedom and autonomy foster flexibility (Raisch & Birkinshaw, 2008).

Both dilemmas are somewhat comparable but not exactly the same as the trade-off between exploitation and exploration. The conflict between both types of innovation activities is the core trade-off faced by ambidextrous leaders and the dilemma this thesis focusses on.

As described by Gupta et al. (2006) the trap can develop in both directions, either by an overemphasis on exploitation or on exploration.

Projects in a company with an overemphasis on exploration often lead to failure due to their high risk. These failures promote the constant search for new and potentially more successful ideas and by

doing so even more exploration. Researchers name the trap created by this circle 'failure' or 'exploration trap' (Beckman, 2006; Gupta et al., 2006; O'Reilly & Tushman, 2008; Raisch & Birkinshaw, 2008).

Projects in a company with an overemphasis on exploitation often lead to fast success due to their lower complexity and risk. These early success reinforce further exploitation creating a 'success' or 'competence trap' (Faems et al., 2011; Gupta et al., 2006; Lubatkin et al., 2006; O'Reilly & Tushman, 2008).

Summarizing, a focus on exploration often leads to even more exploration, long-term orientation and the 'failure trap' while a focus on exploitation often leads to even more exploitation, short-term orientation and the 'success trap' (Gupta et al., 2006, Raisch & Birkinshaw, 2008). In this context, exploration and exploitation compete for attention, resources and organizational structure, culture and routines, enforcing a difficult challenge for leaders (Gupta et al., 2006).

Ambidextrous leaders are characterized by being able to see the paradox rather than trade-off between these two innovation activities. By flexibly encouraging either exploitation and exploration of their followers, ambidextrous leaders are acting as a juggler who is 'able to handle multiple balls at one time' (Tushman & O'Reilly, 1996:11).

Faems et al. (2011) discuss the question if it is more likely for gazelle firms to be trapped in exploitation or exploration. They see growth as the result of a successful exploitation of a start-ups core capabilities and additional exploitation needed for growing further.

Especially for gazelle firms, their above-average growth brings along numerous organizational challenges to which start-ups are most likely responding with structuring, streamlining and routinizing their company (Faems et al., 2011). These activities undertaken as response for fast-firm growth are again rather encouraging exploitation (Gupta et al., 2006).

Other researchers, on contrary, found that rapid firm growth leads to organizational slack which can be invested into further exploration activities most likely leading to a failure trap (Nohria & Gulati, 1996; Damanpour 1992). Nevertheless, there argumentation is not totally convincing, as organizations investing heavily in exploration also underlie the risks of failure and are not well able to generate profits from their explorative activities. This over time leads to a reduction of slack resources, so that the original argumentation that fast-growers might have an overemphasis on exploration is doubted to hold true over some time being.

It is hence more likely that leaders in fast-growing start-ups are confronted with an overemphasis on exploitation and the potential way into a success trap.

Gazelle start-ups act in very dynamic environments with rapidly changing requirements and organizational structures. As the difficulty to balance exploitation and exploration increases with the dynamics of the market and the business, ambidextrous leaders are of crucial importance to rapidly growing start-ups. They are of special importance for ensuring not only short-term but continuous growth of the gazelle start-ups (Zaccaro et al., 1991). It is therefore expected to find a high extent of

ambidextrous leadership behaviors in the case studies with a slight focus on balancing out the companies towards exploration.

The last research questions deals with these considerations and attempts to investigate the extent of ambidextrous leadership shown by the interviewed leaders:

> ***RESEARCH QUESTION 4: TO WHAT EXTENT IS AMBIDEXTROUS LEADERSHIP ACCENTUATED IN FAST-GROWING START-UPS?***

Having discussed the existing literature on each of the four research questions, the following chapter is summarizing the most important findings and building a theoretical framework of ambidextrous leadership in gazelle start-ups.

CONCLUSIONS DRAWN FROM THE LITERATURE REVIEW

Summarizing the most important findings from the literature review, we see that gazelle firms have an inherit necessity to be ambidextrous due to their dynamic environment and fast-firm growth.

On an organizational level there are three distinct forms of ambidexterity: structural, sequential and contextual ambidexterity. As this study focusses on fast-growing start-ups with yet no large organizational structures it is expected that contextual and sequential are most relevant.

Ambidexterity can also be achieved on an individual level, which is especially relevant in small enterprises due to the high influence of individuals in a small organization. One of the most important factors driving ambidexterity on an individual level is leadership. Ambidextrous leaders are able to encourage exploitation and exploration activities of followers.

To be able to do so they rely on certain competences distinguishing ambidextrous leaders. The scholarly literature in this context puts most emphasis on the competences cognitive complexity and behavioral flexibility. As revealed by the literature review these two competences are expected to work in close conjunction with each other.

Cognitive complexity enables ambidextrous leaders to be aware of the differing requirements of the innovation process, situational and individual demands. Behavioral flexibility enables ambidextrous leaders to adapt his behaviors on the basis of this knowledge. Only through combining both competences he can flexibly switch between encouraging behaviors at the right time and situation.

When ambidextrous leaders chose to encourage exploration, they are expected to show behaviors linked to the assignment of resources, the linking of knowledge, the creation of a creativity-fostering work environment, the giving of autonomy and freedom, the encouragement of creativity by negative moods and the specification of tasks in which exploration is required.

Behaviors encouraging exploitation are linked to the development of routines, controlling and monitoring of employees, increasing employee's expertise and giving extrinsic reward.

Interestingly, the literature on fast-growing firms seems more engaged in researching behaviors encouraging exploration and creativity. This focus may be due to the fact that gazelle firms usually

overemphasize exploitation (Faems et al., 2011) so that ambidextrous leaders are required to specifically encourage exploration for balancing the firm's innovation activities.

Especially in fast-growing firms, success traps are likely to emerge because their high growth brings along numerous organizational challenges to which gazelle start-ups are most likely responding with structuring, streamlining and routinizing their company (Faems et al., 2011). These activities undertaken as response for fast-firm growth are again rather encouraging exploitation leading to the firm being trapped in a circle of exploitation.

Ambidextrous leaders are the core solution to this challenge as they are able to ensure continuous growth of the gazelle start-up by outbalancing inconsistent innovation activities. The author therefore expects to find high levels of ambidextrous leadership in the five case studies enabling her to study the competences and behaviors of ambidextrous leaders in rich detail.

The findings of the theoretical evaluation are summarized in the following framework of ambidextrous leadership:

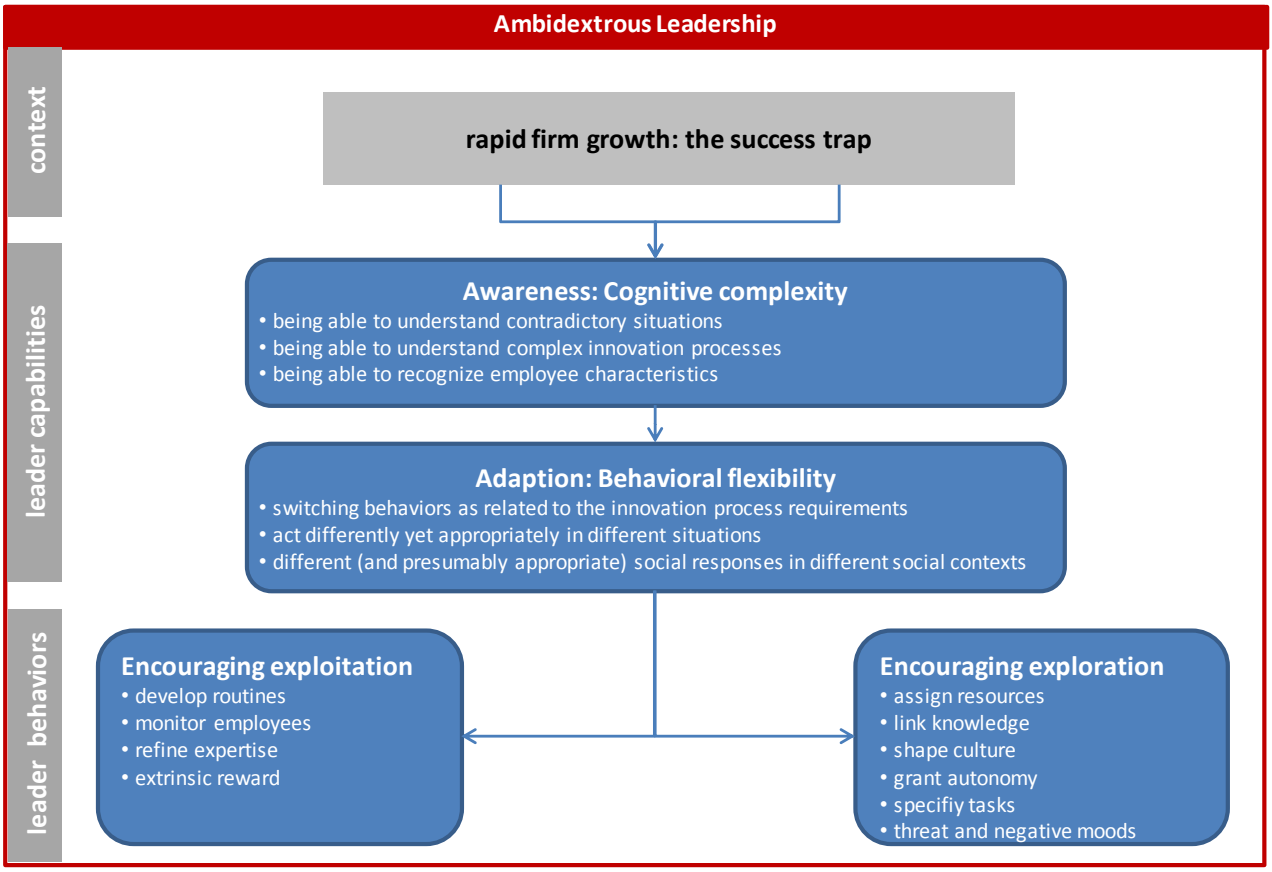

Figure 3: General Research Framework.

Applying the theoretical framework of ambidextrous leadership in the case studies, the author attempts to explore the data found on context, competences and behaviors of ambidextrous leaders further and thereby test and refine the theoretical model.

The following chapter will explain how the model is tested from a methodological point of view.

METHODOLOGY

CASE STUDIES AS A SCIENTIFIC METHOD

Qualitative research has an emphasis on processes and meanings that are hard to measure in terms of quantity or frequency but likely to gain insights and discovery (Denzin & Lincoln, 1994). The method of case study analysis enables the exploration and understanding of complex social issues. Case studies are applied when deep insights leading beyond statistical results are required (Feagin, Orum & Sjoberg, 1991). They are often applied for studying innovation-related issues (Yin, Bateman & Moore, 1985) and especially useful for investigating phenomena that can be observed in small companies (Harney & Dundon, 2006).

In the social sciences, case studies have been successfully applied in various types of investigations (Gibbert & Ruigrok, 2010). The method is designed to fundamentally discover the 'how' and 'why' questions of a system being examined to gain a rather holistic view of a complex social problem (Noor, 2008) and its contextual conditions (Yin, 1994), although limited literature is available.

Through case studies, it is possible to discover phenomena at the participant layer of analysis (Stake, 1995). They therefore aim at exploring unknown phenomena to prepare ground for future research instead of theory testing (Saunders, Lewis & Thornhill, 2009). Case studies are multi-perspective analyses, meaning that the researcher considers not just the voice and perspective of the actors, but also all relevant groups of actors and the interaction between them (Tellis, 1997).

They hold the risks of data overload (Baxter, 2008) and despite that selectively focus on one or two issues only (Tellis, 1997). Yin (1981) summarizes Miles (1979) critique on case studies, where he describes the method as being irrational and not scientific, and searches for answers to the 'case study crisis' (Yin, 1981).

Eisenhardt and Graebner (2007:30) attempt to minimize these challenges through '…careful justification of theory building, theoretical sampling of cases, interviews that limit informant bias, rich presentation of evidence in tables and appendixes, and clear statement of theoretical arguments.'

For building comprehensive theories from the multiple case studies undertaken, the author will hence follow the approach presented by Eisenhardt in 1989.

The first important step to enabling a comprehensive case study is the definition of a clear Research Question and of important constructs used in that question. The second step is the selection of a population for undertaking the case studies. This is followed by the selection of instruments used within the case studies. An important point is that data collection should be overlapping with data analysis, meaning that both steps should be done in the same time frame. Throughout the case studies, the researcher is supposed to take field notes, enabling him to remember important impressions from the field research during data analysis. The data analysis should be separated into two parts: within-case analysis (identifying unique patterns of each case) and cross-case analysis (identifying generalized patterns across cases). By doing so, the researcher is able to verify and sharpen hypotheses. Here, he should attempt to advance each hypothesis, present tables summarizing

the evidence and underlying constructs and verify that emergent relationships between constructs fit with the evidence found in each case. This procedure is rounded off by complementing data with literature. The author needs to compare found data, hypotheses and theories with the existing literature in the specific field and hereby search for similarities (increase validity, tie together old and emergent theory) and differences (present opportunities for new concepts, should be reinvestigated).

Finally, it is important for the quality of the study to find the right point for reaching closure. The researcher has to know when to stop adding new cases, which is the case when the data is theoretically saturated, i.e. new data no longer offers additional insights. Moreover, he has to know when to stop comparing data to the literature, which is the case when the incremental improvement of the generated theory becomes minimal by further comparison.

In order to improve researching skills, interview guidelines and the theoretical model used as a basis for the case-studies, the author will conduct a pilot case study interviewing the two founders of a Berlin-based start-up.

Each of the following five full-size case-studies consists at least of interviews with the CEO or a manager and one or two of his employees, as well as secondary company data like information from the company website and field observations.

SAMPLE

The sampling was undertaken in a qualitative non-probability style. In the course of the purposive sampling process, start-ups which fulfill the previously defined characteristics were identified and addressed. Through this approach the sample is not representative but gives detailed insights into the thoughts, feelings and outcomes of the interviewed persons.

Along the lines of Delmar et al. (2003), the definition of fast-growing start-ups applied for the purposive sampling can be systematized. Following his enumerations, there are four main issues addressed in the systematization of high-growth firms: (Delmar et al., 2003)

- Firm demographics
- Choice of growth indicator
- Measurement of growth
- Time effect

Considering firm demographics, firm size, age and industry need to be discussed as they have been found to have a large effect on the focus and results of gazelle research (Henrekson & Johansson, 2009).

The present thesis attempts to investigate fast-growing start-ups or gazelle start-ups. Through this special research lens, firm size and age are already constrained. Focusing on entrepreneurial firms, the participating companies should not exceed a size of 100 employees to still be classifiable as a start-up. Moreover, they should not exceed an age of ten years. Ensuring comparability across the different cases and minimizing extraneous variation (Eisenhardt, 1989), the research is focused on the

Internet industry investigating firms that have similar characteristics and industry conditions. The reason for choosing this industry is that currently many gazelle start-ups can be found in the Internet industry (Delmar et al., 2003).

The appropriate choice of the growth indicator applied to identify gazelles is the second point crucial to a thorough definition (Delmar et al., 2003). Delmar et al. (2003) name employment, sales, market share, physical output and profits as the most widely used growth measures.

According to Henrekson and Johansson (2009), gazelles are described by defining a 'particular pace' as for example a certain annual growth rate for a certain number of years. As fast-growing entrepreneurial firms sometimes have high growth rates in employment with limited growth of sales numbers, especially in the ICT and Internet industry (see for example the stories of high-growth companies like Facebook or Google, that grew rapidly in terms of users and employees but only started generating profits in later stages of their business development), the indicator used to measure growth will be employment.

Moreover, it is substantial to define the concrete method of measurement of the chosen growth figure(s). The most important distinction to be made is between the usage of absolute or relative growth measures (Delmar et al., 2003).

The thesis will make use of proportional or relative growth numbers by looking at the employee numbers at the beginning and the end of a period and calculating a percentage (Hölzl, 2009). As described by Bargen (2001), high-growth firms have an increase in headcount of at least 15% per year. The present study will follow this definition and measure employment growth in terms of absolute employee growth exceeding 15% on average.

As firm growth fluctuates over time, the fourth decision should be made on the time period used as a calculation basis to measure growth. Annual growth rates and growth rates between initial and final year are widely applied. In both cases it is important to determine over which length of time the growth measure should be met (Delmar et al., 2003).

According to Hölzl (2009:62), a gazelle must 'display above average growth within a specific period'. Building on the previously described definition of what is above-average growth in terms of employment the measurement will be based on the average annual growth rate over a period of three years.

Summarizing, the criteria for the purposive sampling approach allowed only the inclusion of companies fulfilling the following criteria:

- have less than 100 employees, are between 3-10 years old and active in the ICT sector,
- grow at least 15% in terms of employee numbers per year,
- over at least a period of at least three years.

Companies fitting to that definition and willing to participate in the case studies have been identified using personal research, network and attendance at a Berlin start-up conference.

A first sampling step consisted of contacting potential firms by e-mail or telephone throughout January and February 2012, which revealed three participants. In a second step, two further firms could be convinced to participate in the study at the EcoSummit 2012, which took place in March 2012.

The final sample consists of one pilot firm and five high-growth start-ups as defined in the research design. A general overview of the sample can be seen in Table 6.

Case	Name	Business	Founders	Foundation	Interview Partners
Pilot	Webly	Internet media	2	2009	CEO, CEO
A	Mobile	Internet media	3	2005	CEO, 2 E
B	Content	Software development	3	2004	CFO, COO, 1 E
C	Smart	Software development	3	2009	CEO, COO, 1 E
D	Plista	Internet media	3	2009	CTO, COO, 4 E
E	Booklet	Software development	3	2011	CEO, 1 E

Table 6: Case Overview.

The companies are all active in the Internet industry, specifically developing either Internet media services (like monitoring, website media services and ad placement) or Internet-based software (like apps that are connected to a website). They are hence characterized by the service aspect of their products, the strong reliance on programming and software development skills. Moreover, the six firms operate in the highly dynamic Internet market, leading to a high importance of innovation.

INTERVIEWS

The conducted interviews were semi-standardized, as such give frame to the discussion of several questions but also enable the interviewee to give new insights (Cassell & Symon, 2004). The semi-standardized interviews were opened with a short introductory talk. Then the interviewer started by explaining the research goals, the specific focus of the interview and important terms. Answers were followed up and clarified and the overall dialogue verified throughout the interview.

The interviewees' personal experience and interpretations of two specific situations in which ambidextrous leadership behaviors could have been shown were of special interest. Through the open questions, the interviewed leaders were valued as an active research participant.

Furthermore, the interviews were conducted in line with the ten commandments of interviewing described by Berg (2004), in order to ensure comparability and high quality levels. Specifically, these commandments mostly deal with the atmosphere and set-up of an interview. Exemplary points are to 'demonstrate aware hearing', 'interview in a comfortable place' or 'practice, practice, and practice some more' (Berg, 2004:110). To be able to follow these instructions for high-quality interviews the author also used a pilot case study in order to improve interviewing skills, set-up and guideline.

To reach a good degree of credibility in the evaluation of the interviews, the author followed Corbin and Strauss' (2008) criteria for good interviews. Corbin and Strauss (2008:302) define credible findings as 'trustworthy and believable in that they reflect participants, researchers, and readers experiences with a phenomenon' (Corbin & Strauss, 2008, p. 302). To achieve credibility, the

researcher made use of collecting data from different viewpoints (i.e. leader and followers). Moreover, she used 'in vivo' codes throughout the theory development and case analysis and provided detailed descriptions of the case surroundings and overviews on different steps of the coding process. To ensure credibility in the coding process, two other researchers have independently assessed the authors grouping and summarizing of codes. Critical points have been discussed with the two researchers and changes were made if applicable. In addition, the interviewed companies have been provided with the written transcripts and case studies and asked for additional comments, remarks or clearing of misunderstandings.

Apart from conducting interviews with leaders and collecting first hand qualitative data, research for appropriate secondary qualitative data was conducted, following the advice of Heaton (1998). This process of collecting and comparing data using multiple sources is called triangulation and enables a thorough analysis of the research questions based on different viewpoints (Saunders et al., 2009). Triangulation increases the validity of the data analysis and the research findings (Mathison, 1988). Miles and Huberman (1984:235) express the benefits of triangulation in the following way: '…triangulation is supposed to support a finding by showing that independent measures of it agree with it or, at least, don't contradict it'. Following the approach of Mathison (1988), triangulation is used as a method making the researcher responsible for plausibly analyzing and explaining the phenomenon studied instead of seeing triangulation as a one-fits-all solution for ensuring validity.

DATA ANALYSIS

The author followed the coding procedure suggested by Corbin and Strauss (2008). The first step was the transcription of the interviews. This process started as soon as the interview data was available and in parallel to the following case studies. Insights on the quality of questions or answers gained during the transcription were incorporated to the interview guideline.

In a second step, open codes were assigned to each interview by disaggregating the data into units described with labels and deriving their meaning directly from the data.

The next step was the axial coding, including the generation of different groups and the assignment of similar open codes to the groups through recognizing relationships between codes and rearranging them. For this, the researchers made use of the theoretical framework using the following abbreviations: 'E' for environment of the company, growth context, 'I' for current innovation activities, 'C' = leader competences and 'B' for leader behaviors. Moreover, the code category 'L' was used to create a general understanding of the leader as a person, his characteristics and traits.

After the open and axial coding of the first interviews, it became obvious that several interviewees saw their leaders in the context of their founding team. Only in a combination of different leaders they assigned a balance of encouraging behaviors. Following these insights, the category 'T' for insights on team dynamics, team set-up was included and used during the following interviews.

The last coding step was selective coding (integrating categories to produce theory, identifying a central core category to which the other categories are linked). This was accomplished by linking and organizing codes within one concept to create categories. These networked overviews were used as a

basis for generating insights and theory on each case and the cross-case analysis. The within-case networked overviews include only information and codes from the respective case while the cross-case analysis includes information from all five cases on each concept. All coding overviews can be found in the Appendix C-G.

Throughout the coding process, the author aimed to achieve originality (new categories and insights developed), resonance (degree to which categories fully capture the data) and usefulness (applicability in everyday settings) (Corbin & Strauss, 2008).

Originality was fostered by creating additional categories aside from the theoretical framework like the one on team ambidextrous leadership during the coding process. Moreover, the coding on behaviors was undertaken rather exploratory, enabling the researcher to create broad lists of potential behaviors encouraging either exploration or exploitation.

To achieve reasonable categories, each grouped concept overview has been revised by two independent reviewers. When a specific grouping approach remained unclear to the two reviewers, a discussion on potentially better grouping was initiated and the concept overviews were adapted accordingly. Additionally, the interview transcripts with open codes and the final case studies have been send out to the interviewees in order to gain insights on their applicability for the companies.

Following the approach of Eisenhardt & Graebner (2007) each part of the overarching theory is presented and underplayed with evidence from the five cases. To increase transparency and reliability, the author extensively uses tables and other visual methods summarizing the evidence. A separate table for each of the ambidextrous leadership constructs is used to present the data and construct measurement (Eisenhardt & Graebner, 2007). These tables also include selected 'in vivo' codes as evidence for construct validity and are tied closely to the narratives describing the cases.

The theory emerging from the case studies is linked to the data gathered throughout the case studies and compared with existing literature. Similarities discovered increase the validity of the results and tie together old and emergent theory. Differences present opportunities for new concepts and will be either reinvestigated by the author or proposed as future research (Eisenhardt, 1989).

PILOT CASE STUDY

The pilot case study was undertaken in order to gain first insights and experience with case-study research. Moreover, its aim was to improve the interview guideline and personal interviewing skills. Piloting the interview guideline showed the need to structure the questions in different sections more clearly. It moreover pointed out the need to include definitions of the most important terms like exploration or exploitation in the beginning of the interviews to set a common understanding.

Several questions that have been noticed to be difficult to understand have been rephrased. Furthermore, additional questions were included to the guideline after the pilot interview because they emerged during the semi-structured interview as follow-up questions and revealed interesting answers. The overall pilot interview took no longer than 20 minutes. Knowing this, the author could include further questions to the interview guideline and hence improve the depth of the case studies.

An additional benefit of the pilot interview is the preliminary understanding of the theoretical framework and its relation to the concrete case study data. By conducting the pilot case study, theoretically predicted aspects could be firstly approved and first additional variables that were likely to emerge during the five case studies seen.

The company chosen for the pilot case study is situated in Berlin. The first part of the pilot interview attempted to gain an understanding of the case environment, current situation and internal characteristics. Approaching a more specific level, several questions were asked to assess the founders' ambidextrous leadership extent and characteristics. The founders named several behaviors encouraging exploitation and exploration, although a clear distinction between the two was sometimes missing in their answers. The interview guidelines for the five case-studies shall hence include a detailed explanation and clarification of important terms.

Concerning the competences that enable ambidextrous leadership through balancing behaviors encouraging exploitation and exploration, several interesting findings could be made. First, the founders pointed out the fact that different people and situations require different behaviors. This supports the model derived from the theoretical literature proposing 'behavioral flexibility' as a main competence of ambidextrous leaders. Secondly, the founders stated that *recognition* of different motivational types of employees is an important competence when balancing the two types of behaviors. They thereby underline the competence of 'cognitive complexity' supplementing 'behavioral flexibility' in the theoretical model.

The pilot case study could therefore give first support to the proposed notion of ambidextrous leadership, which will be further tested in the multiple case-studies. The summarized codes found in the pilot case-study on the account of ambidextrous leadership are illustrated in Table 7.

Behaviors Encouraging Exploitation	Behaviors Enouraging Exploration	Balancing Competences
Clear requirements & expectations	Cooperative development	Recognize how people have to be motivated
Second view on problems	Clear communication of requirements	Different behaviors with different partners
Joint discussion of potential issues	Include ideas of employees	Depends on specific situations
Get employees convinced	Discussion of ideas in team	Depends on context
	Feedback is appreciated	
	Further improvement of ideas	

Table 7: Pilot Leader. Code Overview.

The major concepts that emerged from the theoretical literature have been paralleled by the answers of the pilot case study respondents. The pilot case-study hence reveals first insights concerning each research question, indicating the relevance and fit of the theoretical model.

The next section will analyze the multiple case-studies undertaken subsequently.

WITHIN CASE ANALYSIS

MOBILE

The interview transcripts and open codes for Mobile can be found in Appendix H. The overviews on Mobile coding categories are in Appendix C.

CASE DESCRIPTION

The company Mobile is active in the mobile app development industry and works as a development agency for large German corporations. It was founded in 2001, although at this stage it consisted merely in the cooperation of three programmers. In 2005 the three founders moved to an office and started building the company. Since then, several new employees have started working in the business, which today has 14 employees:

	2009	2010	2011	2012	Ø growth
headcount	5	9	10	14	**28%**

The company success builds upon several factors, of which one is the founders' and employees' know-how in the mobile business. Employee 2 describes this fact in the following way:

> *We are a rather young team, mainly do mobile business and are thus very specialized and have built a lot of know-how.*

They have specialized on specific clients and high-quality products, which is also highlighted in the geographical proximity to most of the customers. The company also builds on a social and friendly culture being reflected in the relations to its employees.

As an employee-centered business, Mobile highlights its strong cooperation between individual employees and teams as a competitive advantage. Moreover, a typical start-up culture including flat hierarchies, honesty in the inter-personal relations, fun at the workplace and spending time together after work has been established and upheld over the years.

This is reflected in the employees' high level of intrinsic motivation seen as a major factor for the innovativeness of Mobile (*It is more or less intrinsic motivation, CEO).* As employees are coached and given the freedom to develop, for example through visiting conferences or working in changing teams, they are constantly searching for new roles and bringing personal input to the creative potential of the company. Jobs are assigned mainly according to the skills and wishes of employees, who therefore show a high interest in their projects. The employees benefit from the good working atmosphere with clients by gaining new insights and knowledge.

The researcher interviewed the CEO and two employees of Mobile. The CEO of Mobile had no previous entrepreneurial experience when he founded his business. While studying Information Technology, he already started developing apps and founded the company with two friends after finishing his studies.

He holds an open dialogue with his employees reflected in his openness for discussion, differing opinions and employee feedback. Moreover, he acts as a role model, seeing the need for self-improvement by not assuming he always knows more than his employees. In his role as founder, he also acts as an idea-giver who is able to motivate employees. His leadership style is characterized by Employee 2 by a fair and friendly atmosphere, more cooperative than authoritarian:

> *I think a very good word is fair. He treats everyone equally; there is open dialogue between the leader and employee.*

This is also reflected in his good understanding of employee moods and the level of freedom and responsibility assigned to the employees as described by Employee 1:

> *He has a very open leadership style. He does give feedback if we are running into the wrong direction, but does not slow you down. If you can support your reasons and opinion with arguments, he is quite open. And if he believes that your argumentation is reasonable he sets few boundaries.*

Both, the leader and employees, state that most of the above-described characteristics also hold true in similar ways for the two other founders.

CONTEXT

The company operates in a dynamic market environment. Nevertheless, specialized know-how enabled high-growth. This growth is a challenge for leaders as they need to cope with the operational challenges of increasing employee and project numbers. Innovation is undertaken in a sequential way, by incorporating trends and knowledge coming from the customer projects in a timely manner.

The current high employee growth is seen as a result of the afore-mentioned success factors, but also as a major challenge for the three founders. It makes easy processes, flat hierarchies and fast innovation in response to the dynamic market environment difficult to manage:

> *Especially because of this fast change, the employee numbers are constantly increasing which is also a large challenge for us as leaders (CEO).*

Exploitation activities at Mobile are driven by the agency business model. In close cooperation to customers constant adaption processes take place and shape the current success of the company:

> *That is also due to the service provider business. We are very much driven by our customers. And the customer projects (CEO).*

The success of these exploitation activities enhances even more exploitation and in combination with the resources needed for organizing the fast-firm growth drives out exploration. This circle results in a success trap that Mobile is facing by means of sequential ambidexterity:

> *I would not want to have both types at the same time, but think about completely new things once in a while. (CEO).*

Fitting to the literature, where in a sequential ambidexterity context, leaderships main task is seen to be initiating change, at Mobile the three founders are seen to be responsible for initiating times of exploration:

> *You should not forget the initial situation, where you came from and then also make sure you keep a good balance even when growing rapidly. […] that you do not stop trying different things. The founding team should account for keeping that as part of the business culture (employee 1).*

They mainly do so when radical market changes occur and the company can no longer remain competitive if no exploration is undertaken.

LEADER COMPETENCES

The two competences cognitive complexity and behavioral flexibility are enabling the CEO to act ambidextrously and initiate change at the right moment of time. Table 8 summarizes the codes found for both competences.

cognitive complexity	behavioral flexibility
empathetic	applying different behaviors
sensitive to employees characteristics and needs	differing coaching for different employees
good listener	able to adapt to differing circumstances
people skills	differing behaviors in different situations
see employees problems	differing style for different employees

Table 8: Mobile, leader competences. Code overview.

Looking at cognitive complexity of the CEO, it becomes obvious that he is especially good in being aware of individual demands as all of the codes found are related to his competences with regard to people. His abilities in understanding situational and innovation process demands seem to be less pronounced. Employee 2 highlights the cognitive competences of the CEO in the following way:

> *Mainly on a personal and people level. That means he is very well able to deal with people. He has a very personal binding to his employees and is a carrier of sympathy in this company.*

Assessing the codes found for behavioral flexibility, the CEO also shows to be able to adapt his behaviors to different circumstances and situations. The theory of Denison & Hooijberg, (1995) states that adaption of behaviors is be based on awareness through cognitive complexity. This implies that leaders having a large cognitive understanding of individual demands are able to compensate fewer awareness of situational and innovation process demands. They are still able show behavioral flexibility expressed in actions adequate to situational circumstances because seemingly awareness can be created by different means.

Combining the two competences, the CEO is able to find and adequately apply ambidextrous behaviors: *This means motivating for change but also for perfectionism (CEO).*

The concrete behaviors exhibited by the CEO to encourage both types of innovation are discussed in the following section.

The above-described competences are seen by the interviewees to enable ambidextrous behaviors (as illustrated in Table 9) that are associated with the difficult task of balancing exploitation and exploration. Throughout the interviews, it became clear that the investigated leader is indeed showing both types of behaviors. The single codes have been grouped and linked in order to gain a better understanding of the most important behavioral types.

Behaviors encouraging exploitation	Behaviors encouraging exploration
Be open to new ideas	Be open to new ideas
Give freedom and responsibility	Give freedom and responsibility
Give feedback	Hold constant dialogue
Encourage persistence	Engage in projects with no monetary reward
Discuss approaches together	Encourage knowledge transfer
Design interesting projects	
Search for external input	

Table 9: Mobile, leader behaviors. Code overview.

The CEO surprisingly does not show a lot of structuring and routine developing behaviors for encouraging exploitation. Overall, the behaviors named throughout the interviews are not in line with the suggestions of the literature, namely develop routines, controlling, foster expertise and give extrinsic reward. They rather seem to go in the direction of the literature suggestions for encouraging exploration:

Behaviors encouraging exploitation	Literature suggestions for encouraging exploration from TF
Be open to new ideas	shape culture
Give freedom and responsibility	grant autonomy
Give feedback	
Encourage persistence	
Discuss approaches together	specify tasks
Design interesting projects	
Search for external input	link knowledge and persons

Table 10: Mobile, leader behaviors: comparison case and literature.

Apart from the behavior groups originally expected to encourage exploration, giving close guidance in the approach for exploitation and feedback to encourage exploitation of followers were specially highlighted by employees and the leader himself:

Behaviors encouraging exploitation	sub codes	Quotes
Give feedback	watch employee's work & give feedback	*CEO is proactively having a look at employee's work and giving us feedback if someone build a good app. (employee 2)*
	value employees work	*It is also important to know that your work is appreciated and taken serious by the leaders. (employee 2)*
	reviews and feedback	*But you also have to get together again in certain times frames and reflect on what you have reached so far (employee 1)*
Discuss approaches	search for potential	*[…] you can then together think about potential solutions and*

together	improvements together	*improvements […] (employee 1)*
	support employees in further development	*[…] for sure, I have a look on the task and see if there is something more I can do […] (CEO)*
	trigger ideas together in the beginning	*I do like it to sit down together with the leader and start thinking about some idea to give impulse. And I can then further develop the idea. (employee 1)*

Table 11: Mobile, giving feedback and guidance.

The codes for giving feedback can to some extent be linked to the giving of extrinsic reward discussed in the literature. For the employees it seems to be important to receive praise and extrinsic reward for the results of their exploitation but they also value constructive feedback and support throughout the process.

The behaviors encouraging exploration discussed in the interviews are better fitting to the theoretical framework. The employees and the leader discussed behaviors related to the linking of knowledge and persons (encourage knowledge transfer), the granting of autonomy (give freedom and responsibility) and the shaping of company culture to foster intrinsic motivation (be open to new ideas, engage in projects with no monetary reward).

In addition, holding a constant dialogue to employees has been expressed by employee 2 as valuable for his exploration activities:

> *On one side, you often have a certain type of exchange. That means we have a look on other people's work once in a while and give them feedback.*
>
> *That is why I do see the leader in a consulting role meaning, a person you can go to with difficult questions and discuss them proactively. And also stay in constant dialogue.*
>
> *We receive fast feedback and are thereby motivated to work harder than one would normally need to.*

This is comparable to the giving of feedback and discussion of approaches for encouraging exploitation. Some guidance throughout the innovation process exhibited by the leader is described to be encouraging both types of innovation.

Overall, in the case of Mobile, the behaviors encouraging exploitation and exploration are relatively similar and rather going in the direction of the expected behaviors encouraging exploration.

CONCLUSION

Summarizing, the ambidextrous leadership at Mobile is driven by its success trap situation. The key task in this context is not to show an equal balance of behaviors encouraging exploitation and exploration. The founders need to balance out the overemphasis on exploitation by specifically initiating exploration.

The CEO has understood the risk for an overemphasis on exploitation in his company and the challenges fast-firm growth brings along. He reacts to that in a rather sequential way, focusing on exploitation for some time and initiating change as soon as market developments become too

pressing. The CEO does not apply a single focus on the current success of his company but attempts to ensure continuous growth.

He is able to do so because of the awareness of the unbalanced innovation activities of Mobile created by his cognitive complexity and ability to re-shift his focus as the market environment demands.

His cognitive complexity builds on the CEO's great understanding of his employees and their individual demands. Interestingly, he is able to compensate potentially lower awareness of the situational and innovation process demands by listening carefully to his employees and choose the right encouragement type according to these people skills.

The two competences cognitive complexity and behavioral flexibility of the CEO well supplement each other so that he is shifting behaviors according to his awareness of the complex situation.

By knowing that exploitation at Mobile is driven by the agency business already, the CEO focusses on initiating exploration in an extent that makes even his behaviors encouraging exploitation be somewhat linked to the encouragement of exploration. He thereby shows high levels of ambidextrous leadership and is successfully able to ensure short-term and long-term success of Mobile.

Nevertheless, in the current sequential ambidexterity a large amount of responsibility for initiating exploration rests on the shoulders of the founding team. In order to cope with the success trap when the company becomes even larger, they should start working on generating some extent of contextual ambidexterity. By doing so, some responsibility for exploration would shift from the founders to employees making the overall balancing of innovation activities better balanceable.

The route towards contextual ambidexterity is to shape the company's culture in a way that makes individual employee's switching between exploitation and exploration fostered and acknowledged.

CONTENT

The interview transcripts and open codes for Content can be found in Appendix H. The overviews on Content coding categories are in Appendix D.

CASE DESCRIPTION

Content was founded in 2004 as a German GbR by two of the founders and formally became a legal entity in 2007 when the third founder joined the company. The employee numbers developed as shown in the table below:

	2009	2010	2011	2012	Ø growth
headcount	33	41	45	52	**22 %**

The start-up is active in the field of web development and works for several large German clients. The company cooperates with many freelancers. Interviews could be undertaken with the CFO, the COO and one employee. The two leaders describe their leadership style in the following way:

I lead rather cooperatively and along the lines of ‚primus inter pares', I seldom lead in a very hierarchical manner. (CFO)

I would say that […] I lead rather cooperatively, on par with the employees and try to incorporate employee wishes as soon as possible. (COO)

As both of them are also working in the customer projects aside from internal organization, they could establish a close cooperation with employees, including giving fast support if needed. This coaching is undertaken individually with each employee and incorporates their development wishes. Moreover, the founders act as idea and impulse givers.

The company culture designed by the founders encourages employees to think out-of-the-box and fulfill high quality requirements also because they are offered a broad variety of training and development activities. The following codes have been assigned to describe the culture of Content:

Discussion culture	Friendly business culture
Country club	Employee-centered
Cooperative culture	Flat hierarchies
Casual culture	

Table 12: Content, company culture. Code overview.

However, the CFO of Content reports that too few innovative ideas are expressed by the employees:

What we could improve would be to actually have some of these ideas.

CONTEXT

Due to the very dynamic market environment, the interviewees describe short innovation cycles and difficult planning activities. Nevertheless, the company has a good market position mainly due to its flexibility in responding to customer wishes and close customer contact.

The start-up has experienced a growing customer base throughout the last years, so that daily business is becoming increasingly challenging as a high number of projects have to be fulfilled simultaneously. The COO describes the challenges of fast growth for Content in the following words:

We are currently very much preoccupied with the daily business – all of us: the employees and also the three founders. […] It is simple: when an innovation is there, you need to have the time to examine it, test it and so on. That has been happening less frequently lately, because the organizational effort is higher and there is a lot of project pressure.

Content also experiences a trade-off between exploitation and exploration. The current focus lies on exploitation. Only recently the leaders started to notice that long-term success is at risk if no exploration takes place. They do some exploration activities periodically in the customer projects but unfortunately knowledge is not transferred to generate internal exploration.

Besides sequential ambidexterity driven by the agency business model, Content also started to design context for contextual ambidexterity recently. Acknowledging that it is difficult to separate

exploitation and exploration in the web business, employees are involved in decision-making and seen as initiator of exploration processes.

For very good ideas, the company also founds completely new businesses, which are a first step into the direction of structural ambidexterity. Moreover, several statements were made by the leaders that show the recent wish and intent to strengthen structural ambidexterity (in grey). Table 13 compares the codes found on each type of ambidexterity:

Structural Ambidexterity	Contextual Ambidexterity	Sequential Ambidexterity
• the more people the more structure needed to still find time for innovation • wish for structural division of innovation team • no structural difference between both types • wish for one person working on idea with 100% • found new company for good ideas	• employees are involved in decision-making • difficult to separate exploration and exploitation in web business • exploration and exploitation are both parts of a constant process • employees are able to think self-dependently • let the initiative come from the employees	• exploration rather periodically

Table 13: Types of organizational ambidexterity at Content.

In a nutshell, Content is very active in generating organizational ambidexterity. Although currently focusing on a combination of contextual and sequential ambidexterity they also aim on building structural ambidexterity. In addition to organizational ambidexterity, the two investigated leaders also foster a balance between exploitation and exploration.

LEADER COMPETENCES

This is enabled especially by the competences cognitive complexity and behavioral flexibility. As in the Mobile case, several codes could be made on this account, which are summarized in the table:

cognitive complexity	behavioral flexibility
sensitive to employees characteristics and needs	differing behaviors in differing situations
knowledge of human nature	behaviors depending on specific employees
ability to choose right employees	differing coaching for different employees
knowing where to assign employees according to their skills	

Table 14: Content, leader competences. Code overview.

The knowledge of employee's needs is well pronounced enabling the leaders to shape the company culture for enabling contextual ambidexterity in the company. Based upon cognitive understanding the leaders are also able to switch behaviors according to the different employees or situations.

LEADER BEHAVIORS

Several behaviors encouraging innovation that could not be assigned specifically to either exploration or exploitation have been described at Content. These are taking time for innovation (including

getting employees out of project work sometimes), financial incentives and process optimization (including setting the right conditions for innovation and structural division of the innovation team).

Moreover, it is apparent from the case study that there are more behaviors encouraging exploration than behaviors encouraging exploitation exhibited by the leaders.

Behaviors encouraging exploitation	Behaviors encouraging exploration
give freedom and responsibility	give freedom and responsibility
support employees in further development	found new company for good ideas
encourage team work	trainings
constantly review work	cooperative development
tools as assistance	customer contact
search for potential improvements together	discuss ideas
assist employees in discussing issues together	customer contact
trust in employee's opinion	assign interesting tasks
customer feedback	get employees involved in decision-making
feedback	encourage search for new ideas
	coaching of employees to get more creative
	encourage further idea development
	idea workshop
	let the initiative come from the employees

Table 15: Content, leader behaviors. Code overview.

Comparing these findings to the literature, the image for exploitation again is ambivalent. The development of routines and the monitoring of employees paired with corrective action described in the literature were discussed also in the interviews (tools as assistance, constantly review work, support employees in further development, search for potential improvements together). However, also granting autonomy (give freedom and responsibility) was described. The literature originally linked this behavior to encouraging exploration but in the case study it seems to matter also for exploitation.

In addition to previous research, the interviews revealed the encouragement of team and trust in employee's opinion as beneficial for exploitation.

Looking at behaviors encouraging exploration, the overall behaviors shape culture, grant autonomy and specify tasks described in the literature review were found. Additionally, cooperative development again seems to be of importance for exploration.

The codes request ideas, get employees involved in decision-making, coaching of employees to get more creative, let the initiative come from the employees and idea workshop are all going in the direction of the leaders main task in a contextual ambidexterity setting: designing a context open for creativity and individual initiative.

Enabling employees to have close customer contact and gain their feedback is a behavior encouraging both types of innovation activities. It is driven by the agency business context of the case study. Nevertheless, customer contact has been proven to be important for innovation as new market developments can by this mean be transferred to the company (Taylor et al., 1990; Lin & Mc

Donough III, 2011). Especially in a contextual ambidexterity setting, it is important that employees can benefit of the contact to customers and by that initiate exploitation or exploration processes individually.

The employee mentioned several additional behaviors that would encourage his exploitation and exploration. These were financial incentives, process optimization and giving feedback. The wish for more feedback given by the two leaders can be related to the afore described need for customer contact as the employee especially wishes for sharing and discussing project-specific feedback and lessons learned from the projects:

Codes	Quotations	Interview
Give feedback	*I would wish for a little more feedback.*	Employee
Project-specific feedback	*A few more things like project-specific feedback.*	Employee
Discussion of lessons learned	*That you reflect on things in retrospective and discuss what went well or wrong.*	Employee
Transfer of feedback from customers to employees	*Maybe also that the founders talk to the clients and transfer this kind of feedback to the employees. As a founder you could ask the customer how the cooperation was working out.*	Employee

Table 16: Content, feedback. Code overview.

Overall, the leaders exhibit more behaviors encouraging exploration. This is due to the fact that the company currently has an overemphasis on exploitation because of its business model and leaders need to outbalance this tilt.

Interestingly, several statements were made by the CFO that the two innovation types are not specifically encouraged:

Codes	*Quotes*	Interview
not intentionally encouraging exploitation	*I do not think that I consciously encourage exploitation.*	CFO
no need for special motivation	*I do not think that this is necessary.*	CFO
no direct encouragement of exploration	*I do not specifically encourage creativity.*	CFO

Table 17: Content, leader behaviors CFO. Code overview.

However, as described before, he does possess the competences and shows differentiated behaviors encouraging exploitation and exploration, so it might be thinkable that he is rather doing so intuitively than in a planned manner.

TEAM COMPOSITION

One topic, which has been discussed several times by the interviewees at Content, was the fact the three company founders are acting ambidextrous as a team and their different abilities are supplementing each other. The following statements made by the interviewed employee underline this finding:

> *I do believe that we have three very different founders. There is always one who is able to do certain things better than another.*

One of the founders has a very technical working area, the other one is rather active in a communicative field and can best work with customers, the third one is responsible of the administration. So everyone has his subarea in which he is best and has the greatest competences. In my opinion, they are supplementing each other well.

This team composition leading to a balance of founder activities and to some extent shared ambidextrous leadership seems to be an important determinant of ambidexterity of Content.

CONCLUSION

The need for constant innovation is articulated by the interviewees at Content. The start-up seems to be on the right path recognizing that long-term success cannot be built only on exploitation activities which are already quite established at the company. This is why the leaders are currently focusing on encouraging exploration. The potential risk of this chronological approach, encouraging each innovation type sequentially and separated from each other, is a major difficulty in balancing both activities. This way one type will always be undertaken too little, while the other is encouraged heavily.

Being aware of this risk, the company somewhat combines sequential with contextual ambidexterity. Leaders place high emphasis on designing a culture in which individuals can split their activities between exploitation and exploration self-determinately.

However, exploration activities are still mostly undertaken in cooperation with customers during the client projects. These observations suggest that there is little internal exploration happening at Content. Transfer and sharing of new knowledge from the customer projects to the internal organization and processes is still missing.

The CFO, being less in contact with innovation activities due to his role in the company, does not see a special need for differentiated encouragement of exploitation and exploration. Anyway, he does show behaviors adapted to the situation and employee but more in an intuitive than determined way.

For Content, innovation must have a known goal and the right persons to implement it. Moreover, it is essential that there is enough time associated for innovation activities which can only be acquired by structuring the business as soon as employee numbers grow rapidly. Leaders are aware of the growing need for structural ambidexterity and started separating some innovation activities by founding completely new companies for very explorative ideas.

SMART

The interview transcripts and open codes for Smart can be found in Appendix H. The overviews on Smart coding categories are in Appendix E.

CASE DESCRIPTION

Smart is specialized on mobile app development. As the two previous ones, it mainly works for its clients in an agency business. The company is quite young in terms of the founding year, 2009, and

the average employee age. It benefits from the founder's previous business experience with a large customer network leading to rapid growth:

	2009	2010	2011	2012	Ø growth
headcount	5	9	23	42	**45 %**

The company culture is comparable to the previous two case studies, which are characterized by informality, flat hierarchies, openness, fun and cooperativeness. Currently, Smart works on professionalizing its offerings and testing new business models aside from the classical agency business:

> *We are currently enlarging our competences in order to be able to consult customers. Thus, you can see that we are adding completely different and new business models to the pure app development. (COO)*

The leader interview focused on the COO of Smart. He joined the company after finishing his university education and had no previous business experience. The general expectations towards leadership, the COO's self-evaluation and the external views on his leadership style are summarized in the Table below:

General expectations	COO self-evaluation	COO external evaluation
Building an organization that is open to innovation	Clear communication	Balancing different interests
Flexibility important for fast-growing firms	Cooperative	Giving freedom
Step back from operative business	Encouraging employees to push their limits	Giving responsibility
Founders as strategists	Encouraging employees to work efficiently	Iterative
Giving market developments and knowledge to employees	Give vision	Motivator
Leader as idea giver	Good understanding of people	Support if needed
Market knowledge	Knowing employee needs and skills	No technical knowledge
Role model	Motivator	
	Not good in providing (constructive) criticism	

Table 18: Smart, leader self and external view. Code overview.

The COO moreover is described as very good motivator and a balancer of different interests in the company.

CONTEXT

The company operates as an app developer for its customers in an agency business model. The role as service provider influences the balance of innovation activities at Smart and leads to a focus on exploitation. This is expressed by the CEO in the following words:

> *We are operating on a classical agency business model with the app development. That is why I believe that it will always be a core aspect of our work to further develop our service.*

The company sees exploitation as the core innovation activity, not only ensuring short-term but also long-term growth.

That is the very most important activity for us. Only by exploiting, growth is possible and therewith also long-term success. […] Even if you have a very good product in the beginning, it can be rapidly imitated by competitors. Especially then you need to be able to continuously advance and improve the starting product.

Exploration on the other hand is described as being important for the overall society.

Exploration is what brings us forward as a society. Through it the life of everyone or especially our target group changes.

The importance of exploration for the company itself is not acknowledged to its full potential. Founders describe exploration activities to be undertaken in a sequential manner and without incorporating them into the general business activities.

Despite the fact that exploration is assessed to be less influential on the success and management of Smart, the founders are, presumably intuitively, fostering a culture fruitful for creativity. They value openness and flexibility in employee's working conditions and foster a context of learning and knowledge exchange. These researcher observations imply the reasoning that contextual ambidexterity plays a role for dealing with the trade-off between exploitation and exploration. Even if this type of organizational ambidexterity is not knowingly encouraged by the leaders, their shaping of the company culture fosters it.

LEADER COMPETENCES

Competences enabling a leader to balance exploitation and exploration described by the interviewees of this case study are communication skills, acceptance of own mistakes, intelligence, calmness, assertiveness, goal-orientation, enthusiasm and structural thinking.

Besides, several statements that can be aligned to cognitive complexity and behavioral flexibility were named:

Category	Codes	Quotes
Cognitive Complexity	Understanding different motivational types	*That depends on the different motivational types.*
	Able to read body language	*body language is important*
	Sensitive to employees' characteristics and needs	Does he adapt to each employee? *Yes, definitely.*
	Empathetic	*I am very sensitive and alert*
	Open relationship to employees	*[…] that leads to people liking to come to me with their problems and having a very open relationship with me.*
	Knowing the right employee for each innovation type	*Someone who is very accurate is always the one that should be responsible for results. Someone who is full of new ideas is always the one that should work in innovation processes.*
Behavioral flexibility	Applying different behaviors	Are you dealing with different employees and situations differently? *Yes, definitely*
	Different coaching for different employees	*The others are motivated differently.*

	Assign employee tasks according to their skills	*I would make them work in two different rooms and teams.*
	Assign employee tasks according to innovation process	*You could separate that into two distinct phases, so that the very creative one would rather work in the beginning of a project and give a lot of input. But I would take such an employee out of the process in the end, because at this stage you do not have time for changes and new ideas, the product needs to become finalized. For doing so, the other type would be better suited.*

Table 19: Smart, leader competences. Code overview.

However, one statement of the interviewed employee contradicts the other codes for behavioral flexibility to a certain extent:

> *He is always the same type. I do not think that I had many situations where he changed. Sure, if there is a deadline, the pressure becomes slightly different.*

Again, the leader possesses very pronounced awareness of employee characteristics and translates this cognitive complexity into employee-specific behaviors and coaching.

Moreover, he is able to understand different motivational types and with that possesses basic knowledge on the innovation process (as reflected in the literature, employees doing exploitation are motivated rather extrinsically whereas employees doing exploration are motivated rather intrinsically). This knowledge is also linked to his ability to assign employees tasks differently according to requirements of the innovation process.

The leader's high awareness of and adaption to employee's characteristics and motivational types is potentially valuable for a more in-depth being able to foster contextual ambidexterity.

LEADER BEHAVIORS

The COO of Smart exhibits a broad variety of behaviors encouraging both innovation types. The overall groups of behaviors are shown in Table 20.

behaviors encouraging exploitation	behaviors encouraging exploration
enable good working conditions	give freedom and responsibility
coach employees to think abstract and ambivalent	team discussion
let employees understand importance of exploitation	interest in employee's ideas
customer wishes	give impulse
discover reasons for problems with task	give feedback
	financial incentives
	assign next tasks

Table 20: Smart, leader behaviors. Code overview.

Although he mentioned exploitation to be of specific importance to the start-up, the leader shows a little more behaviors encouraging exploration, presumable intuitively responding to the business' overemphasis on exploitation.

His behaviors encouraging exploitation are not in line with the theoretical findings on potential behaviors. There is no setting of routines, monitoring and refinement of expertise or giving of extrinsic reward shown by the leader. In contrast, his behaviors encouraging exploitation can again rather be linked to the literature suggestions for encouraging exploration.

By enabling good working conditions and coaching employees to think abstract and ambivalent he is shaping the company culture. By letting employees understand the importance of exploitation and discovering reasons for problems with task he is specifying and explaining the task at hand.

Customer wishes once again play a role for the motivation of employees to exploit:

> *If the customer then tells us to work on the important things first and the details later, we do it like this. So sometimes we do things rather imperfectly, so that we can finish a lot of work (employee 1).*

As discussed before, the close customer contact brings along knowledge from outside of the company that when transferred to the individual employee initiates motivation to innovate.

Examining the COO's behaviors encouraging exploration, several literature categories become visible (granting of autonomy, linking of knowledge and persons, shaping of culture, specification of tasks). Additionally, giving feedback and giving impulse and team discussions are important for the employees to undertake exploration.

The leader gives impulses for idea generation by the following means:

Code	Quotation
Assign energy of employees to ideas	*That is a little like taking his energy and assigning it to new topics.*
Encourage employees to work on a specific topic	*[…] finally it is important to encourage people to think about a certain topic.*
Let employees write articles on specific topic	*[…] knowledge blog on which new ideas can be discussed […]*

Table 21: Smart, impulse for idea generation. Code overview.

The code category team discussions includes, inter alia, idea workshops, discussions about ideas after normal working hours and an internal blog as a platform for discussion and is hence related to the linking of knowledge described by Tushman and O'Reilly (2008).

The interviewed employee also named financial incentives as a motivational factor for coming up with own ideas. As an extrinsic reward, financial incentives were expected to be encouraging exploitation so that the case study findings are not in line with the scholarly research (e.g. Amabile, 1996).

CONCLUSION

Seeing innovation as the basis for market success, the company deals with the trade-off between exploitation and exploration by building innovation into their products and processes in a sequential

way. This means that they are making a chronological instead of a structural difference between exploitation and exploration.

The company leaders highlight the importance of exploitation for the start-up and describe exploration as being less influential on the company success. Increasing exploration activities is a rather long-term goal undertaken mostly because of difficulties of current products on the market and not in the current agenda of the company.

However, the COO does actually show a number of behaviors encouraging exploration and also possesses both cognitive complexity and behavioral flexibility enabling him to lead ambidextrously.

So overall, the view on innovation activities at Smart is ambivalent: as described by the interviewees the focus is very much on exploitation but as observed and analyzed by the researcher explorative activities are also encouraged leading to a balance of innovation types. The leaders hence seem to act rather intuitively on the success trap implied by fast growth and agency business.

The same holds for organizational ambidexterity. The interviewees actively describe a sequential difference between exploitation and exploration. In addition to that, several statements made imply that contextual ambidexterity is fostered by leaders by shaping the company culture and coaching individual employees to act ambidextrously.

Reflecting on the high awareness of employee characteristics demonstrated by the COO, it is advisable and possible to take a more proactive approach in fostering contextual ambidexterity. By combining the ambidextrous leader's guidance and individual's initiative the company will better be able to find a fruitful balance of exploitation and exploration.

This will also lead to a better awareness of the company's need of exploration for being able to grow continuously.

PLISTA

The interview transcripts and open codes for Plista can be found in Appendix H. The overviews on Plista coding categories are in Appendix F.

CASE DESCRIPTION

The case study of Plista was the most extensive one. The company is growing fast with high employment growth:

	2009	2010	2011	2012	Ø growth
headcount	17	32	61	80	**40 %**

The start-ups success roots on the good, up-to-date and innovative product, the customer-orientation with personalized service, motivated workforce and well distributed team. Additionally, the flexibility of the company enables fast development processes and up-to-date products.

At Plista, the COO, the CTO and two employees from each of their teams were interviewed. The two leaders have contrasting leadership styles. The following table compares their core leader characteristics:

CTO	COO
Specialized education	Studied business administration
Personal	Previous entrepreneurial experience
Organizer	Building an organization that is open to innovation
Idea giver	Management by goals
Quantitative	Informal
Role model	Wants to make people think on their own
Open	No clear communication
Giving freedom	
Has to enforce exploitation when employees want to do too much exploration	

Table 22: Plista, leader characteristics. Code overview.

CONTEXT

Plista is active in the same dynamic market as the three previous cases and currently has a good market position. Currently, the company is challenged by the rapid business growth and has to deal with increasing employee numbers and growing teams that are difficult to manage by the current flat hierarchies.

At the same time, Plista is flexible in adapting its idea and organization, developing core organizational competences and extending the current business model and product line.

Plista is very open to new ideas. It is designing a work environment that fosters creativity of employees and benefits of a very innovative technology. The business culture is described as familial, cooperative, young, open, fun, casual, free, unorthodox and stress-free. The leaders and their HR team attach great value to selecting employees that fit well to this culture.

By designing a culture open to employee initiative and creativity, the founders foster contextual ambidexterity. There is no organizational alignment of different innovation tasks and innovation is undertaken more intuitively and in a sequential way by the leaders and each individual employee.

With the employee numbers of 2012 being around 80 employees, the start-up is experiencing difficulties to find a healthy way of growing out of its start-up structures. This step is necessary because current hierarchy levels lead to very large team sizes and the company's processes as well as systems will soon be no longer able to manage the business.

LEADER COMPETENCES

A great strength of the COO is his cognitive ability and flexibility in dealing with differing employees. He is described as taking a balancing role between the two other founders, by showing

these two competences. The table below summarizes the findings and quotations from the interviews on the COO's competences:

Category	Codes	Quotes	Interview
cognitive complexity	Open to employee's problems	*He almost always listens to our problems […]*	Employee 2
	People skills	*[…], he has a very good feeling for people. I think that is his greatest competence.*	Employee 1
	Sensitive to employees' characteristics and needs	*He is able to read people psychologically very rapidly, what kind of person is that, how does he behave in relation to others, what are possible mental problems and all of these things are well visible to him.* *Yes definitely, he knows exactly what everyone is doing and that is also what I expect from a leader.* *He can rapidly understand people.*	Employee 1 Employee 2 Employee 2
	Good listener	*He is a good listener.*	Employee 2
behavioral flexibility	Very adaptive to situations and people	*[…] he is very adaptive; I do not know another word for that.*	Employee 1
	Able to find the right behavior for every circumstance	*Yes, definitely. You can notice that very clearly because our organizational team has around 10 people, including him. And I think that he very consciously chooses the way he behaves depending on the situation.*	Employee 1
	Able to adapt to differing circumstances	*Yes definitely. I think he is very well able to adapt and behave appropriately, while his core values would not change I think.*	Employee 1
	flexibility	*Flexibility is definitely important.* *He is very flexible.*	COO Employee 1

Table 23: Plista, leader competences. Code overview.

For the CTO, more competences aside from cognitive complexity and behavioral flexibility were described, whereas for these two fewer codes and quotations could be found. The capabilities of the CTO are: friendliness, visionary, persistence, fast thinker, organization talent, collector of feedback from the market, structural thinking and expertise.

Employees also describe his cognitive ability to read people leading to ambidextrous behaviors and the ability to encourage both innovation types. He was also assessed to be showing differing behaviors in different situations and different styles for each employee. One contradicting opinion described him to not be showing behavioral flexibility:

> *I've never experienced that he would adapt in that way. Maybe he adapts according to his temper, I would think so, but that depends on him and not his employees. (employee 1, CTO)*

Summarizing, the COO is not only able to balance both innovation types but also seems to the balancing force in the founding team. The CTO has a large number of competences aside from cognitive complexity and behavioral flexibility.

LEADER BEHAVIORS

On account of the extensive case study with a total of six interviews, numerous behaviors encouraging exploitation and exploration could be found for both leaders. The following table summarizes the most important behavior groups, a detailed overview of categories and codes can be found in the Appendix F.

	Behaviors encouraging exploitation	Behaviors encouraging exploration
CTO	Feedback	Including external knowledge
	Project management	Information exchange with employees
	Weekly team meeting	Praise
	Analyses	Giving impulse
	Perfectionist	Dialogue with employees
	Combination of transparency and empowerment	Knowledge and progress open atmosphere
	Focus of management and team is sifting intuitively	Structure
	Not perfect yet	
COO	Incentives and praise	Building creative atmosphere
	Design reasonable tasks	Interest in employee's ideas
	Give advice	No specific behavior for encouraging exploration
	Clear goals and expectations	
	Control	
	Intuitively encouraging exploitation	
	Positive feedback	
	Team events	

Table 24: Plista, leader behaviors. Code overview.

Both leaders are showing a broad variety of behaviors encouraging exploitation. For the CTO these behaviors are important, because he needs to balance out the over-motivation of his employees to explore:

> *The CTO is rather the type that has to stop employee's exploration activities and their tinkering and tell them to start working on something new (employee 1, CTO)*

The behaviors encouraging exploitation shown by the two leaders can be perfectly linked to the behavior groups described in the literature. Developing routines, monitoring goal achievement, refine expertise and extrinsic reward can all be seen in the list of behaviors above.

The behaviors encouraging exploration shown by the CTO have a very large variety and number including all behavior groups described in the literature review without threat and negative moods while the COO merely focuses on shaping the culture for encouragement of creativity.

A very interesting finding on this account is that the CTO seems to have some difficulties exhibiting behaviors encouraging exploitation (*I think there is some potential for improvement on that account. employee 1,*

CTO) whereas the COO does not apply specific behaviors encouraging exploration (*Good question, I do not have a specific tool. I would say 'that is right you can do it this way, think about the problem and make a plan, but without a specific behavior. COO*).

TEAM COMPOSITION

The interesting fact that one of the two leaders seems to encourage merely exploitation, while the other focuses on exploration suggests the conclusion that ambidextrous leadership is to some extent separated within the founding team members. Several codes could be made on the account of this consideration, which are shown graphically below:

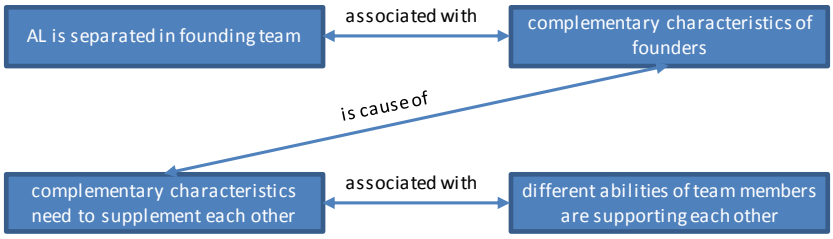

Figure 4: Plista, team factor. Code overview.

In addition, the employee 1; COO described the founding team as the CTO being the head of the business, the CSO being the body of the business and the COO being the heart of the business balancing the other two:

> *I would say that the COO is like the heart of the three founders. The CSO is the sales person and has significant contact with external partners and is the executive body of Plista. The CTO is the head; he is very thought-guided and technology-driven. And the COO is actually a bit in between, he has a very good feeling for people.*

So the three leaders seem to form a triangle of style, competences and behaviors that only work out at Plista because they complement each other:

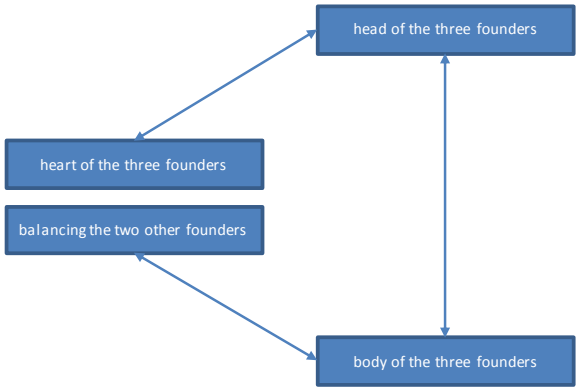

Figure 5: Plista, team composition. Code overview.

CONCLUSION

As continuous innovation is essential for survival in the dynamic market environment, Plista is aware of the fact that both exploitation and exploration are important and balancing both types is an

essential success factor. They recognize the decreasing marginal value of exploitation and the positive influence of exploration on the motivation of employees.

Nevertheless, both leaders state that they find it challenging to encourage both types due to different requirements of the activities and teams. Keeping in mind the size the company has reached by now, it is advisable to separate exploitation and exploration activities to some extent by organizational structures and thus being able to encourage each type in a more focused manner. The leaders can then focus on their strength in encouraging behaviors and the structural division will form a fit of these behaviors to the most appropriate employees.

A more structured approach to innovation will also increase the innovation success, improve employees' clear knowledge of their position and tasks and enable the company to take planned time for innovation activities.

As for ambidextrous leadership, the single leaders investigated show some difficulties in encouraging either one type innovation activities while overall the encouragement of exploitation and exploration is balanced. This is due to the fact, that at Plista ambidextrous leadership is shared between the founding team members. Together, the founders are leading ambidextrously, while the single leaders focus on the innovation activity more relevant for their type of work.

This implies some structural ambidexterity on the one hand in order to enable a clear division of tasks and encouragement behaviors as well as integration of activities at the founding team level.

The COO is pursuing the role as a mediator between the rather explorative unit of the CTO and the rather exploitative unit of the CSO. He is enabled to do so by his above-average awareness of people characteristics and sense for creating a balance of activities. As such negotiator between the conflicting demands of the explorative and exploitative unit he qualifies as an ambidextrous leader, following the description of ambidextrous leaders by Tushman and O'Reilly (2008) as a 'negotiator between conflicting demands'.

A potential conclusion for team level ambidextrous leadership is that, to make the balance between individual leaders function, at least one of them should to some extent qualify as an ambidextrous leader individually.

Moreover, all leaders in a team showing ambidextrous leadership should to some extent possess the competences cognitive complexity and behavioral flexibility and be able to encourage both types of innovation activities. Since all departments even if focusing on either exploitation or exploration also require some portion of the other innovation activity, the leaders of these areas should be able to encourage both for diminishing an overemphasis on either one.

BOOKLET

The interview transcripts and open codes for Booklet can be found in Appendix H. The overviews on Booklet coding categories are in Appendix G.

CASE DESCRIPTION

The last investigated company was chosen in order to gain insight into the transferability of the case study results to an earlier phase of rapid start-ups' growth: the time right after the foundation of a company. Booklet was founded in 2011 and developed in the following way:

	2011	2012	growth
headcount	4	11	**64 %**

This early phase of company development is essential to every business as many important decisions, choices and distinctions influencing later stages are made. Moreover, it is of interest to observe potential ambidextrous leadership in this phase because the leaders are growing with their leadership experience and are still developing a specific style, core competences and behaviors encouraging innovative activities shortly after the business was started.

The company is typical early start-up with a laid-back, cooperative culture, flat hierarchies and rather content-oriented working hours. The current focus of Booklet, as it is expected for many early rapid-growing start-ups, lies on exploitation and incremental improvements of the current product. However, the founders are open to new ideas and further product development.

The founders have a clear vision for the company's future *(I am seeing Booklet as the one and only networking tool between the real and the online world. CPO)* and work on several new ideas right now. The team also just moved to a larger office that has large amounts of additional space awaiting new employees.

The investigated leader is the CPO of Booklet who studied information science but left the university to found his first business before completing a degree. His previous entrepreneurial experience enables a large network of partners, other founders and customers.

CONTEXT

Booklet is a very good example of this kind of rapidly developing early start-ups that have high expectations to their future. Although still relatively small, the company has already employed 11 persons since it was founded in August 2011.

The company benefits from the high professionalism of its founders, of which two have significant business experience in the mobile and consulting area. Moreover, the radical product idea has been flexibly and quickly adapted throughout the foundation process.

At Booklet, no specific type of organizational ambidexterity can be noticed. This may be due to the youth of the start-up in terms that no organizational ambidexterity has developed until now because the company is still focusing very much on explorative development of the initial idea.

In such a small and new company, the influence of leader-driven ambidexterity is therefore expected to be the yet only visible force balancing innovation activities.

LEADER COMPETENCES

The interviewed leader has a number of competences that can be linked to cognitive complexity. As the first investigated leader he is described to be aware of all three factors: contradiction in situations, complex innovation processes and employee characteristics.

codes cognitive complexity	quotes CPO
depends on situational context how you do innovation	*That is depending on the concrete situation.*
knowing the right time for each innovation type	*You do need these iterative things a lot …] to know when to do the right type and be fast about it.*
leader notices different motivation needs in working with employees	*You notice that easily in the cooperation. For Marketing and other rather conceptual tasks you cannot motivate like this because the single tasks are harder to compare and measure.*

Table 25: Booklet, leader competences.

Despite his broad cognitive awareness, the leader is less described to be showing behavioral flexibility. The leader interview and his self-reflection on that account gave the impression that he actually is able to behave flexibly in different situations and adapt his behaviors to the specific situational needs:

> *I would not say that you need different persons for this kind of leadership, one person can do it all by himself, he just needs to adapt a little to each specific step.*

He also ordered the behaviors to encourage exploration by himself, according to the employee type he wants to motivate, which gives the impression of an ambidextrous leader.

LEADER BEHAVIORS

As above mentioned, the CPO started to preorder behaviors encouraging exploration according to the team he is working with throughout the interview. In his opinion, programmers need a lot of 'punctual motivation' and freedom as they are intrinsically curious of new ideas and are very competitive among each other:

> *They are in principle so intrinsically motivated that they always want to test the newest. They just want to try new things. They do not like it when everything is too standardized.*

> *Programmers can be encouraged very well through competition. That is due to the nature of their work. But you can further incite this competition. They then really want to be the best and the fastest.*

For employees with a business administration background he suggests continuous motivation adapted to the specific employee characteristics:

> *That does not work for marketing and other conceptual work because the single tasks are difficult to compare. You cannot say who of you is able to do it in three hours? That is because you should rather motivate them continuously and not as selectively as the developers.*

You have to encourage the other employees with tasks like account management or marketing in a more targeted manner. We do communication trainings and things like that for them.

Considering behaviors encouraging exploitation, he again makes a distinction between programmers and administrative staff, questioning the abilities of the former and sometimes giving clear goals and expectations to the latter:

Many programmers can be motivated in the direction of their abilities. For example, 'Are you able to do that or should we ask someone else to do it?'

You can also motivate them by goals, but I do not do that a lot.

Additionally, the CPO exhibits more general behaviors encouraging both innovation and employee types:

behaviors encouraging exploitation	behaviors encouraging exploration
give freedom and responsibility	give freedom and responsibility
give advice and instructions	take time to discuss ideas
give challenges	structuring the process
giving structure and clear processes	trainings
reject work and explain reasons	cooperative development
	recommend knowledge sources

Table 26: Booklet, leader behaviors. Code overview.

Reflecting on the literature, developing routines and monitoring employees have been found to be encouraging exploitation in the case study.

Moreover, by challenging employees and rejecting their work whilst explaining the reasons for further adaptations needed, the Booklet employees are motivated to exploit. This can be somewhat linked to the creation of threat and negative moods in combination with positive emotions described by George & Zhou (2002, 2007). Although their description of the leader behavior was theorized to encourage exploration, this is the first mentioning of the behavior at all throughout the case studies.

The behaviors encouraging exploration have a slightly better alignment to the theoretical framework, as granting autonomy, linking knowledge and specification of tasks have been described. However, trainings can rather be linked to the refinement of expertise predicted for behaviors encouraging exploitation. The same holds for cooperative development and the theoretical framework for exploitation including close monitoring of employees as well as structuring the process and development of routines. Overall, behaviors encouraging exploitation and exploration seem be somewhat mixed when comparing the data from this case study to the findings of the literature review.

TEAM COMPOSITION

Again, ambidextrous leadership seems to be to some extent divided within the founder team, which is able to encourage both innovation types this way. The following picture shows an overview on the codes to that account:

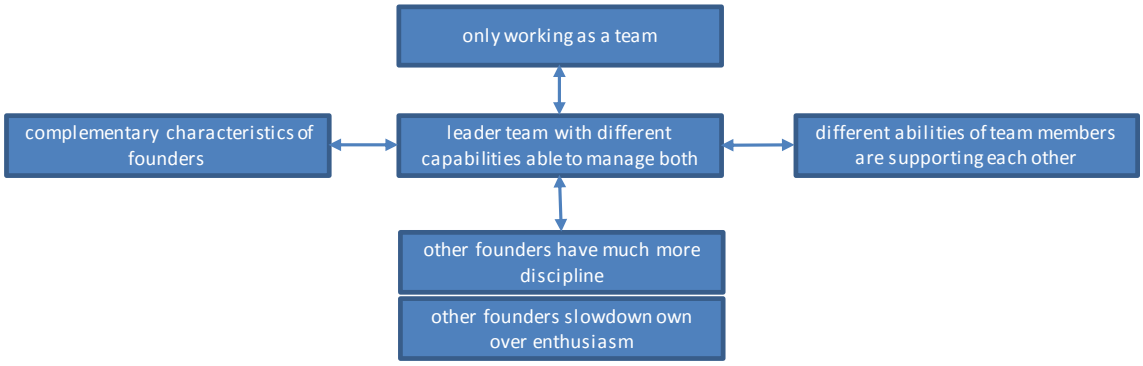

Figure 6: Booklet, team factor. Code Overview.

The interviewees see ambidextrous leadership as distributed along the founding team members as these have different competences.

CONCLUSION

Booklet bases a high amount of its current success on the intrinsic motivation to innovate of its programmers and developers. The founders see the need to further develop the original product in order to differentiate from new entrants.

Interestingly, the leader shows high cognitive abilities in recognizing that the specific task and employee type at hand influences the style of needed motivation.

Booklet has successfully generated a radically new product that was the basis for the company foundation. But the company is currently starting to further adapt and develop this initial product, through ambidextrous leadership distributed across the founding team.

This strong founding team cooperation and shared ambidextrous leadership is especially important in the early start-up phase of Booklet, were founders are highly influential on the business direction and success and still part of the overall workforce.

The leaders are learning rapidly how to balance both types in the organization and should add some kind of organizational ambidexterity soon to support the leadership driven balancing activities if the company remains growing in the current velocity.

CROSS CASE ANALYSIS

The five investigated cases are summarized and compared in the following table:

Case	Business	Foun-ders	Year	Ø monthly G / 3 Years	AL	Interviews
Mobile	Internet media	3	2004	28%	AL	CEO, 2 E
Content	Software development	3	2007	22%	AL shared in team	CEO, COO, 1 E
Smart	Software development	3	2009	45%	AL	CEO, CPO, 1 E
Plista	Internet media	3	2009	40%	AL shared in team	CTO, COO, 4 E
Booklet	Software development	3	2009	64% / 2Y	learning AL, AL shared in team	CEO, 1 E

Table 27: Cross-case overview.

In two cases, ambidextrous leadership was found to a relatively high extent in one leader, whereas three other cases showed ambidextrous leadership to be distributed across the different founders. The last case revealed that in the very young start-up the leader seems to inherit the competence cognitive complexity necessary for ambidextrous leadership but is still learning how to build on this people knowledge by showing behavioral flexibly in differing situations.

The cross-case analysis will compare and summarize the five case studies on the basis of the previously defined research questions.

WHICH BEHAVIORS ENCOURAGING EXPLOITATION ARE EXHIBITED BY LEADERS IN FAST-GROWING START-UPS?

Throughout the case analysis a high number or different behaviors encouraging exploitation were found. The following table shows a list of all behaviors encouraging exploitation mentioned in the five case studies:

Case	behaviors encouraging exploitation	sub - behaviors encouraging exploitation
Mobile	encourage persistence	
	give freedom and responsibility	
	give feedback	watch employee's work and give feedback
		valuing employee's work
		review and feedback
	be open to new ideas	give ideas
		store ideas
	discuss approach together	search for potential improvements together
		support employees in further development
		trigger ideas together in the beginning
	design interesting projects	lots of projects in short time frame
		assign interesting tasks
		rapidly changing projects
	search for external input	visit trade-fairs

		knowledge exchange with external partners
Content	tools as assistance	
	support employees in further development	search for potential improvements together
		assist employees in discussing issues together
	encourage team work	
	constantly review work	
	give feedback	
	give freedom and responsibility	
	trust in employee's opinion	
Smart	enable good working conditions	
	coach employees to think abstract and ambivalent	encourage employees to look further than their own task
		let employees discover ideas by themselves
	let employees understand importance of exploitation	explain why specific exploitation is important
		let employees see the overall picture
		show different perspectives
	customer wishes	
	discover reasons for problems	
Plista	feedback	positive feedback
	organization	
	project management	
	weekly team meeting	concrete discussion of next steps in weekly team meeting
		looking at new ideas together with employees
		team events
	analyses	everyone knows KPIs, numbers and can work with them
		quality checks
		be quantitative
	be perfectionistic	try to further optimize
	combination of transparency and empowerment	open door policy
		give ideas
		experience exchange between teams
		transparency
		open dialogue
	give impetus by training	
	incentives and praise	
	design reasonable tasks	assign interesting tasks
		highlight importance of tasks
	give advice	assist employees in discussing issues together
	give clear goals and expectations	
	encourage persistence	
	control	close reviews
		no need to optimize till it is perfect
		float the problem
Booklet	give freedom and responsibility	
	give challenges	for programmers: question their abilities
		motivate administrative people by giving goals
	give advice and instructions	support employees in working
	give clear structure and processes	tools as assistance
	reject features that are not finished	explain reasons why adaptions are needed

Table 28: List of behaviors encouraging exploitation.

The behaviors encouraging exploitation that have been highlighted most throughout the interviews are: give feedback, give freedom and responsibility and give ideas.

To **give feedback** has been discussed in the Plista, Mobile and Content case. Feedback has since long been acknowledged as an important measure to empower and guide employees (Conger, 1986). It is part of the theory about transactional leadership, where leaders give constructive feedback to keep everybody on track and motivate to stay persistent (Bass & Aviolo, 1993; Ensley et al., 2006). Feedback also plays an important role at the team level, were good functioning of a team is besides others driven by sharing feedback (Ensley, Pearson & Pearce, 2003).

In creativity theory, developmental feedback is seen to be positively influencing individual's creativity (Zhou, 2003). As creativity is an important ingredient for successful innovation activities, the role of developmental feedback can be linked to the encouragement of exploitation.

Finally, literature on organizational ambidexterity found that feedback is an important factor influencing organizational context. A system of open and rapid feedback can increase contextual ambidexterity as it is shaping the company's culture (Gibson and Birkinshaw, 2004). Feedback is part of one of the four behavior-framing attributes, namely discipline, defined by Ghoshal and Bartlett (1994) and applied to the theory of contextual ambidexterity by Gibson and Birkinshaw (2004).

Giving feedback hence can be seen as an important factor influencing the individual (persistence of employees; individual creativity), team (team functioning) and company level (organizational context).

To **give freedom and responsibility** was highlighted in the interviews of all five cases and especially often discussed in the Plista and Mobile case. It can also be linked to the theoretical framework, were granting of autonomy is one key behavior of ambidextrous leaders. There exists a tension between the degree of autonomy provided to employees and the degree of controlling and structuring (Bledow et al., 2009).

Literature describes freedom and responsibility as being beneficial for exploration and control and structure as being beneficial for exploitation (cf. Bledow et al., 2009, 201; Zheng et al., 2010; O'Reilly & Tushman, 2008, Raisch & Birkinshaw, 2008). The notion of autonomy being encouraging exploitation found in the case studies is therefore surprising and in contrast to most of the scholarly literature.

Only some studies account for the positive influence autonomy has also on exploitation.

Bledow et al (2009) see the value of freedom and responsibility for exploitation but only if they paired with integrative behaviors like establishing a shared vision, giving clear goals and expectations. Gebert, Boerner and Lanwehr (2003) found the relationship between autonomy and innovation to be curvilinear so that medium levels of freedom and responsibility granted are most beneficial for the overall innovativeness of a company. Finally, reflecting on Gibson and Birkinshaw's (2004) definition of contextual ambidexterity it becomes obvious that in such a system,

autonomy is necessary for enabling individuals to decide on whether to currently work on exploitation or exploration. Therefore, especially in a company with contextual ambidexterity, granting of autonomy is important for encouraging both innovation activities. The joint appearance of these two factors is present in the Content, Smart and Plista cases. Summarizing it mostly depends on the definition of exploitation and exploration if granting of autonomy is seen as beneficial for exploitation. As in the present study both are seen as innovation activities, encouraging responsibility and freedom clearly is fostering both activities (Amabile, Conti, Coon, Lazenby & Herron, 1996).

To **give ideas** has been described as a behavior encouraging exploitation in the Plista and Mobile case. It was especially highlighted by the Plista interviewees. The providing of employees with new ideas has not been discussed extensively in the literature. Ambidextrous leaders are rather seen as selectors and developers of employee's ideas (Bledow et al., 2011, Rosing et al., 2011, Probst et al., 2011).

The literature on transformational leadership discusses intellectual stimulation as a leader's ability to stimulate employees' effort to be creative (Bass, 1998; Jansen et al., 2008; Bledow et al., 2011, Rosing et al., 2011). This notion of transformational leaders can be somewhat linked to the providing of employees with new ideas to think about although it is not completely the same.

Having a detailed look on example quotes for 'give ideas', it becomes visible that the code can actually be somewhat linked to the intellectual stimulation employees acknowledge to encourage their own creativity:

> *As an initial situation, I do usually like it if he gives some kind of impulse. (Mobile, employee 1)*
>
> *If talking about my own working processes, it is good to give some kind of initial ideas that I can develop further. (Plista, employee 4, CTO)*
>
> *And also that he himself has seen something new and tells us ,that is an interesting thing, have a look on it' (Plista, employee 3, CTO)*

Oftentimes in ambidexterity literature, the concept of transformational leadership is linked to encouraging exploration instead of exploitation. However, Rosing et al. (2011) see the importance of behaviors exhibited by transformational leaders also for exploitation. Specifically they (2011:971) name the 'stimulation of small improvements and enhancement of efficiency' as behavior encouraging exploitation that can be derived from the transformational leadership concept.

Summarizing, providing employees with new ideas to think about and further develop is stimulating creativity. In addition, it is guiding the creative thinking of employees in a specific direction which is beneficial for successful and efficient exploitation (Bledow et al., 2009).

When having a more detailed look on the behaviors encouraging exploitation that have been most highlighted in each individual case, some differences between the cases become obvious:

	Mobile	Content	Smart	Plista	Booklet
Most highlighted	give freedom & responsibility	give freedom & responsibility	coach employees to act ambidextrous	give freedom & responsibility	give instructions and processes

behaviors	be open to new ideas	support further development		give ideas	

Table 29: Most highlighted behaviors encouraging exploitation.

In the **Mobile** case, giving freedom and responsibility and being open to new ideas have been described to be of special importance and discussed most widely. Both behaviors highly influence the start-up's culture and give individual employees the responsibility but also opportunity to come up with own ideas. This focus on the individual may be based on the very employee-centered way of doing business. It moreover indicates, that the company is responding to the trade-off between exploitation and exploration via contextual ambidexterity. However, interviewees state that innovation is generated only in a sequential way without both innovation types being undertaken simultaneously. It may be therefore the responsibility of employees to come up with new ideas while the responsibility of leaders is to initiate the change and decide on the right time slot to start working on these ideas.

The behaviors most important for **Content** are again giving freedom and responsibility paired with supporting employee in the further development of their ideas. Again, for contextual ambidexterity leaders are mainly influencing the culture of a company and enabling individuals to initiate either processes of alignment or exploration. Giving autonomy therefore is a behavior obviously important in this case. The supporting of employees throughout the process of exploitation can be closely linked to the theoretical framework, were 'monitor employees' including taking corrective action, attention to details etc. was named as one behavior group encouraging exploitation (Bledow et al., 2011; Rosing et al., 2011). Seeing granting autonomy and taking corrective action as the two most important behaviors shown by the leaders of Content, fits well to the notion discussed above that giving responsibility and freedom should be paired with integrative behaviors to successfully encourage exploitation.

The case of **Smart** fits perfectly to the concept of contextual ambidexterity as described by Gibson and Birkinshaw (2004). By coaching and encouraging employees to act ambidextrously (i.e. take initiative for either exploitation or exploration, come up with own ideas, look over their own work horizon etc.) the leaders foster contextual ambidexterity. They hence deal with the trade-off between exploitation and exploration by designing a context that shifts the responsibility for deciding which activity to undertake to the employees and gives them a culture open to this individual autonomy.

At **Plista**, giving freedom and responsibility and introducing own ideas are the behaviors shown by leaders described to be best fostering employee's exploitation activities. The role of freedom and responsibility for organizational and individual ambidexterity can be described as it has been done above for the Mobile and Content cases. The presenting of own ideas to the employees is a way of giving impulse and at the same time directing the innovation activities of employees into a concrete direction. This combination is beneficial for exploitation success as it has been described on page 70.

The most important behavior exhibited by the investigated leader in the **Booklet** case is giving instructions and processes. This may be due to the relative youth of the company requiring increased guidance by the founders. Moreover, developing routines has been described already by several

researchers (Gupta et al., 2006; Bledow et al., 2009; Rosing et al., 2011; Ohly et al., 2006) as encouraging exploitation and is part of the theoretical framework. It seems to be especially needed in very early start-ups were no specific type of organizational ambidexterity has developed yet and the organization yet needs to find its routines for undertaking innovation activities.

Concluding, the behaviors exhibited by the investigated leaders can be well linked to the type of organizational ambidexterity dominant in the case. They are somewhat comparable to and extending the findings of other researchers although there often mentioned to be encouraging exploration instead of exploitation.

The following chapter will show, if therefore behaviors encouraging exploration are the same as those discussed above or are different from the theoretically expected ones.

WHICH BEHAVIORS ENCOURAGING EXPLORATION ARE EXHIBITED BY LEADERS IN FAST-GROWING START-UPS?

The number of behaviors encouraging exploration found clearly exceeds the number of behaviors discussed for exploitation. This is hypothesized to be due to the overemphasis on exploitation of the investigated companies because of the agency background. The task of ambidextrous leaders in this success trap context is to outbalance both innovation activities by placing a focus on encouraging exploration. The following table shows a list of all behaviors encouraging exploration mentioned in the five case studies:

case	behaviors encouraging exploitation	sub - behaviors encouraging exploitation
Mobile	be open to new ideas	
	hold constant dialogue	take consulting role
		fast feedback as motivation
		dialogue with employees
	give freedom and responsibility	search for time frames for doing exploration
		give free time for creative thinking
		encourage employee to take project imitative
	do projects with no monetary reward	
	encourage exploration even if operative business suffers	
	encourage knowledge transfer	team event outside of company to discuss ideas
		innovation day
		let employees earn feedback from other employees
Content	get employees out of project work sometimes	
	give freedom and responsibility	free choice of training
		let the initiative come from the employees
	found new companies for good ideas	
	trainings	coaching of employees to become more creative
	cooperative development	further develop idea with employee
		discuss idea with other colleagues
		encourage further idea development
	customer contacts	
	be open to new ideas	idea workshop

		encourage search for new ideas
	assign interesting tasks	
Smart	give freedom and responsibility	encourage employees to think about potential solutions for problems
	team discussions	discuss ideas after working hours
		blog to discuss new ideas
	interest in employee's ideas	always have five minutes for new ideas
		explain reasons for missing time to discuss idea
		be open about bad ideas and give new input
	give impulse	assign energy of employees to other ideas
		encourage employees to work on specific topic
		employees write articles on specific topics
	give feedback	
	financial incentives	
	assign next tasks	
Plista	get new people from outside the company	external advisors
	information exchange with employees	weekly meeting for information exchange and discussion of ideas
		presentation of interesting topics in the company
		new ideas are discussed with other employees
	spending time together after work	
	praise	personal reward
		respect
		effort is rewarded not only working ideas
	give impulse	brainstorming
		idea presented by leader all two weeks
		many magazines
		intellectual and idea exchange
		news checking
	idea development	open to new ideas
		analyze idea
		documentation of new ideas
		employees can work on ideas, set milestones, present results
		new ideas on top of current workload
		request summary of idea
		request information on potential realization
		constructive critique
		guide interaction
	dialogue with employees	
	build knowledge and progress open atmosphere	connect ties
		open for employees opinion
		training
		empowerment
		education and development
		give free time for creative thinking
		few stress
		team work

	give freedom and responsibility	
	structure	'false rule'
		love for details
		scan information
		some control
Booklet	Business Administration: continuous motivation	employees doing BA have to be motivated purposeful
	Programmer: punctual motivation	do not standardize too much, give freedom
		support their curiosity on new ideas
		encourage through competition
	take time to discuss ideas	new ideas are discussed with other members of the company
		weekly meeting for information exchange and discussion of ideas
	support idea generation and development	tools and features
		coaching on-the-job
	structuring the process	structure
		good processes and management
	trainings	
	recommend knowledge sources	

Table 30: List of behaviors encouraging exploration.

The behaviors encouraging exploration that have been most highlighted throughout all the case studies are: give freedom and responsibility, give impulse, be open to new ideas and take time to discuss ideas.

The case studies revealed that **giving freedom and responsibility** is a leader behavior encouraging both innovation types. Researchers have since long linked it to concepts close to innovation, besides others innovation behavior (Amabile et al., 1996), creativity (Bledow et al., 2009), entrepreneurial motivation or orientation (Vecchio, 2003), generation of new ideas (Shalley, Zhou & Oldham, 2004), team work in innovative projects (Hoegl & Parboteeah, 2006) and flexibility (Raisch & Birkinshaw, 2008).

The relation between granting autonomy and exploration is seen as especially strong as it encourages search, discovery and embracing variation (Bledow et al., 2009; Tushman & O'Reilly, 2008). However, too much freedom is also risky for the company because employees may develop ideas that are not in line with overall goals or the exploration activities of different employees are not aligned (Gebert et al., 2003). It is therefore advisable to have some behaviors in place that counterbalance the high degree of autonomy given (Bledow et al., 2011). Such mechanism might be providing direction by a clear articulated vision (Gebert et al., 2003), designing interdependent tasks (Bledow et al., 2011), encouraging employee initiative (Bledow & Frese 2009) and creating synergies with behaviors fostering routines and structure (Bledow et al., 2011). These behaviors are exhibited by the investigated leaders because it is the core of ambidextrous leadership to outbalance an overemphasis on autonomy and exploration by fostering alignment and exploitation.

Another important behavior mentioned often and highlighted by the interviewees is **giving impulse.** The leader as source of stimulation for radical thinking is especially important for exploration. This has been discussed already for the behavior give ideas encouraging exploitation and holds in the same way for exploration.

In addition to giving impulse, leaders also need to **be open to new ideas** coming from the employees. This behavior is not only about reception of ideas but also about designing a context in which employees feel encouraged to come up with new ideas. A statement of the Plista employee 1, COO well describes this connection:

> *The whole work environment must not be stressful, there should be an overall atmosphere in the department of openness for new ideas, that people listen to new ideas and don't tell employees that these are not acknowledged.*

By creating a company culture open to new ideas, leaders foster contextual ambidexterity and strengthen the role of the individual employee for innovation (Gibson & Birkinshaw, 2004). Being open to innovation therefore is a rather broach concept including numerous behaviors like listening to new ideas, let employees convince yourself of an idea, also acknowledge the effort and creativity of ideas that may not be easily pursuable and so on.

It can be linked to three of the four behavior-framing attributes described by Ghoshal and Bartlett (1994) and reframed by Gibson and Birkinshaw (2004) to be fostering contextual ambidexterity. 'Stretch' includes giving 'personal meaning to the way in which individuals contribute to the overall purpose of an organization' and as such highlights the importance of each employee's ideas. 'Support' describes behaviors that 'enable freedom of initiative at lower levels'. 'Trust' summarizes behaviors developing openness and fairness between members of the company and as such give employees the possibility to come up with ideas without being afraid of negative judgment (all Gibson and Birkinshaw, 2004:213).

Finally, **taking time to discuss** ideas is encouraging the further development of innovative ideas and guiding employees through the exploration process. Staying with the concept of contextual ambidexterity, taking time to discuss ideas is highly linked to 'support' as the company's members 'lend assistance and countenance to each other' (Gibson and Birkinshaw, 2004:213). It moreover can be linked closely to the specification of tasks beneficial for exploration going in a realizable direction (Shalley, 1991; Bledow et al., 2009; Kearney & Gebert, 2009).

Close guidance along the process of idea development is a very important behavior encouraging *successful* exploration. It is further expressed in a high variety of sub-behaviors which not only include the discussion of the idea at the leader-follower level but also the leader behaviors initiating discussion at the team and company level like weekly team meetings, presentation of ideas at idea workshops or feedback exchange between employees.

In this context it can moreover be related to the linking of knowledge and persons or even external partners fostering exploration which has also been described in the literature (O'Reilly & Tushman, 2008; Faems et al., 2011).

After the discussion of the most highlighted behaviors over all five cases, the following table shows the leader behaviors most important to each individual case.

	Mobile	Content	Smart	Plista	Booklet
Most highlighted behaviors	give freedom & responsibility	give freedom & responsibility	do idea workshop	give impulse	trainings
	be open to new ideas	encourage search for new ideas	discuss ideas within the company	be open to new ideas	further develop idea with employee
	take time to discuss ideas				discuss ideas within the company

Table 31: Most highlighted behaviors encouraging exploration.

Starting with the **Mobile** case, the most discussed behaviors here were giving freedom and responsibility, being open to new ideas and taking time to discuss ideas. This is a thorough combination of setting overall work conditions (give freedom and responsibility), empowerment for idea generation (be open to new ideas) and guidance through the process of developing these ideas further. The investigated leader is accompanying his employees throughout the whole exploration and not only encouraging the mere creative act.

At **Conten**t the image is similar, although the rather receptive being open to new ideas is replaced by the proactive encouragement of search for new ideas. Guidance through the development process has not been specifically highlighted so that the focus at Content is seen to be rather on the idea generation. This might be due to the fact the potentially successful ideas are further developed within a newly founded company so that this process is swapped out to a different structural unit than the investigated one.

The interviewees at **Smart** are keen of idea workshops to enhance creativity and generate ideas. By this mean they can take employees out of their project work to a completely different context and proactively work against the success trap of daily exploitative business. This is paired with a very broad discussion culture, were new ideas are assessed, developed and acknowledged.

Plista is focusing very much on creativity and idea generation in their exploration activities. The most important roles of ambidextrous leaders in this context are to give some stimulation for ideas and create a company and personal environment open to new ideas. By doing so the company builds on the effects of contextual ambidexterity so that employees can come up with own ideas.

Booklet finally places a different emphasis, namely on training the employees to gain expertise, knowledge and innovation skills. By pursuing these skills can combine existing means to develop new ideas, so the guidance of leaders is not that much needed in the idea generation process. However, leaders are again playing a key role in further developing the ideas with their employees and as for Smart, a very extensive discussion culture is enhanced by them.

Summarizing, the behaviors encouraging exploitation and exploration most highlighted in the case studies are relatively similar and both going in the direction of giving autonomy, impulse and guidance through the innovation process.

Contrariwise, they are surprisingly different from the behaviors found to be of relevance in the literature review. For encouraging exploitation, only refine expertise can to some extent be found in the most highlighted behaviors (as giving task-specific feedback is helping employees to refine their expertise). For encouraging exploration, the linking of knowledge (give impulse), shaping of culture (be open to new ideas), granting of autonomy (give freedom and responsibility) and specification of tasks (take time to discuss ideas) can to a limited extent be compared to the behaviors found in the case studies. However, assigning resources and threat and negative moods have not been found to be of high relevance throughout the multiple case studies. These findings are summarized in Table 32.

behaviors encouraging exploitation		behaviors encouraging exploration	
cases	literature	cases	literature
give freedom & responsibility	develop routines	give freedom & responsibility	assign resources
give ideas	monitor employees	be open to new ideas	link knowledge
give feedback	refine expertise	give impulse	shape culture
	extrinsic reward	take time to discuss ideas	grant autonomy
			specify tasks
			threat and neg. moods

Table 32: Behaviors encouraging exploitation and exploration, cases - literature comparison.

After having described the behaviors exhibited by ambidextrous leaders to encourage both innovation types, the next section further explores competences that enable them to flexibility switch between both behavior groups.

IN WHICH WAYS DO THE COMPETENCES COGNITIVE COMPLEXITY AND BEHAVIORAL FLEXIBILITY ENABLE AMBIDEXTROUS LEADERSHIP?

Building on cognitive understanding of innovation, situations and employees, cognitive complexity is the knowledge about when to apply which type of behaviors. This knowledge is the basis for behavioral flexibility, which transfers decisions on how to behave differently into flexible actions.

Only through combining the knowledge about innovation and people with the right timing and communication of flexibly changing behaviors, leaders are able to encourage both exploitation and exploration. Hence, the combination of leader cognitive understanding and flexible actions is what can be called the core mechanism of ambidextrous leadership which is expressed in the differing behaviors described above.

The two competences predicted to be essential for ambidextrous leadership in the theoretical framework have been visible in all of the five cases. However, not every leader showed both competences in their complete occurrence, namely in relation to contradictory situations, complex innovation processes and employee's characteristics. Table 33 and Table 34 show an overview of the seven investigated leaders and their competences.

cognitive complexity	situations	innovation	employees
Mobile: CEO	-	-	+
Content: CFO	-	-	o
Content: COO	o	-	+

Smart: COO	-	o	o
Plista: COO	+	-	+
Plista: CTO	o	-	o
Booklet: CPO	o	o	+

Table 33: Cognitive complexity, leader comparison. + = strength, - = not visible, o = medium

behavioral flexibility	situations	innovation	employees
Mobile: CEO	o	-	+
Content: CFO	o	-	o
Content: COO	-	-	o
Smart: COO	-	o	o
Plista: COO	+	-	+
Plista: CTO	o	-	o
Booklet: CPO	-	-	o

Table 34: Behavioral flexibility, leader comparison. + = strength, - = not visible, o = medium

As demonstrated in the tables, each competence was discussed in all five cases, indicating that the findings can be generalized to a broader context. However, none of the seven leaders showed all aspects of both competences. All leaders showed both competences in regard to employee's characteristics, two of them even to a very large extent. The understanding and reacting to contradictory situations was shown by fewer leaders already. Especially few leaders have been able to understand (2) and react on (1) complex innovation processes.

Due to the fact that all leaders were capable of showing both types of encouraging behaviors, it may be possible that one missing aspect of a competence may be outbalanced by the awareness of another factor because they interdepend with each other. The missing awareness of contradictory situations may for example be compensated by listening to employee's opinion on the situation.

However, the larger the extent of ambidextrous leadership shown; the more aspects of both competences are present. Accordingly, the COO of Smart is the leader with the highest degree of ambidextrous leadership as he combines the most aspects of awareness and adaption.

In addition to the two competences discussed above, several interviewees described also the competences 'communication skills' and 'structural thinking' as important for ambidextrous leadership. Communication skills were specifically discussed in the Content and Smart case while structural thinking played a role in the Smart, Plista and Booklet case. These findings can be linked back to the meta-analysis of Rosing et al. (2011) who described several additional competences as relevant for ambidextrous leadership including integrative thinking, emotional intelligence and forecasting skills. It therewith seems to be the fact that despite the two core competences for ambidextrous leadership cognitive complexity and behavioral flexibility, several others might have some influence on the ambidextrous leadership style. These additional competences either take the direction of planning and structuring skills (structural thinking found in this study, integrative thinking and forecasting skills found by Rosing et al., 2011) or the direction of employee-related skills (communication skills found in this study, emotional intelligence found by Rosing et al., 2011).

Having discussed the ways in which ambidextrous leadership is accentuated in rapidly-growing start-ups, the question of the extent of ambidextrous leadership shown by the investigated leaders remains.

TO WHAT EXTENT IS AMBIDEXTROUS LEADERSHIP ACCENTUATED IN FAST-GROWING START-UPS?

Ambidextrous leadership is of high importance to rapidly growing start-ups. This is due to a chain of several factors. Start-ups usually base their foundation on a radically new technology, product, service or overall business model. Throughout the first years of their business, they have to undertake extensive exploitation activities in order to further improve and adapt their product to the customer information received from the market and to differentiate from potential new entrants.

If done well, these exploitation processes lead to a product that is highly adapted to its customers, differentiated from competition and hence successful in the market. The company grows rapidly as many customers are requesting its products. The success of exploitation activities enhances even more exploitation. The company finds itself in a success trap because it overemphasizes exploitation.

At the same time the market changes, especially fast in the Internet industry. Customers start having new demands and new technologies arise and enable radical innovations of competitors. At this stage, it is of high importance that start-ups notice and react to these developments. The focus on exploitation and growth in the short-run is not balanced with long-term oriented exploration.

In this dilemma it is the responsibility of company leaders to balance the two different innovation activities. Ambidextrous leaders are needed as they are able to see and react to the changing conditions in the market and ensure balancing the short- and long-term perspective; exploitation and exploration. The described relationships are illustrated in Figure 7.

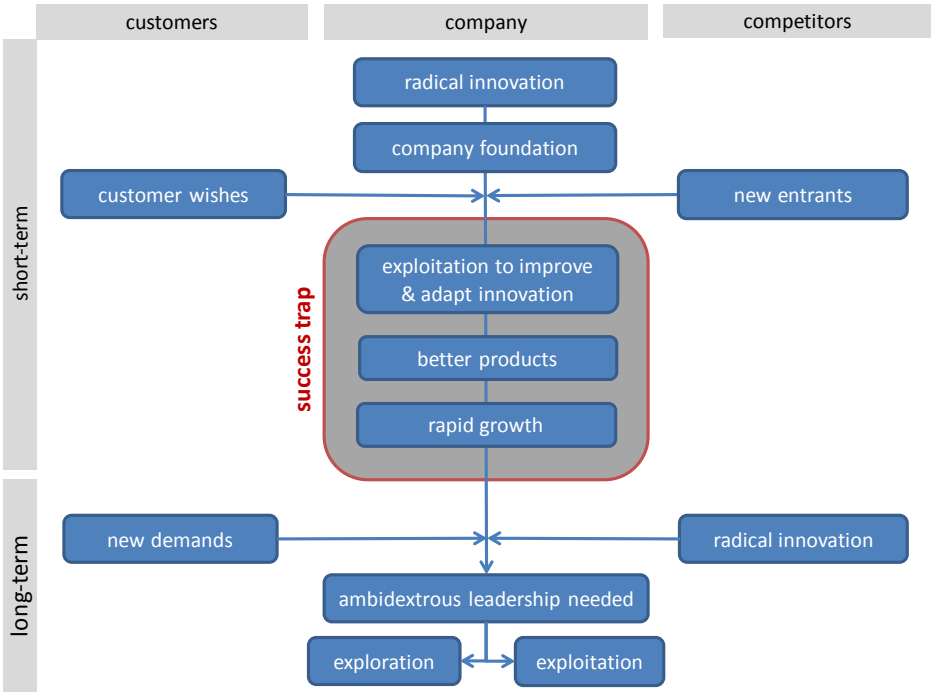

Figure 7: Reason for high ambidextrous leadership in rapidly-growing start-ups.

The companies deal with the trade-off between exploitation and exploration by building ambidexterity into their company. This can be done on organizational and individual level. Organizational level ambidexterity has been found to be present in four of the five cases. Table 35 shows an overview of the different type present in each case:

	Mobile	Content	Smart	Plista	Booklet
type of organizational ambidexterity	sequential	sequential, contextual and structural	sequential and contextual	sequential and contextual	no distinct organizational ambidexterity

Table 35: Types of organizational ambidexterity present in the cases.

As described before leadership has different main responsibilities in each type of organizational ambidexterity:

- structural ambidexterity: coordinate the integration between the separate units dealing with exploitation and exploration (Jansen et al. 2008; Lubatkin et al. 2006; Perretti & Negro 2006; Smith & Tushman 2005; Westerman et al. 2006)
- contextual ambidexterity: design a context in which exploration and exploitation are not mutually exclusive (Gibson/Birkinshaw 2004).
- sequential ambidexterity: initiate change between the two distinct periods and guide the company through the following periods of transition (Brown & Eisenhardt 1997; Rothaermel & Deeds 2004; Siggelkow & Levinthal 2003)

These are also to some extent reflected in the way ambidextrous leadership is shown in each case. Further investigating the single leaders and the ways in which they show ambidextrous leadership, we see a diverse and interesting picture.

The **CEO of Mobile** possesses high levels of cognitive complexity especially considering employee characteristics. He also shows behavioral flexibility again focusing on actions relating to the employees. His behaviors encouraging exploitation and exploration are quite outbalanced, a strong focus lies on giving guidance and feedback throughout the exploitation process. He is described to be highly ambidextrous and sees the need for a balance between exploitation and exploration: *On the one hand it is motivation for change and on the other hand also for perfection (CEO).*

The **COO of Content** is well aware of contradictory situations and employee needs although he is only able to transfer this knowledge into flexible actions relating to his employees. He shows both types of behaviors with a slight focus on encouraging exploration. Employees strongly demand a better transfer of feedback from the customer projects to the individual employee.

The **CFO of Content** interestingly does not show a large extent of ambidextrous leadership. He has the competences necessary to some extent, but generally shows very few behaviors encouraging exploitation. He moreover states several times that he is not encouraging either type purposefully and does not see a need to do so. As CFO, he accounts for the finance and controlling of a company and does not have a lot of contact points with innovative processes. In such a position different leader types and competences are needed, which is one explanation for the low level of ambidextrous leadership currently shown.

The **COO of Smart** is a very good example of an ambidextrous leader. He is described to have a very good understanding of employee characteristics and also is aware of the complex innovation

process demands. As only leader he is able to transfer his knowledge complex innovation processes into flexible actions. Moreover, he exhibits a large skill set of both behavioral types and is hence able to balance exploitation and exploration.

At **Plista**, two leaders were investigated. The two have complementary strengths and weaknesses. The **COO** is described as having a large amount of cognitive complexity and behavioral flexibility in regard to people and situations. He focuses on encouraging exploitation activities. The **CTO**, on the other hand, holds numerous skills aside from cognitive complexity and behavioral flexibility which are present to a lower extent and focuses on encouraging exploration activities. As visible, the foci on behavior types of the two leaders complement each other. This is also described by the interviewees and leads to the conclusion that in the Plista case, ambidextrous leadership seems to be especially distributed among the founders.

The **CPO of Booklet** is well able to understand and assess differing situations, innovation demands and people. He is especially transferring this knowledge into flexible actions with regard to his employees. Moreover, he has a slight focus on the encouragement of exploitation.

The described profiles of each leader, as they are visible from the case information, are summarized in Table 36.

case	leader	cognitive complexity	behavioral flexibility	encouraging exploitation	encouraging exploration
Mobile	CEO	+	o	+	o
Content	CFO	o	o	-	o
	COO	o	o	o	o
Smart	COO	+	o	+	+
Plista	COO	+	o	+	-
	CTO	o	o	-	+
Booklet	CPO	+	o	+	o

Table 36: Comparison of leaders. + = strength, - = weakness, o = medium

The large extent of ambidextrous leadership shown in the investigated cases underlines the reasoning of ambidextrous leaders being of special importance to rapidly growing firms. The fourth research question can hence be answered with ambidextrous leadership being to a large extent accentuated in fast-growing start-ups.

These findings become even more pressing when examining the team factor. The following table shows that in three of the five cases, interviewees describe ambidextrous leadership to be distributed across the founding team members.

Case	Code	Quotation
Content	complementary characteristics of founders	*On the other hand there are also some differences; the COO for example is a lot more driven by impulses than I am. On that account we are a sometimes different. (L)*
	similar leadership style of founders	*We definitely have similarities. I think that we all try to lead similarly. (L)*
	complementary characteristics need to supplement each other	*Because we have three very different bosses, there is always one able to do a thing better than the others. Because of that things like 'you better talk to him' or 'you better manage that' develop. The communication with the employees is hence adapted to fit well. (E)*
Plista	AL is separated in founding team	*We need our three bosses, I think, because the single qualities are well distributed. (E)*

	complementary characteristics of founders	*[…] you have to be complementary. The more founders complement each other, the more different the views and opinions, the better. (L)*
	complementary characteristics need to supplement each other	*Yes this is very important that we complement each other, have different strengths, get new insights and not always do the same topic at the same time. (L)*
	head of the three founders	*The other one is a total thinking-driven person, the head, the CTO, he is very technology-driven. (E)*
	body of the three founders	*One is a sales person and has the contact to external partners and customers. He is the body and executive part of Plista. (E)*
	heart of the three founders	*I would say that the COO is a little like the heart of the three founders. (E)*
	balancing the two other founders	*And the COO is a little bit in between, the one who has a very good feeling for people. (E)*
Booklet	only working as a team	*I take care of the product and the CTO is responsible for the development. The COO is the one holding us together and encouraging iterative and incremental activities and bringing us forward. […] only when we three work together the business functions. (L)*
	leader team with different capabilities able to manage both	*Or two, three persons as a team can also do that. We are well supplementing each other. (L)*
	complementary characteristics of founders	*Our team composition is quite interesting.(L)*
	different abilities of team members are supplementing each other	*The three guys are a well-balanced working team and they foster different aspects of the product. (E)*
	other founders with much more discipline	*The COO has much more discipline than I and can also better encourage that. (L)*
	other founders slow down leaders over enthusiasm	*That is exactly my problem, where the other founders also have to slow down my over-enthusiasm. (L)*

Table 37: Team factor, cross-case comparison.

So, even if one single leader might not be perfectly encouraging both innovation types and if ambidextrous competences and behaviors are to a certain extent shared within a well-cooperating management team, the overall ambidexterity reached within that company can still be high.

For example, based on the extensive Plista case, the CTO encourages exploration while the COO encourages exploitation. This division seems natural, as the role of a CTO is by definition linked to technology, radical innovation and exploration while the role of a COO by definition is linked to incremental improvements of internal processes and smooth dealing with the fast firm growth. This well-functioning cooperation of different strengths and weaknesses is also described by the employees and leaders themselves as quoted in the table above.

Nevertheless, both leaders individually show ambidextrous leadership. This leads to the conclusion that a team division of ambidextrous leadership is only possible to a certain extent because each individual leader still needs to be able to balance both innovation types.

Summarizing the cross-case analysis on research question 4, ambidextrous leadership is accentuated to a large extent in rapidly growing firms. This good balance of innovation activities can be reached by a single very ambidextrous leader or by a team of leaders that are individually ambidextrous but have a slightly differing focus on either exploitation or exploration and complement each other in their competences and behaviors.

CONCLUSION

RESULTS AND DISCUSSION

Having discussed the cases in regard to the four research questions, the findings will now be recapitulated as an answer to the central research question:

> ***TO WHAT EXTENT AND IN WHICH WAYS IS AMBIDEXTROUS LEADERSHIP GIVEN SHAPE IN FAST-GROWING START-UPS?***

The first finding relates to the **extent** of ambidextrous leadership shown in the case studies.

Ambidextrous leadership is to a large extent observable in fast-growing start-ups. The need for ambidextrous leadership is due to the external (dynamic market) and internal conditions (rapid growth, success trap) of these companies.

Of the seven investigated leaders, three showed a high degree of ambidextrous leadership, three showed a comparably high level of ambidextrous leadership and one showed a comparably low degree of ambidextrous leadership. Interestingly, the only leader with a comparably low degree of ambidextrous leadership is working as CFO and in this position does not have many contact points to innovative activities in a firm as he is mainly number and controlling driven.

The following findings relate to the **ways** in which ambidextrous leadership is given shape.

It is important to notice, that it does not always have to be one perfect ambidextrous leader guiding the company through the trade-off between exploitation and exploration. Instead the results of ambidextrous leadership count no matter if they are achieved by one person or by a team of leaders.

In three of the five investigated cases, ambidextrous leadership could be found both individually in each leader, and also distributed across the founding team members. The balance of exploitation and exploration in these start-ups is hence not only achieved by each single leader and department but rather through a combination of the different capabilities and behaviors of leaders, particularly through close complementary cooperation of the founders.

Moreover, ambidextrous leadership is not a solution which can substitute the need for organizational ambidexterity as working in close interdependence with the type of organizational ambidexterity appears to be predominant. However, the relationship goes in both directions: ambidextrous leadership is influencing organizational ambidexterity by its behaviors while at the same time organizational ambidexterity is influencing the behaviors of ambidextrous leaders.

Accordingly, ambidextrous leaders do not need to show a perfectly outbalanced set of competences and behaviors. Different mixes are possible to reach the same kind of goal depending on several factors like the organizational ambidexterity predominant in the firm, the separation of behaviors within a team or the current and natural focus of the company on either exploitation or exploration that needs to be outbalanced. Ambidextrous leaders are therefore not expected to always show the same balance of encouraging behaviors but to act ambidextrously by *adapting* their behaviors

according to their *awareness* of contradictory situations, employee characteristics or innovation demands. The balance itself needs to be dynamically created instead of being statically fostered.

This fact shows the high importance of the two competences cognitive complexity and behavioral flexibility enabling ambidextrous leaders to show a set of behaviors fitting to the concrete circumstances present. They are hence of major importance to the concept of ambidextrous leadership generating an understanding of ambidextrous leadership beyond their actions visible on the surface.

Again, ambidextrous leaders do not need to be aware of and adapt to all three aspects of the competences, namely contradictory situations, complex innovation processes and employee characteristics. Instead, they can compensate a low understanding of for example innovation process demands by a high degree of employee related awareness. The same holds for behavioral flexibility. However, leaders who possess an understanding of all contradictory situations, complex innovation processes and employee characteristics and who are able to transfer this awareness into flexible actions concerning the three types are expected to be most successful in encouraging a balance between exploitation and exploration.

If one understanding is missing and not compensated by a very good awareness of another type, these might hold risks for a successful encouragement of both innovation types. For example, leaders missing an awareness of the complex innovation process demands could have difficulties in encouraging either type throughout the whole innovation process. They might only create a balance for idea generation with missing behaviors guiding through the difficult process of idea development. Or they might create perfect conditions for exploration and exploitation by for example shaping contextual ambidexterity but fail to individually stimulate employee's creativity in the idea generation process.

Several employees described to be missing stimulation for creativity, support during idea development or feedback given on the ideas. These pitfalls have often been found to be especially related to one phase of the innovation process, which can be somewhat related to the missing awareness and adaption of leaders on that account.

The difficulties described might also be due to the fact that the companies investigated are relatively small without structures and processes for innovation activities. However, as they are growing rapidly, current sizes are already starting to require more structure in the organization and more hierarchical levels. Therefore, the founders rather have to focus on influencing the overall business ambidexterity instead of being able to guide closely through single innovation processes.

In summary, ambidextrous leadership is given shape by a leader or a team of leaders aware of the situation, innovation process and / or employee characteristics and flexibly switching between two sets of encouraging behaviors according to this knowledge.

Towards a heterogeneous perspective on rapid firm growth. Rapid firm growth has been described to be beneficial for national economies as a motor of employment and wealth (Birch, 1979). Moreover, the notions of success, competitive advantage and innovativeness are assigned to a gazelle firm (Hölzl & Friesenbichler, 2007).

Companies and researchers see the benefits of growth like increasing customer numbers, the establishment of barriers against new entrants, increasing revenues or reputation (Henrekson & Johansson, 2009; Moreno & Casillas, 2000). However, rapid growth implicates numerous challenges for companies. They have to deal with trade-offs between operational business and growth, efficiency and flexibility, exploitation and exploration (Hite & Hesterly, 2001; Ireland & Hitt, 2003; Leonard-Barton, 1992; Cyert & March, 1992; Levinthal & March, 1993).

These have been merely discussed in the literature as an outcome of rapid growth. Especially the trade-off between exploitation and exploration is likely to develop into an overemphasis on either of the two innovation activities in a growth context (Faems et al., 2011). The danger of running in a success trap, where successful exploitation that led to the firm growth becomes replicated over and over again driving out exploration is especially high. With an overemphasis on one type of innovation, sustainable competitive advantage is difficult to achieve.

The strong connection between fast firm growth and the resulting need for activities balancing a firm's innovation activities has so far been discussed by few studies. Faems et al. (2011) described several exploration patterns, which could be observed to be emerging within fast-growing firms. Including the challenges of rapid growth oftentimes leading to an overemphasis on exploitation and the counteracting exploration patterns present at gazelle firms, they described different routes to achieve ambidexterity as well as different growth patterns.

The present thesis acknowledged the dangers inherit to rapid firm growth that are faced by many gazelle firms and discussed potential ways to deal with the trade-off between exploitation and exploration.

Towards an interdependent relationship between organizational and individual ambidexterity. One option to create a balance of innovation activities is organizational ambidexterity. The topic has been widely discussed in the literature incorporating antecedents, environmental factors and other moderators and performance outcomes (see for example the model of Raisch & Birkinshaw, 2008).

Leadership is seen as one antecedent to organizational ambidexterity being of high influence (Gibson & Birkinshaw, 2004; Lin, 2011; Raisch & Birkinshaw, 2008; Raisch et al., 2009). For this reason, a number of researchers started to investigate different leadership styles and their impact on innovation (i.e. Mumford & Licuanan, 2004; Zheng et al., 2010). The style described to be closest related to organizational ambidexterity is ambidextrous leadership so that several researchers recently started to further explore the concept (Bledow et al., 2011; Probst et al., 2011; Tushman et al., 2011; Rosing et al., 2011). However, most of their work sees ambidextrous leadership still as an antecedent influencing organizational ambidexterity.

Faems et al. (2011) have shown structural ambidexterity determinants to influence the ways in which exploration is achieved at gazelle firms but without a specific focus on the requirements organizational ambidexterity implies on firm leadership. Smith et al. (2010) showed several organizational contextual factors like frames and goals, focus of learning, conflict management and team structure to influence the management of strategic paradoxes.

Renzl, Rost amd Kaschube (2000) identified distinct activities to assist employees coping with ambidexterity in different organizational ambidexterity contexts at an automotive supplier. For example in a structural ambidexterity context, ambidextrous behaviors have to go much more in the direction of integrating and linking knowledge and processes than for organizations with contextual ambidexterity where their key task is to influence the company culture (Renzl et al., 2000).

However, the concrete connection between organizational level ambidexterity and ambidextrous leadership has – at least to the author's knowledge – only recently started to be the focus of discussion when O'Reilly and Tushman (2011) elaborated on organizational ambidexterity in action as expressed in leaders' exploitation and exploration activities.

The present thesis started from where O'Reilly and Tushman (2011), with their description of organizational ambidexterity as expressed by managers' exploitation and exploration activities, ended by investigating how ambidextrous leaders encourage their followers to explore and exploit in a certain organizational ambidexterity context.

It acknowledged the interrelations between both levels of ambidexterity, thus not only the influence of ambidextrous leadership on organizational ambidexterity but also vice versa. This is a great step towards a better understanding of the interplay between different forms of ambidexterity.

Towards a dynamic view of ambidextrous leadership. Including the influence of organizational ambidexterity on ambidextrous leadership also made the author change the core concept of ambidextrous leadership and think about potential other factors influencing it. In existing research, ambidextrous leaders are described to be showing both sets of behaviors; those encouraging exploitation and exploration in a balanced manner (see for example Rosing et al., 2011 on opening and closing leader behaviors).

Definitions and explanations already include the necessity for being able to switch flexibly between these two sets but they do only elaborate to a limited extent on why this is of special importance.

Seeing ambidextrous leaders as individuals being perfectly in balance and showing balanced behaviors does not tell the entire story. One important finding of this study is that the key task of ambidextrous leadership is *not to show* a balance between behaviors encouraging exploitation and exploration but to *trigger* a balance between the two by sometimes unbalanced foci on either exploitation or exploration encouraging behaviors. Therefore, it is the way towards ambidexterity that is the core of ambidextrous leadership than ambidexterity itself.

This is due to the fact that depending on the industry and company characteristics driven focus on either one activity (Smith et al., 2010), specific encouragement of the other one is more needed than a

balanced set of encouragement behaviors. The link between organizational level factors influencing the needed leader focus has been to some extent also been discussed by Bledow et al. (2011), when reflecting on the influence of uncertainty avoiding or embracing company culture on the required leader encouragement activities.

The means on how to reach a balance between the two innovation activities have a broad variety and depend strongly the factors laid out above.

First of all, as discussed above, organizational level ambidexterity does influence the way in which ambidextrous leadership is needed to balance exploitation and exploration.

Bledow et al. (2011) described the right set of behaviors to be largely depending on the natural tendency towards one or the other innovation type an organization might have. In a company were exploitation is driven by the business model or other factors, ambidextrous leadership has to focus on encouraging exploration for balancing out the scales. This holds the other way round for companies with a tendency towards exploration. There can hence be many thinkable sets of behaviors that all lead to balanced innovation activities.

Finally, ambidextrous leadership does not need to be accomplished by a single person. Opposing to the current research direction it can be interpreted as a concept looking at *the* leadership of a company instead of *a* leader. O'Reilly and Tushman (2004) referred to ambidextrous senior teams even if the single team members themselves are not ambidextrous to a high degree.

Building on this notion, the present study found evidence for the fact that ambidextrous leadership can be distributed across the founding team members. If competences and behaviors are distributed well among the founders, the overall balance of exploitation and exploration encouraged by the founders can still be high, even if each single leader focuses on encouraging only one innovation type. The research hence sheds light on the concrete functioning and distribution of ambidextrous leadership in start-ups founding teams and indicates avenues for future research on the potential distribution of ambidextrous leadership.

The concept should therefore be further investigated at the team or management level as it is not only present in separate individuals. There are few studies on top management teams and their influence on organizational ambidexterity (Carmeli & Halevi, 2009; Jansen et al., 2008; Lubatkin et al., 2006) but the concrete connection to ambidextrous leadership should be further explored.

To sum up, ambidextrous leadership is a very dynamic rather than static concept and the ways in which it influences exploitation and exploration have to be seen as dynamic processes.

Towards an understanding of the elements of ambidextrous leadership. For being able to acknowledge these dynamics and the complexity of innovation itself, the author found cognitive complexity and behavioral flexibility to be of particular importance. The two competences have, besides others, been already superficially and theoretically discussed by several researchers (e.g. Larson & Rowland, 1974; Akman et al., 2011; Denison & Hooijberg, 1995, Rosing et al., 2011), but no real evidence has yet been made on their importance for ambidextrous leadership. The thesis

found such evidence in terms of the two competences being of significant value in all the five case studies.

Moreover, it explored the ways in which these competences shape ambidextrous leadership and the aspects they consist of. In line with the theories of Zaccaro et al. (1991) and Denison and Hooijberg (1995), the thesis found evidence for cognitive complexity being the basis for behavioral flexibility. Only by combining the two competences, ambidextrous leadership is given shape.

In addition, both awareness and adaption can be related to several aspects being understanding of and acting upon contradictory situations, complex innovation processes and employee characteristics. The thesis shed light on these underlying aspects of cognitive complexity and behavioral flexibility. Interestingly, it found that not all of them have to be present for ambidextrous leadership as they are interrelated and can compensate each other. However, a leader perfectly combining the three aspects of each competence would best encourage balanced innovation activities of employees.

Finally, the research also found other competences than the two focused upon to have some importance for ambidextrous leadership. These are structural thinking and communication skills. Reflecting on the meta-analytical research of Rosing et al. (2011:969) who proposed 'behavioral and cognitive complexity, integrative thinking, emotional intelligence, and forecasting skills' as important competences for ambidextrous leadership it is possible to draw some connections between forecasting skills, integrative thinking and structural thinking (task-related) on the one hand and emotional intelligence and communication skills (people-related) on the other hand. Future research should therefore attempt to further explore competences that might be of relevance in addition to ones explored in this study.

In addition to competences enabling ambidextrous leadership, several researchers requested studies examining the specific behaviors or practical instruments leaders can use to encourage each type of innovation (Kollmann et al., 2009; Lin, 2011, Bledow et al., 2011). A list of behaviors for each innovation type could be discovered throughout the research. Out of this list, several behaviors were found to be of special importance for encouraging either exploitation or exploration. These are only to a limited extent comparable to the literature on ambidextrous leadership.

Especially for exploitation, the literature review on encouraging behaviors and the behaviors found to be of highest relevance in the case studies differed. Only the refinement of expertise (Bledow et al., 2009; Lubatkin et al., 2006) is somewhat linkable to giving feedback. However, as the behavior was originally described by the literature, it was rather linked to training and development activities than to interpersonal feedback (Taylor & Greve, 2006; Conti, Coon, & Amabile, 1996).

Developing routines (Bledow et al., 2009; Gupta et al., 2006; Ohly et al., 2006; Rosing et al., 2011), monitoring employees (Bledow et al., 2009; Rosing et al., 2011) and extrinsic reward (Amabile, 1996) have only been discussed shortly in single case studies, but not been of high relevance when comparing and summarizing the five cases.

Concerning behaviors encouraging exploration, there is more relation between the behaviors found to be of high importance in the case studies and the behaviors proposed by the literature.

Linking knowledge (O'Reilly & Tushman, 2008), shaping the company and personal relationship culture (Bledow et al., 2009; Un & Montoro-Sanchez, 2010), granting autonomy (Gupta et al., 2004, Bledow et al., 2009; Rosing et al., 2011) and specifying tasks (Shalley, 1991; Bledow et al., 2009) can somewhat be linked to the case studies findings. However, assigning resources (Bledow et al., 2009; Cyert & March, 1963; Faems et al., 2011) and threat and negative moods (Gupta et al., 2004, Bledow et al., 2009; George & Zhou, 2007) cannot be directly found to be of high relevance in the case studies.

Accordingly, literature already provides a relatively good understanding of behaviors encouraging exploration while the behaviors found to be of high relevance for the encouragement of exploitation in the multiple case studies, differ largely from those predicted by previous studies. In addition, the behaviors described by the literature so far have been relatively superficial, so that the present study, to the author's knowledge, is the first one describing the behaviors of ambidextrous leaders in a level of detail that has relevance not only to academics but also to practicioners.

Towards data-based eveidence on ambidextrous leadership in start-ups. From a methodological viewpoint, the study answers Raisch & Birkinshaw's (2008) call for research into ambidexterity on an individual level and detailed case studies to further substantiate the meta analytical research. Also Lin (2011) requests real-time case studies to see ambidextrous leadership from a more dynamic perspective.

Following the suggestion of Rosing et al. (2011), the study made use of multiple level research incorporating the perspectives of employees and leaders on the complex processes of exploitation and exploration encouragement.

The study is moreover answering the call of several scholars for research focused on young gazelle firms that are still in the start-up phase of their business (Henrekson & Johansson, 2009; Sims & O'Regan, 2006). Additionally, as ambidextrous leadership is expected to occur more often in start-ups than in large established firms (Kollmann et al., 2009), the mechanism and functioning of the concept could be investigated thoroughly.

MANAGERIAL IMPLICATIONS

In addition to its value for the theoretical literature, the study provides practitioners with new insight.

Founders of new businesses gain knowledge about the success trap and its influence on the balance between exploration and exploitation activities. They moreover learn to understand the challenges of potential future firm growth (Barringer et al., 2005). This knowledge enables practitioners to proactively face the challenges of rapid growth by an early training of leaders and establishment of organizational structures able to deal with the fast growth.

Knowing about the competences enabling ambidextrous leadership founders can train their selves and their managers to gain a greater awareness of and also learn how to react to different situations, innovation and people. With this knowledge, they can also actively search for leaders able to guide

their company through phases of fast growth by testing their competences and potential set of encouragement behaviors in for example critical incident situations discussed during job interviews.

Considering the potential distribution of ambidextrous leadership within managing teams, practitioners can reassess their team composition and the division of work. They can moreover search for complementary leaders proactively when grouping together with founding partners.

An important value of the study for leaders is the list and grouping of behaviors encouraging the different innovation types. By reading the case studies, leaders get impulse for potential behaviors encouraging exploration and exploitation and broaden their behavioral set.

Finally, the five participants of the study learn more about their leadership, type of organizational ambidexterity, challenges from rapid growth and potential counteractions.

LIMITATIONS AND FURTHER RESEARCH DIRECTIONS

Despite its added value to theory and practice, the study has some limitations that are mainly due to the methodological approach chosen. Nevertheless, these provide possible directions for future research.

Because of the qualitative case study approach no concrete assessment of the level of ambidextrous leadership in the rapidly growing start-ups is possible. The author hence was not able to measure the amplitude of ambidextrous leadership shown. Further studies should develop measurement scales and test the concept of ambidextrous leadership based upon them. A quantitative assessment of the levels of ambidextrous leadership would better indicate the extent to which ambidextrous leadership is present in fast-growing start-ups. In addition, future studies may empirically test the bidirectional relationship between organizational and individual ambidexterity.

A limitation of case study research, that is especially present regarding the few researching experience of the author, is that an inexperienced researcher could be biased when selecting data in terms of specifically searching for data underlying his propositions and theories (Guba & Lincoln, 1981). This drawback was minimized by discussing the author's data collections and relationship networks with two additional researchers. Furthermore, the inferring of causalities from case study data is difficult and should be re-evaluated by quantitative studies focusing on specific relationships of the here presented research model.

Moreover, in line with Baxter and Jack (2008), the large data sets from diverse sources used as basis for the within- and cross-case analyses often present information confronted with sample selectivity bias. Besides, they lead to high increases in the time and resources needed for such case studies and bring along difficulties of building focused theories from these rich data sets (Eisenhardt, 1989).

Future research should build on the indications in relation to distributed ambidextrous leadership made in this study and further investigate ambidextrous leadership in the leader team context. Future case studies can include interviews with all founding team members within start-ups or several leaders from one managerial level in established corporations.

As the explorative framework of ambidextrous leadership discovered in this study is rather broad and includes several factors like different competences and behaviors, researchers could investigate each aspect in more detail. Quantifiable results concerning each group of factors would add to the detailed qualitative description. Especially the image of behaviors encouraging exploitation remains not perfectly clear, because the findings of the present study differ from the behaviors proposed by previous studies. Therefore, future research should explore these behaviors more in detail.

Generalizability to other settings is an acknowledged drawback of the case study method (Eisenhardt, 1989; Noor, 2008; Yin, 1999). Due to investigating gazelle firms in Germany, further research may incorporate different environmental factors to test whether the results also hold true for established firms and within different cultural contexts. As the case studies were focused on one industry only, extraneous variation could be reduced but transferability to other settings was decreased. Moreover, the framework needs to be tested for different company and environmental conditions like different growth phases, industries, sizes or type of growers (for example using the categories proposed by Delmar et al. (2003)).

Finally, as the present research focused on ambidextrous leaders, though to some extent incorporating the perspective of employees, future studies should focus on the employee needs as related to ambidextrous leadership and the concrete means by which ambidextrous leadership can best encourage employees' exploitation and exploration.

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APPENDIX

A: INTERVIEW GUIDELINE LEADER

Introduction & Clarification of Terms/ Approach

- Short small talk
- Thank you for your time and interest
- Introduction to the study and my person
- Explain important terms
- Can be made anonymous, do not need to answer if not wanted
- Please tell me if you have any questions in between

General Overview on Person and Company

- Can you give me a short overview of your person, academical and job experience, position
- Can you give me a short overview of your company
    - Foundation
    - Business concept
    - Number of employees
    - Growth figures
    - team
- What is the current situation of your company
    - Do you have any important projects running right now
- What makes your company more successful than others
- What is your company culture

Specific Interview Questions on Ambidextrous Leadership

- How important do you find exploiation, exploration
- How important do you find radical innovation
- Do you think it is difficult to balance both types and why
- Where and how does exploration / exploitation take place in your company
- How do you encourage exploration, Out-of-the box thinking in your organization
- How do you encourage exploitation innovation, adaption processes, and quality improvements in your organization
- (How do you encourage creativity of employees)
- (How do you encourage discipline and efficiency of employees)
- Which role has the current growth of your company when needing to balance both innovation types
- How would you describe your leadership style in general
- Which characteristics or competences does a founder need to balance both types of innovation
- Two critical incidents: one exploitation, one exploration

- Are you showing different behaviors in different situations with employees
- How do you decide which type of behaviors to specifically encourage at the employees in which situation

Reflection and Closing

- Have them reflect on the importance of leadership for getting bot exploration and exploitation in their company, what would you improve in your leadership
- Issues popping up during the interview
- What is the most crucial element of exploitation / exploration to your opinion
- Did I miss something important in my questions

Thank you very much for your time! Any questions? Do not hesitate to contact me.

B: INTERVIEW GUIDELINE EMPLOYEES

Introduction & Clarification of Terms/ Approach

- Short small talk
- Thank you for your time and interest
- Introduction to the study and my person
- Explain important terms
- Can be made anonymous, do not need to answer if not wanted
- Please tell me if you have any questions in between

General Overview on Person and Company

- Can you give me a short overview of your person, academical and job experience, position
- What is the current situation of your company
    - Do you have any important projects running right now
- What makes your company more successful than others
- What is your company culture
- Do you think your company is innovative? Why and in which ways?

Specific Interview Questions on Ambidextrous Leadership

- How would you describe his leadership style in a few words
- Does your leader behave differently in different situations
- Does your leader choose a behavior appropriate to each specific situation
- How do you think he knows which behavior to choose in which situation?
- How does your leader encourage you to be flexible, think out-of the box and be creative
- How does your leader encourage you to strive for constant adaption and improvements
- Two examples of situations: one exploration, one exploitation

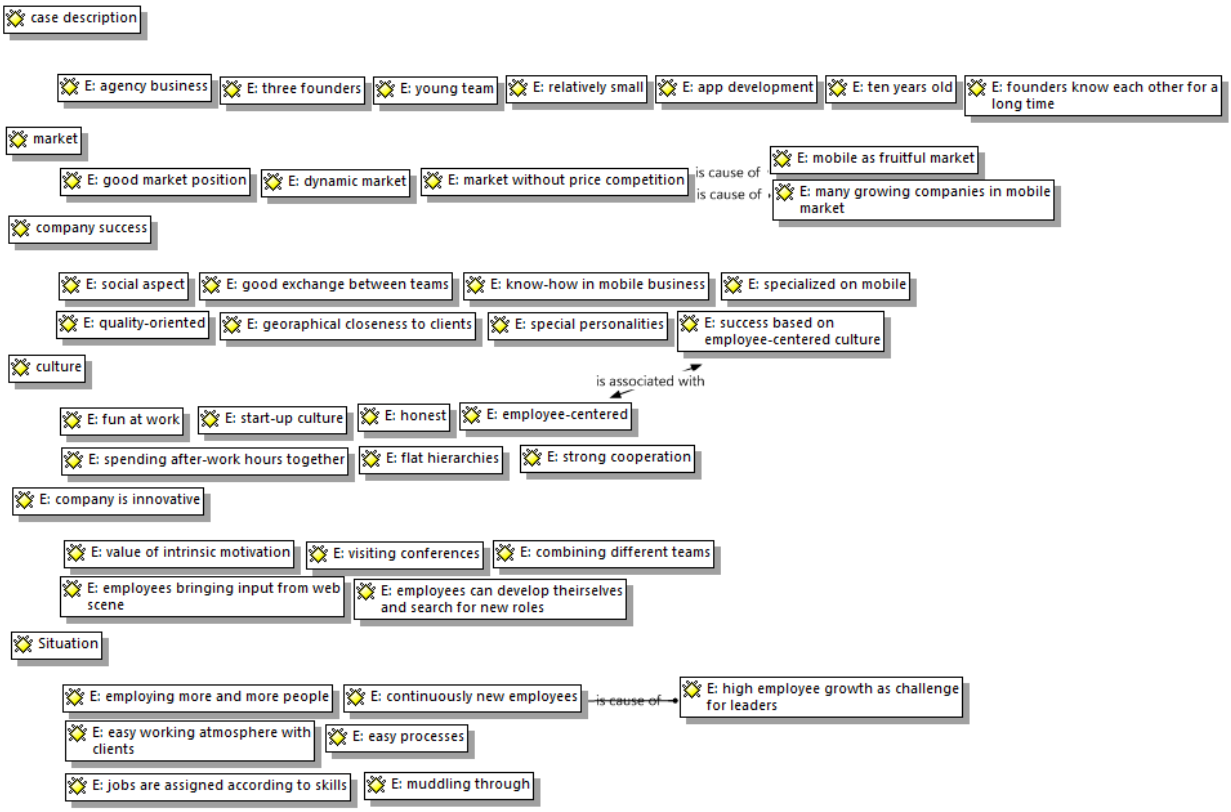
Reflection and Closing

- Have them reflect on the importance of leadership for getting both exploration and exploitation in their company, what should your leader improve in his leadership style
- Issues popping up during the interview
- What is the most crucial element of exploitation / exploration to your opinion
- Did I miss something important in my questions

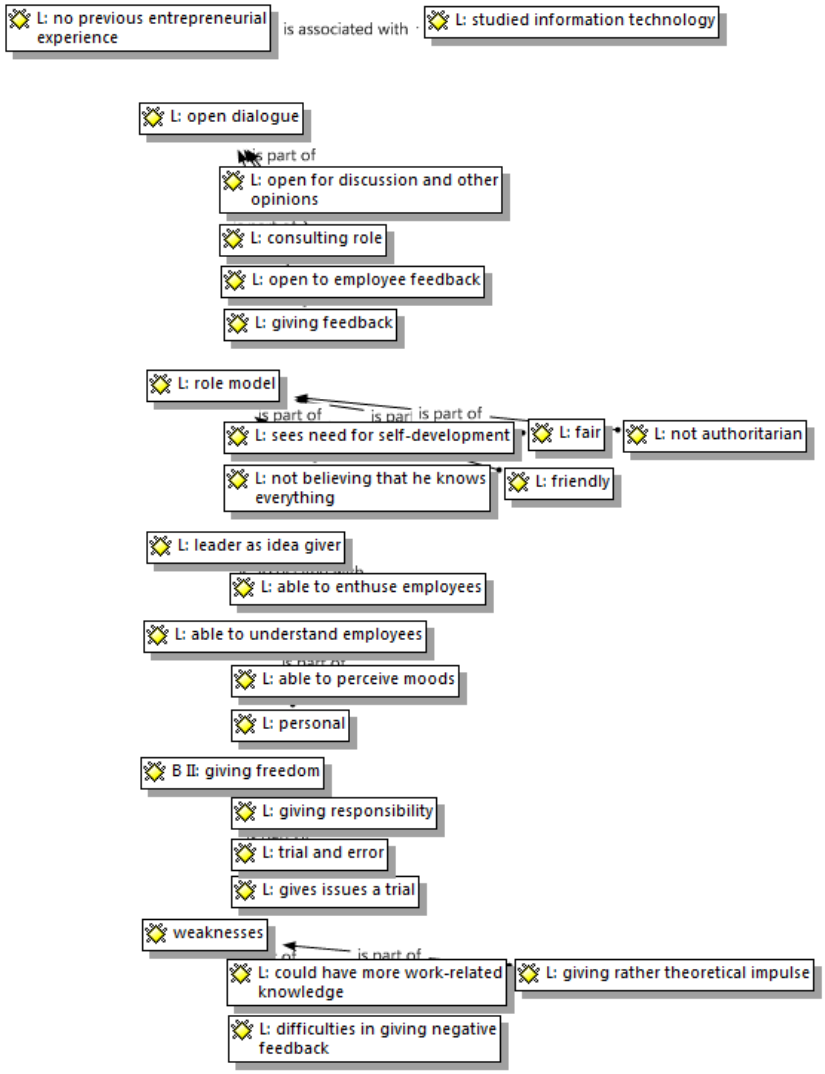
Thank you very much for your time! Any questions? Do not hesitate to contact me.

C: CODING: MOBILE

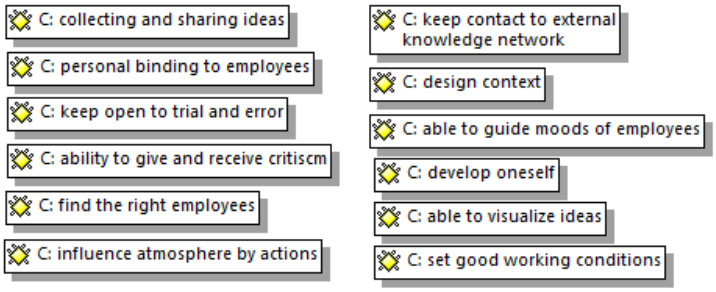
CASE DESCRIPTION

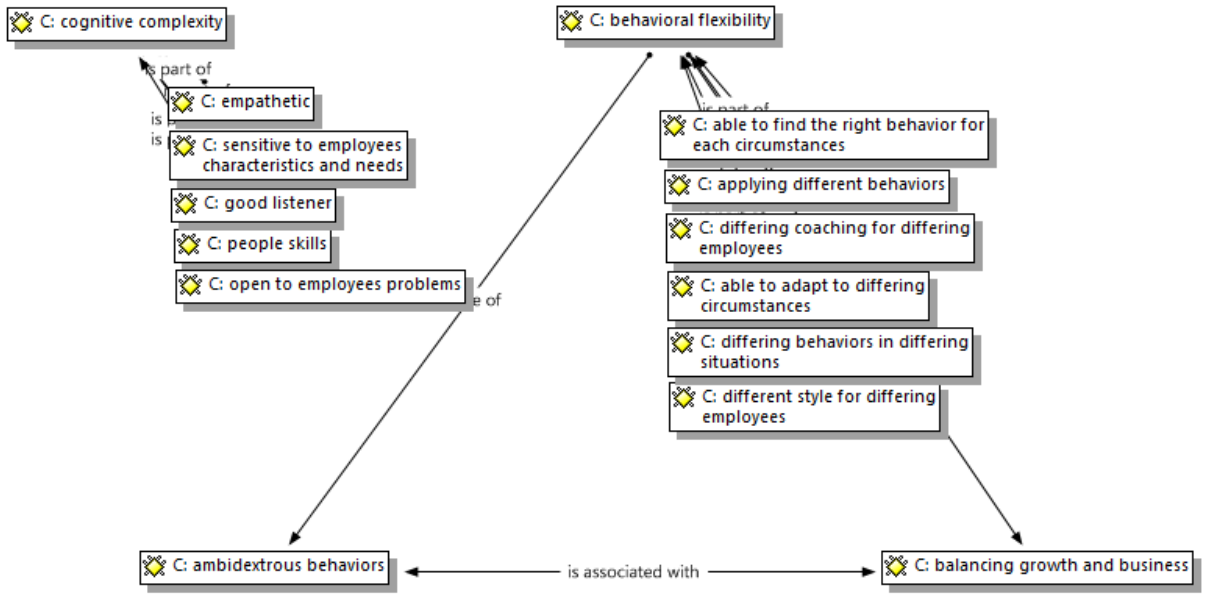


LEADER OVERVIEW

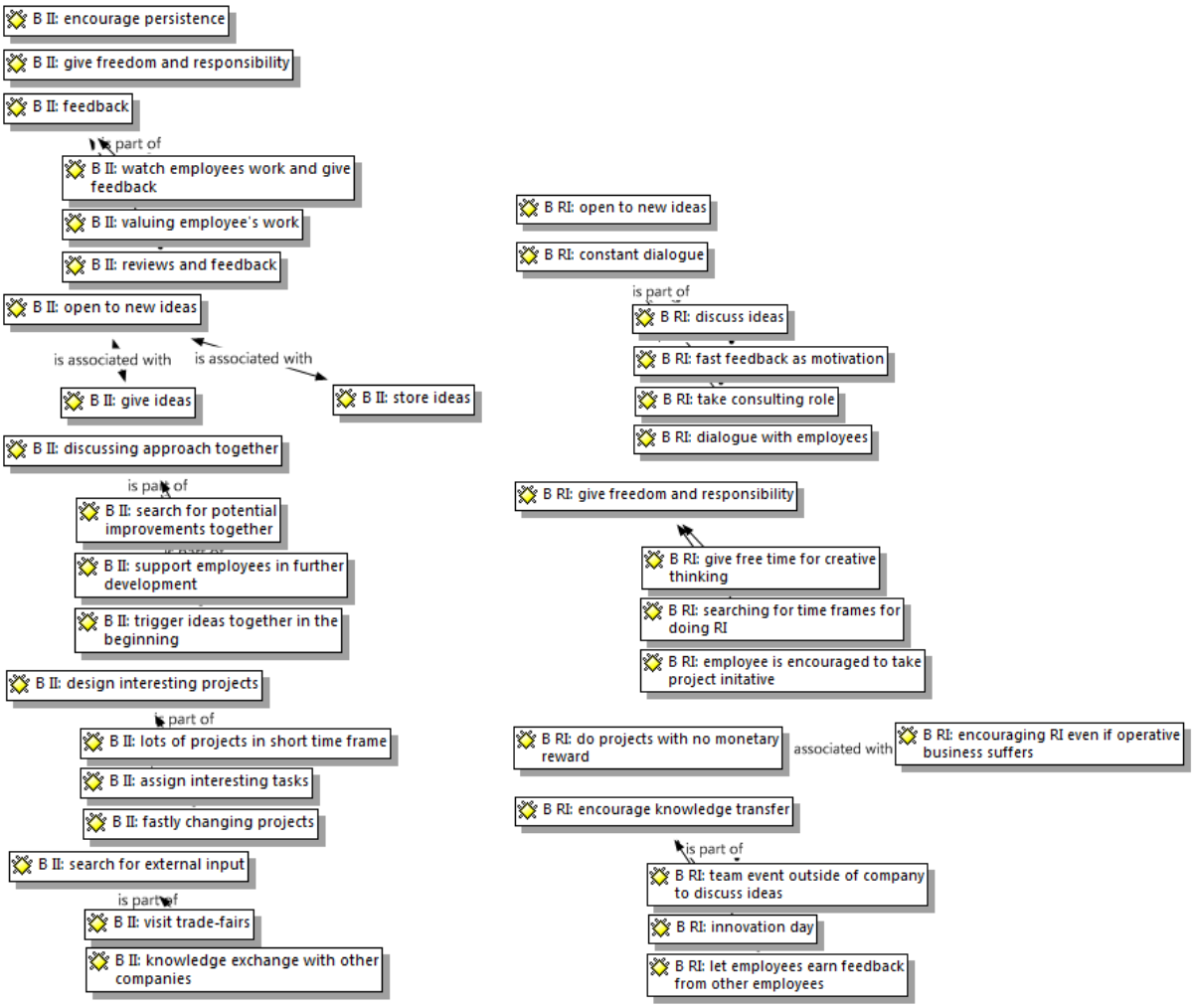


LEADER COMPETENCES

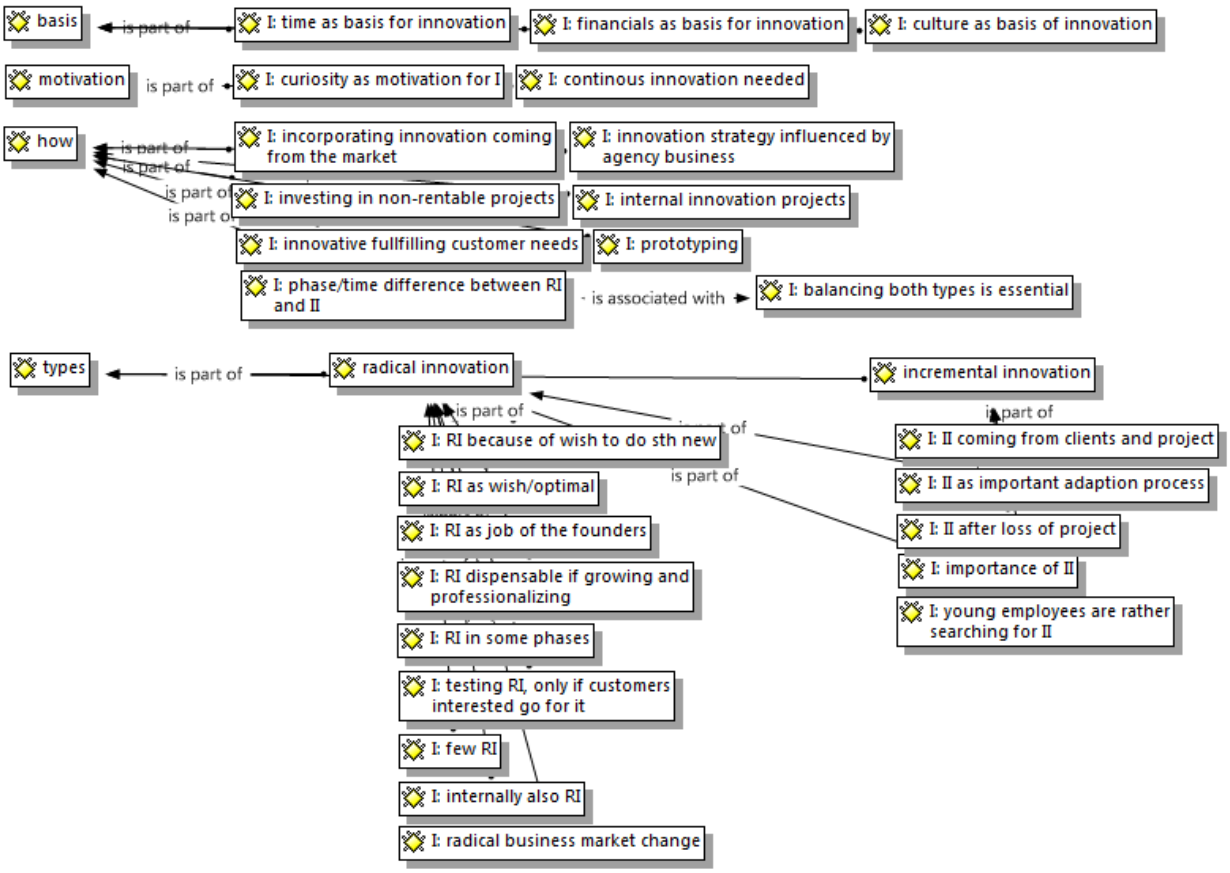




LEADER BEHAVIORS

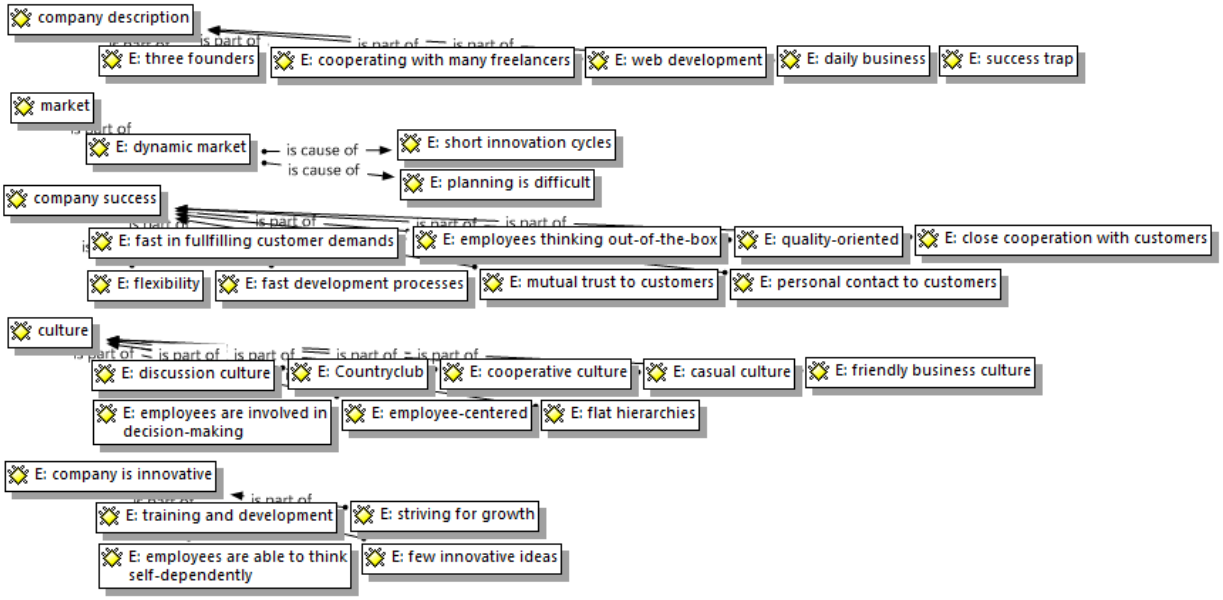

B II: encourage persistence
B II: give freedom and responsibility
B II: feedback
is part of
B II: watch employees work and give feedback
B II: valuing employee's work
B II: reviews and feedback
B II: open to new ideas
is associated with
is associated with
B II: give ideas
B II: store ideas
B II: discussing approach together
is part of
B II: search for potential improvements together
B II: support employees in further development
B II: trigger ideas together in the beginning
B II: design interesting projects
is part of
B II: lots of projects in short time frame
B II: assign interesting tasks
B II: fastly changing projects
B II: search for external input
is part of
B II: visit trade-fairs
B II: knowledge exchange with other companies
B RI: open to new ideas
B RI: constant dialogue
is part of
B RI: discuss ideas
B RI: fast feedback as motivation
B RI: take consulting role
B RI: dialogue with employees
B RI: give freedom and responsibility
B RI: give free time for creative thinking
B RI: searching for time frames for doing RI
B RI: employee is encouraged to take project initative
B RI: do projects with no monetary reward
associated with
B RI: encouraging RI even if operative business suffers
B RI: encourage knowledge transfer
is part of
B RI: team event outside of company to discuss ideas
B RI: innovation day
B RI: let employees earn feedback from other employees

CONCLUSION

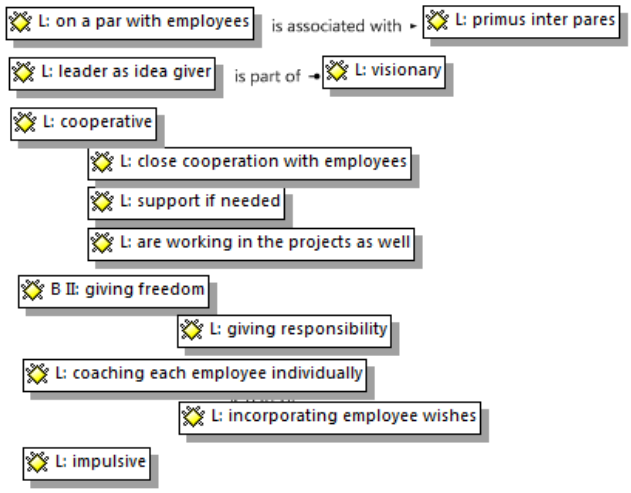


D: CODING: CONTENT

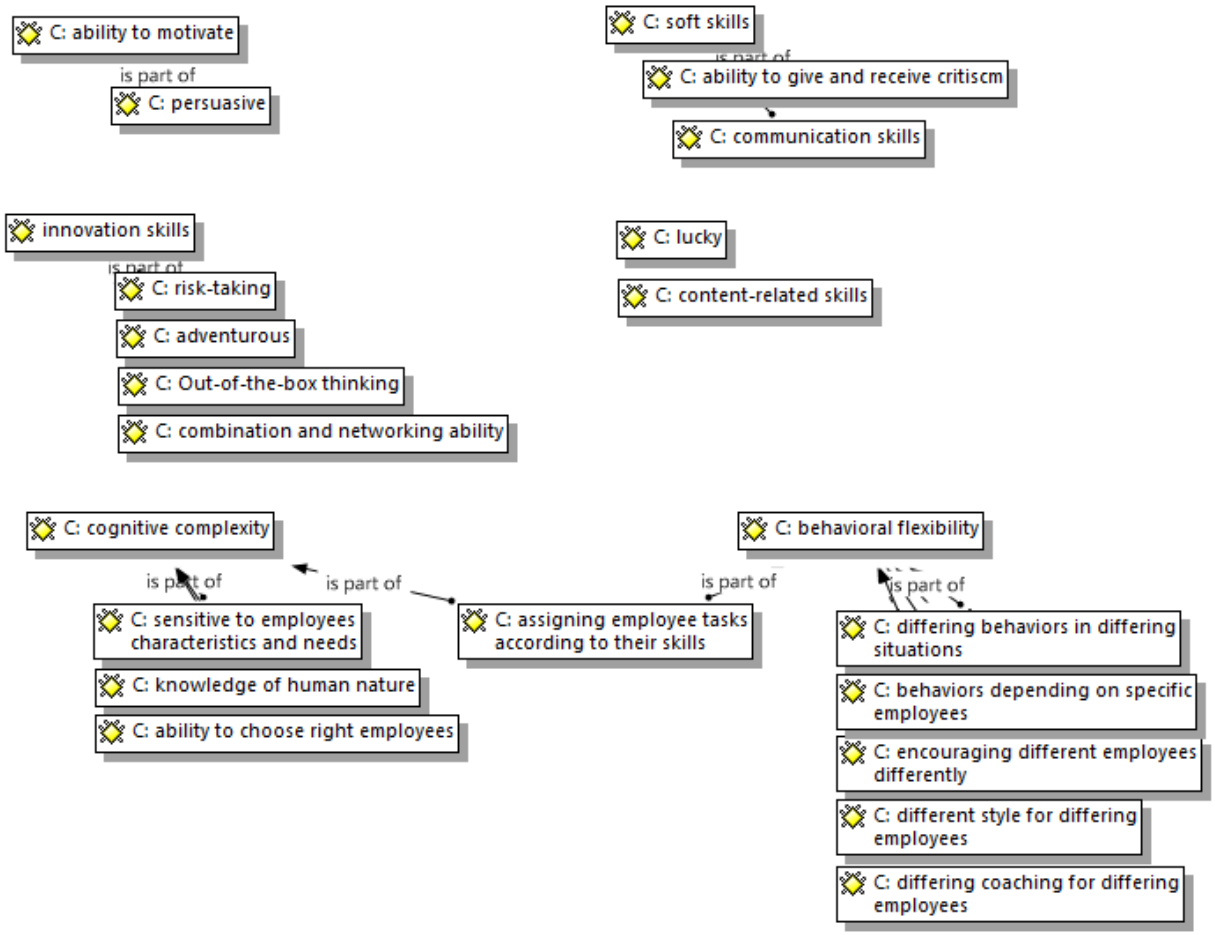
CASE DESCRIPTION



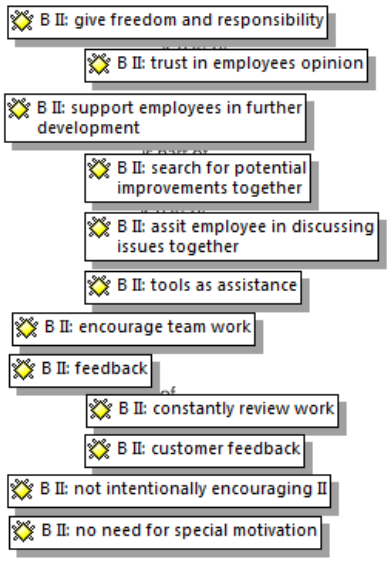
LEADER OVERVIEW

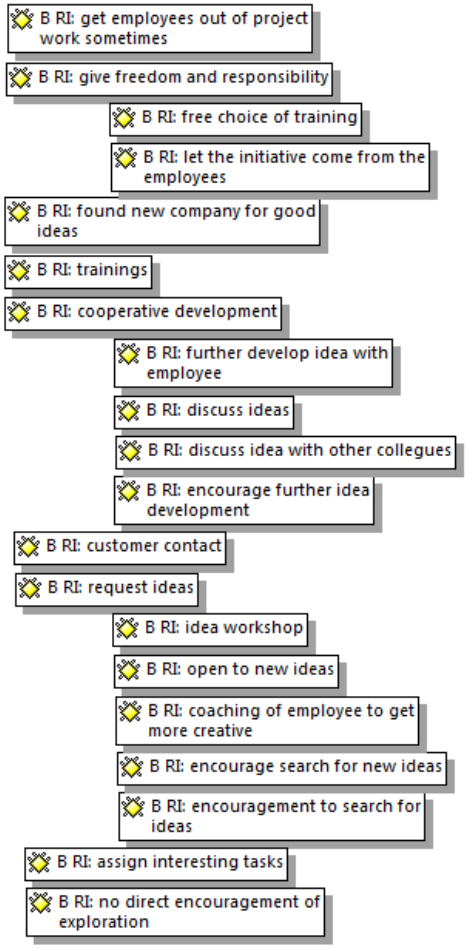


LEADER COMPETENCES

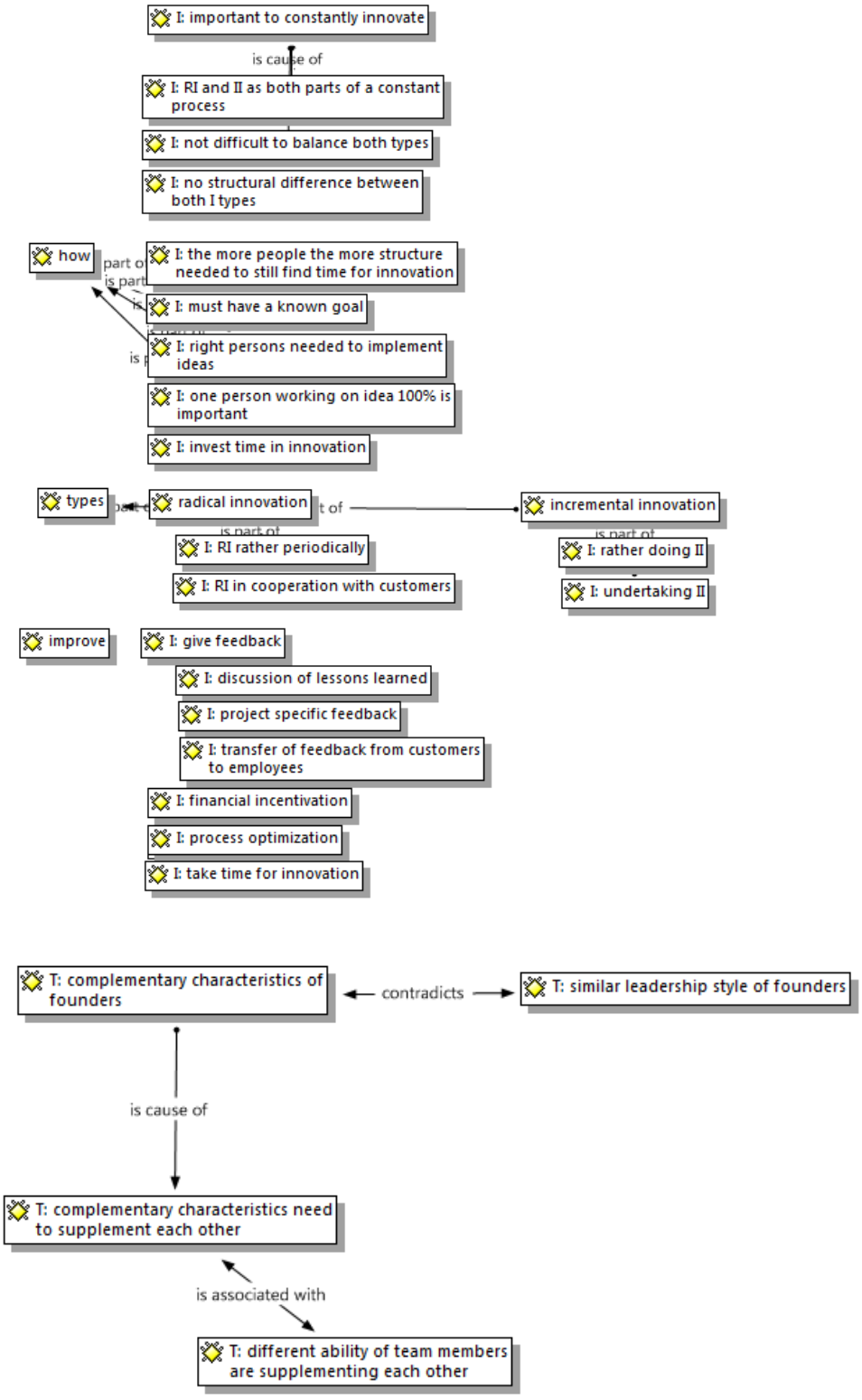


LEADER BEHAVIORS


B II: give freedom and responsibility
B II: trust in employees opinion
B II: support employees in further development
B II: search for potential improvements together
B II: assit employee in discussing issues together
B II: tools as assistance
B II: encourage team work
B II: feedback
B II: constantly review work
B II: customer feedback
B II: not intentionally encouraging II
B II: no need for special motivation

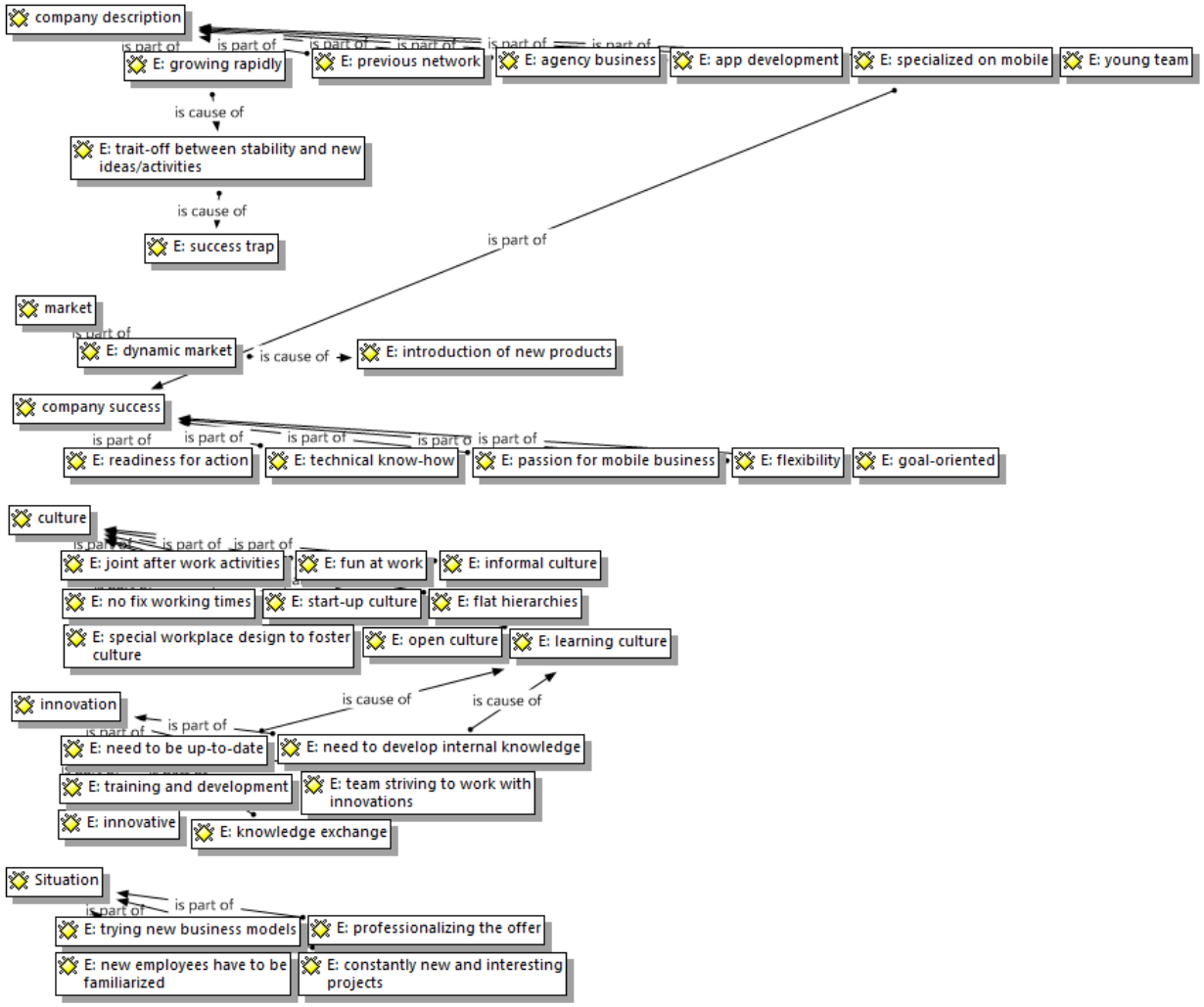

B RI: get employees out of project work sometimes
B RI: give freedom and responsibility
B RI: free choice of training
B RI: let the initiative come from the employees
B RI: found new company for good ideas
B RI: trainings
B RI: cooperative development
B RI: further develop idea with employee
B RI: discuss ideas
B RI: discuss idea with other collegues
B RI: encourage further idea development
B RI: customer contact
B RI: request ideas
B RI: idea workshop
B RI: open to new ideas
B RI: coaching of employee to get more creative
B RI: encourage search for new ideas
B RI: encouragement to search for ideas
B RI: assign interesting tasks
B RI: no direct encouragement of exploration

CONCLUSION

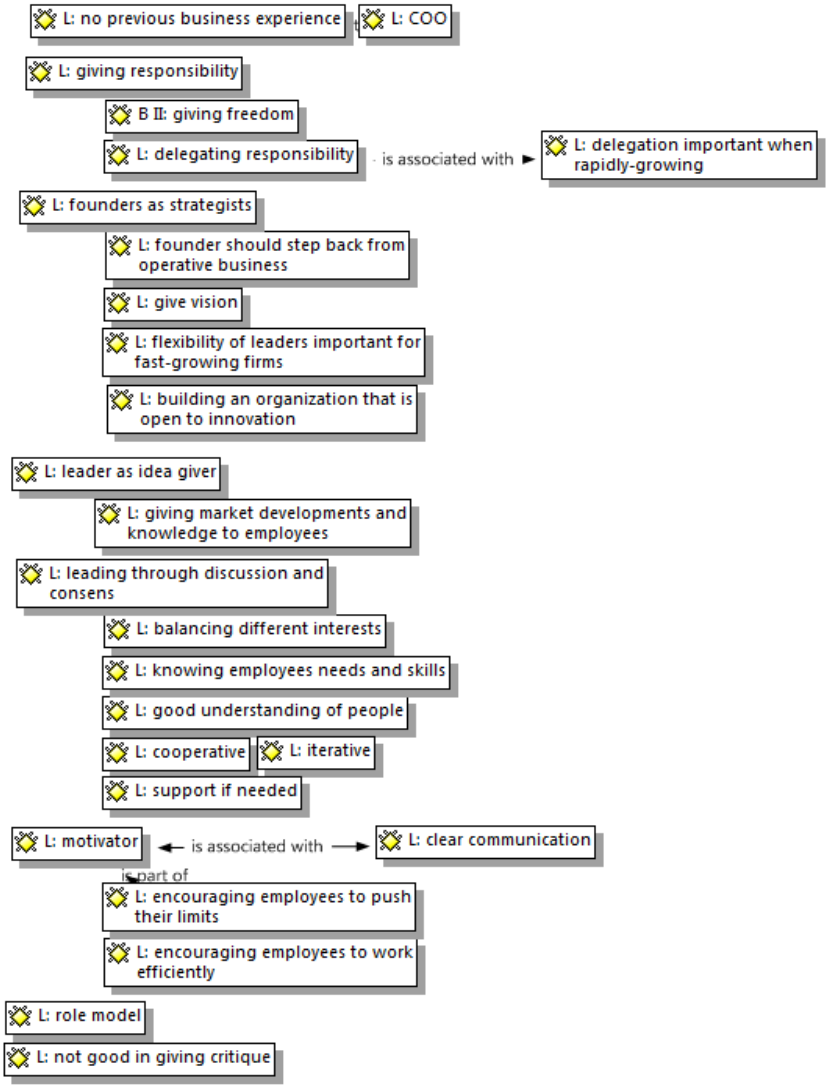


E: CODING: SMART

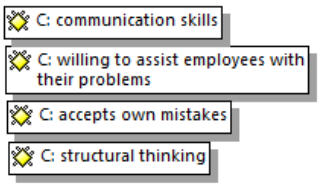
CASE DESCRIPTION

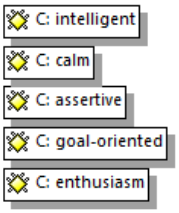


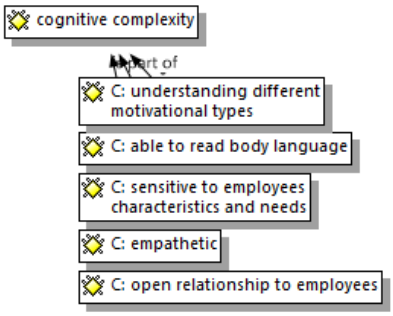
LEADER OVERVIEW

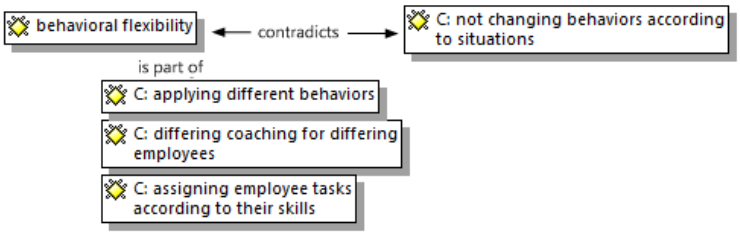


LEADER COMPETENCES

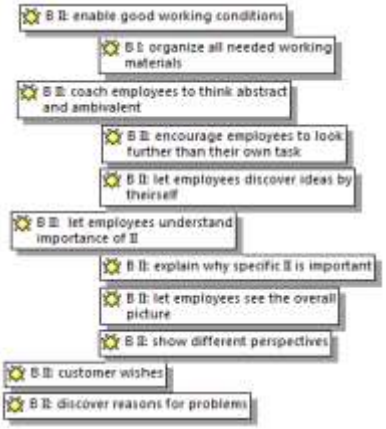


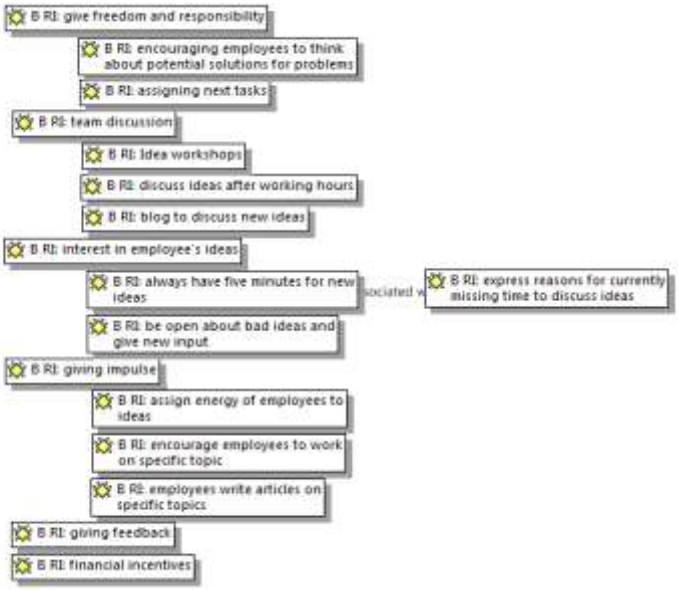




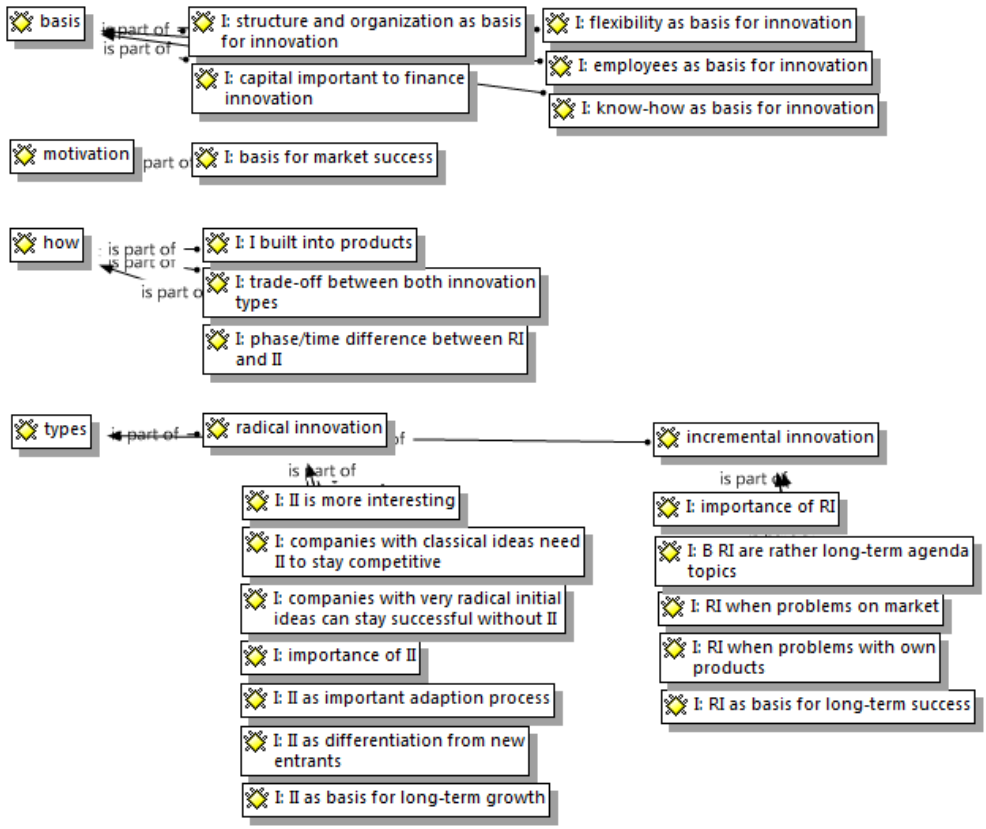


LEADER BEHAVIORS





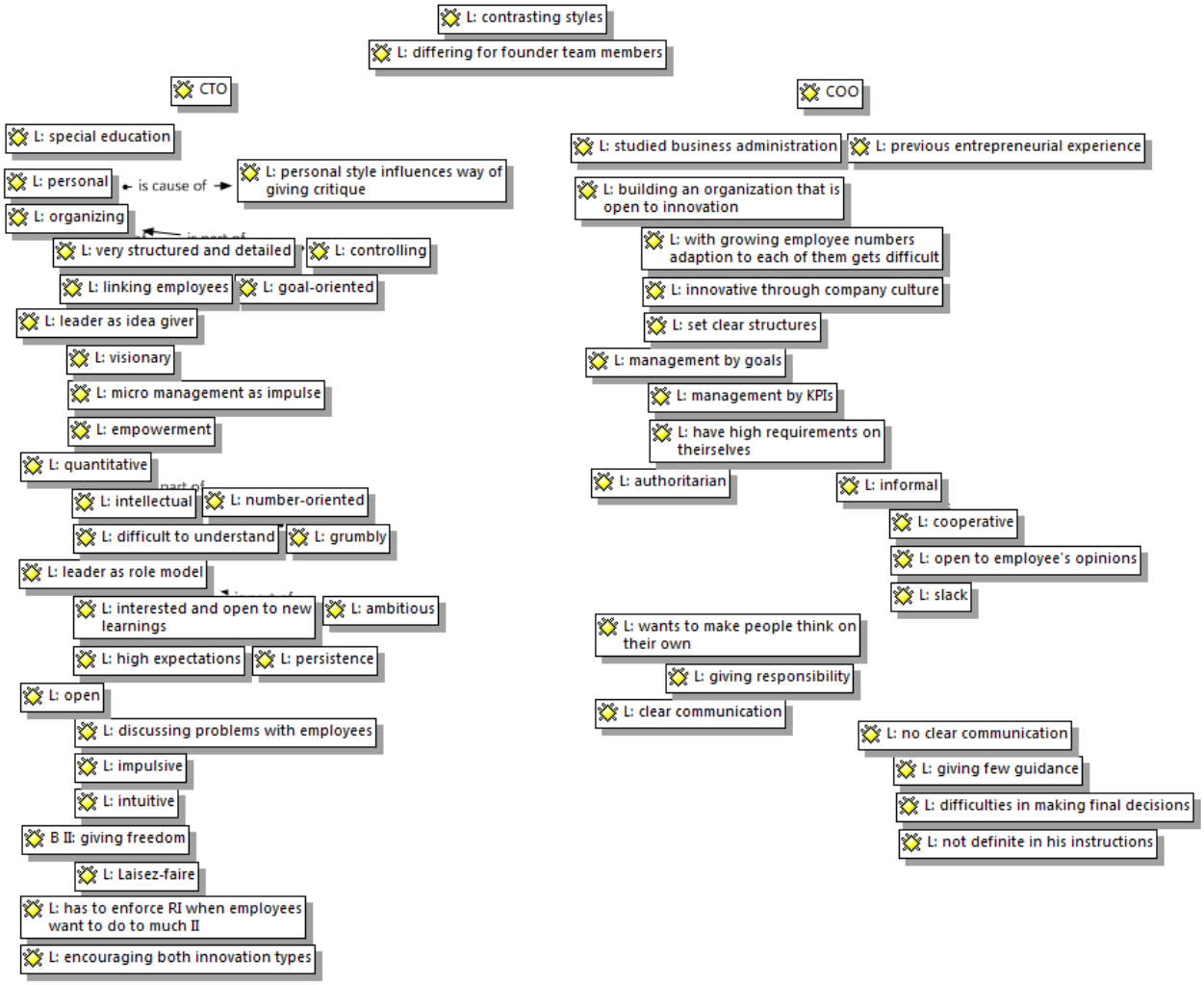
CONCLUSION



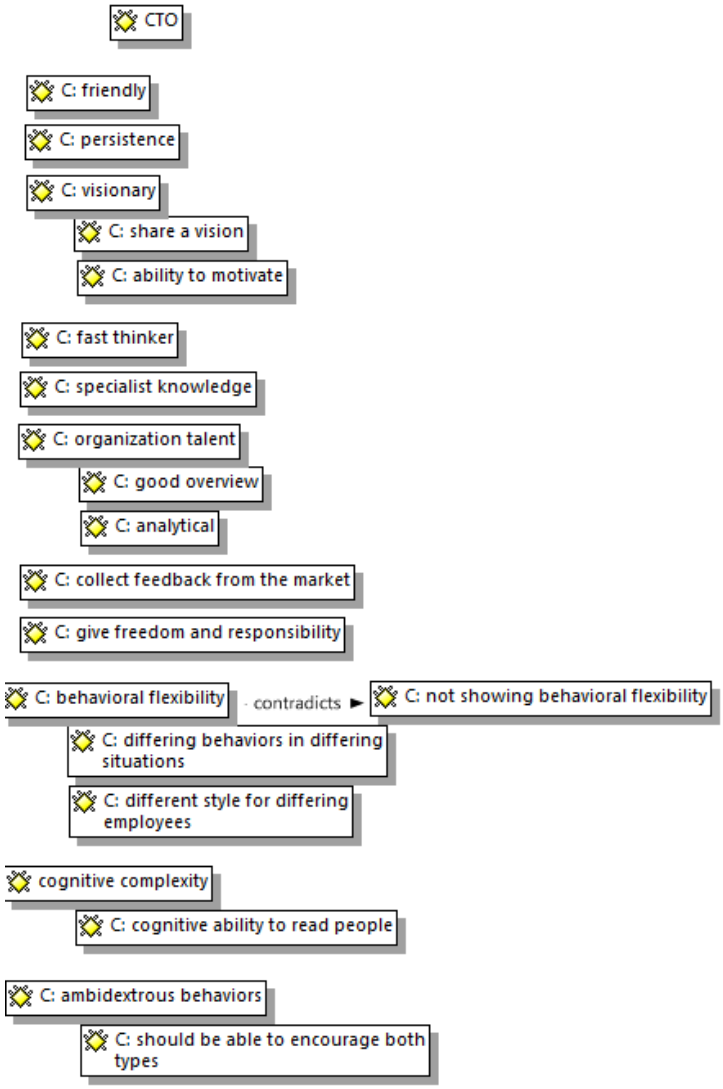
F: CODING: PLISTA

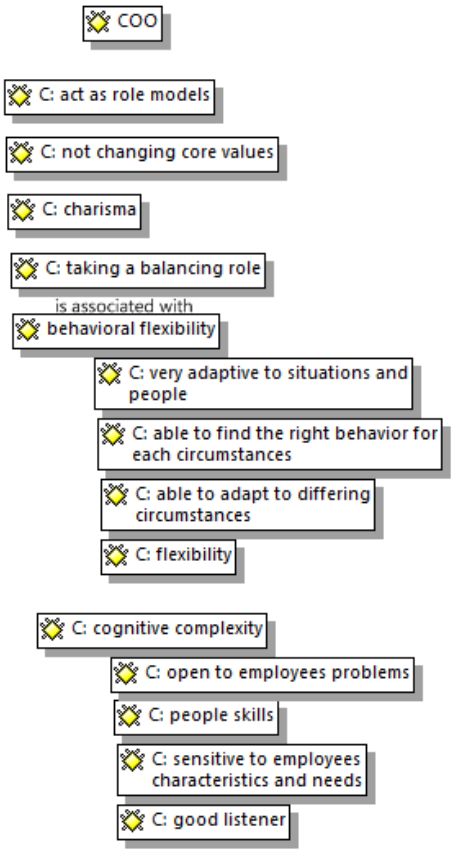
CASE DESCRIPTION

LEADER OVERVIEW

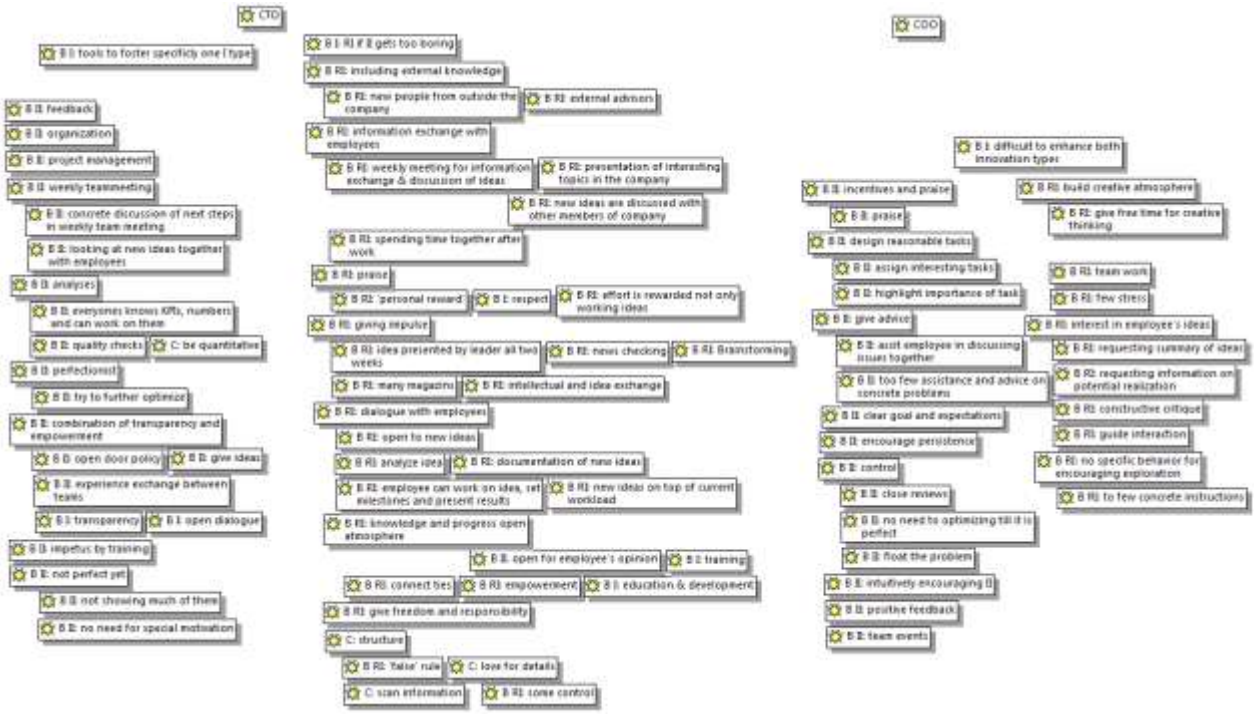


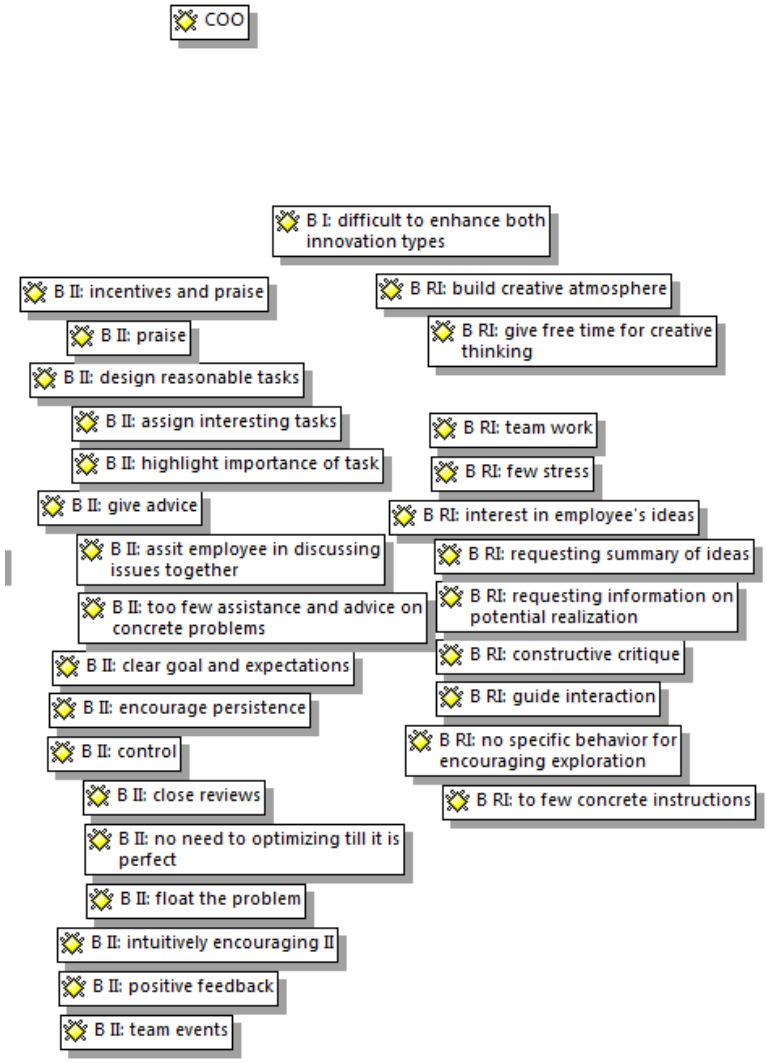
LEADER COMPETENCES





LEADER BEHAVIORS


CTO
B I: tools to foster specificly one I type
B II: feedback
B II: organization
B II: project management
B II: weekly teammeeting
B II: concrete discussion of next steps in weekly team meeting
B II: looking at new ideas together with employees
B II: analyses
B II: everyones knows KPIs, numbers and can work on them
B II: quality checks
C: be quantitative
B II: perfectionist
B II: try to further optimize
B II: combination of transparency and empowerment
B II: open door policy
B II: give ideas
B II: experience exchange between teams
B I: transparency
B I: open dialogue
B II: impetus by training
B II: not perfect yet
B II: not showing much of them
B II: no need for special motivation
B I: RI if II gets too boring
B RI: including external knowledge
B RI: new people from outside the company
B RI: external advisors
B RI: information exchange with employees
B RI: weekly meeting for information exchange & discussion of ideas
B RI: presentation of interesting topics in the company
B RI: new ideas are discussed with other members of company
B RI: spending time together after work
B RI: praise
B RI: 'personal reward'
B I: respect
B RI: effort is rewarded not only working ideas
B RI: giving impulse
B RI: idea presented by leader all two weeks
B RI: news checking
B RI: Brainstorming
B RI: many magazins
B RI: intellectual and idea exchange
B RI: dialogue with employees
B RI: open to new ideas
B RI: analyze idea
B RI: documentation of new ideas
B RI: employee can work on idea, set milestones and present results
B RI: new ideas on top of current workload
B RI: knowledge and progress open atmosphere
B II: open for employee's opinion
B I: training
B RI: connect ties
B RI: empowerment
B I: education & development
B RI: give freedom and responsibility
C: structure
B RI: 'false' rule
C: love for details
C: scan information
B RI: some control
COO
B I: difficult to enhance both innovation types
B II: incentives and praise
B RI: build creative atmosphere
B RI: give free time for creative thinking
B II: praise
B II: design reasonable tasks
B II: assign interesting tasks
B II: highlight importance of task
B RI: team work
B RI: few stress
B II: give advice
B RI: interest in employee's ideas
B II: asist employee in discussing issues together
B RI: requesting summary of ideas
B II: too few assistance and advice on concrete problems
B RI: requesting information on potential realization
B RI: constructive critique
B II: clear goal and expectations
B II: encourage persistence
B RI: guide interaction
B II: control
B RI: no specific behavior for encouraging exploration
B II: close reviews
B RI: to few concrete instructions
B II: no need to optimizing till it is perfect
B II: float the problem
B II: intuitively encouraging II
B II: positive feedback
B II: team events


COO
B I: difficult to enhance both innovation types
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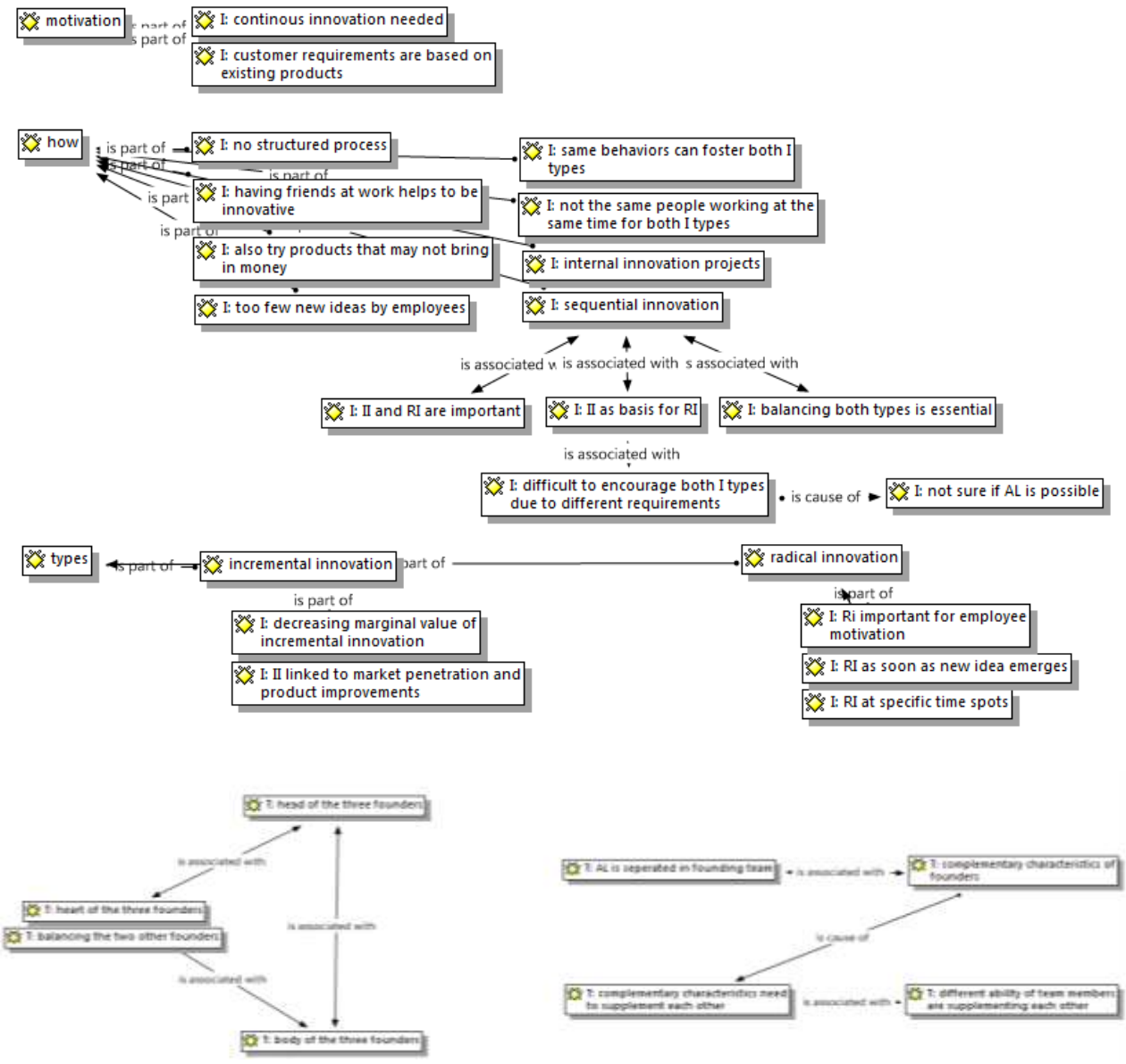
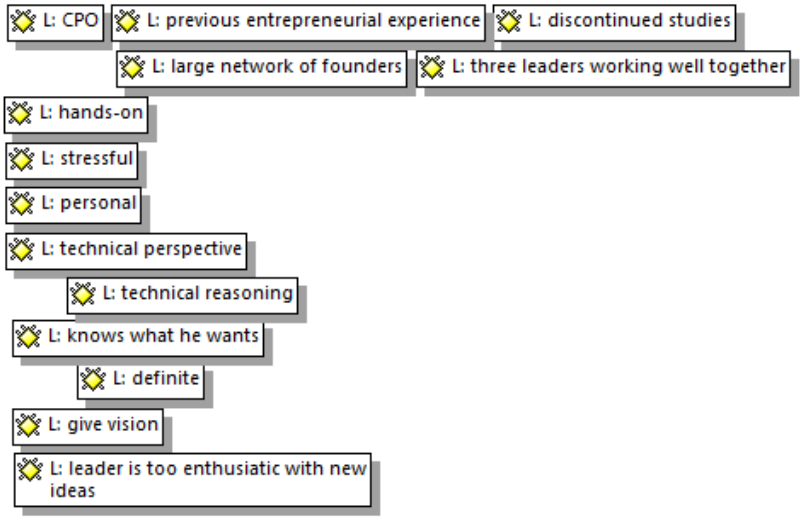
CONCLUSION



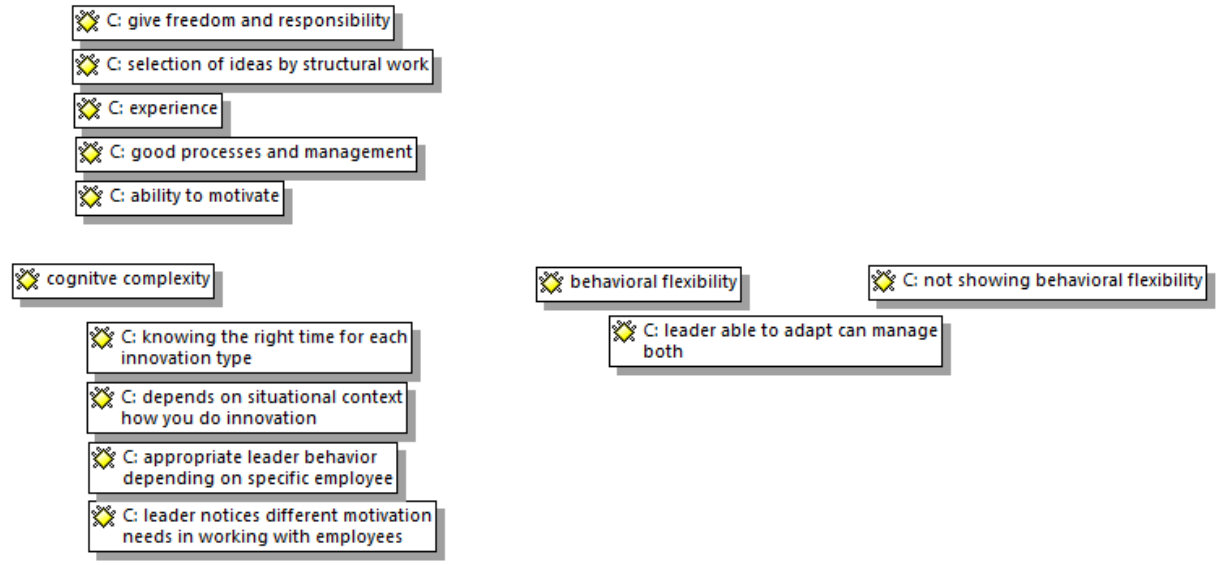
G: CODING: BOOKLET

CASE DESCRIPTION

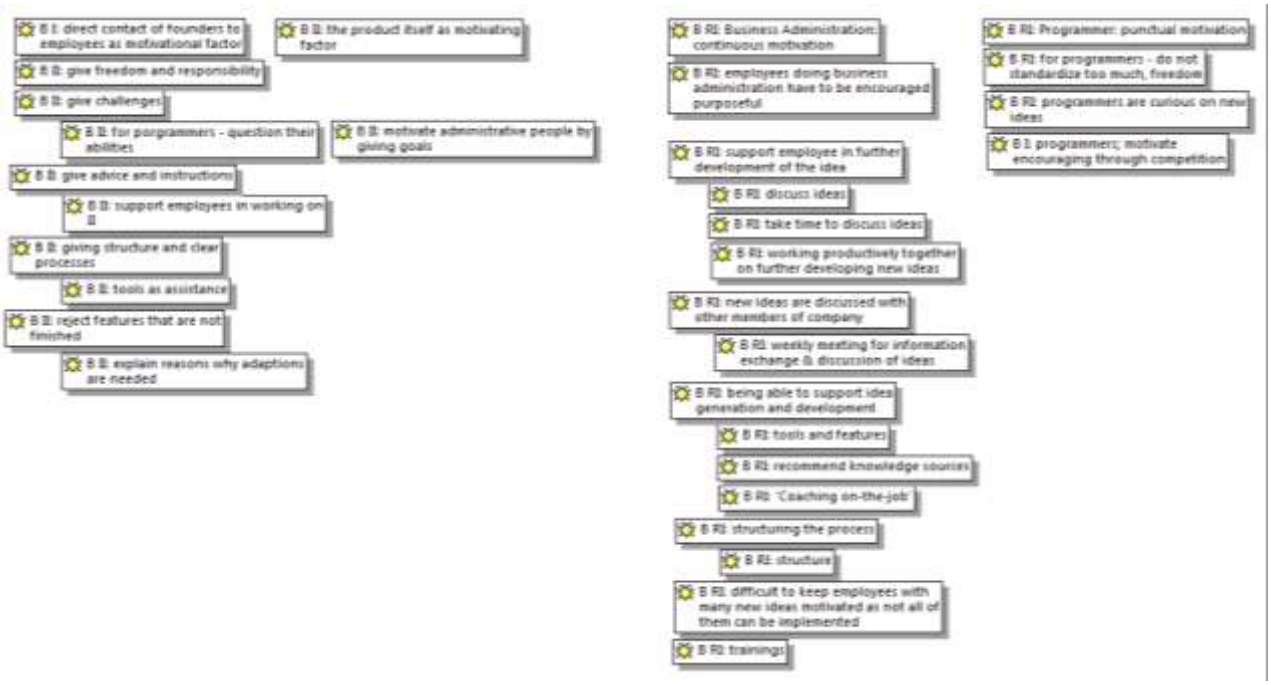
LEADER OVERVIEW



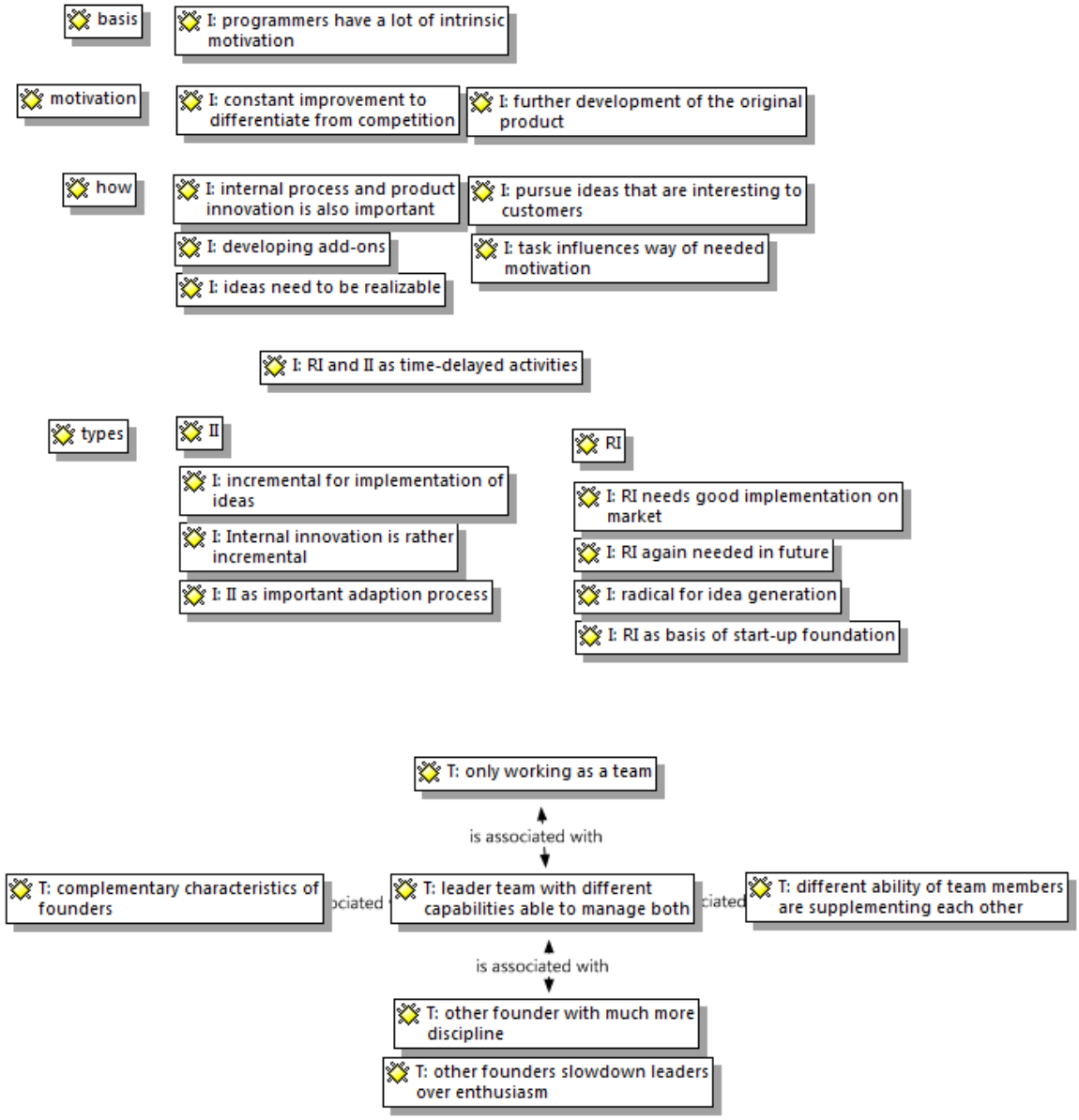
LEADER COMPETENCES



LEADER BEHAVIORS



CONCLUSION


basis
I: programmers have a lot of intrinsic motivation
motivation
I: constant improvement to differentiate from competition
I: further development of the original product
how
I: internal process and product innovation is also important
I: pursue ideas that are interesting to customers
I: developing add-ons
I: task influences way of needed motivation
I: ideas need to be realizable
I: RI and II as time-delayed activities
types
II
I: incremental for implementation of ideas
I: Internal innovation is rather incremental
I: II as important adaption process
RI
I: RI needs good implementation on market
I: RI again needed in future
I: radical for idea generation
I: RI as basis of start-up foundation
T: only working as a team
is associated with
T: complementary characteristics of founders
T: leader team with different capabilities able to manage both
T: different ability of team members are supplementing each other
is associated with
T: other founder with much more discipline
T: other founders slowdown leaders over enthusiasm

H: INTERVIEW TRANSCRIPTS

Due to ecological reasons the interview transcripts are attached to the Master Thesis as files on a CD.