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What is the Role of Leadership in ICT Companies?

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ABSTRACT

While there exists a range of studies on the issue of leadership in general, research on leadership in the context of information and communication technology (ICT) firms is rather limited. This is an extremely important topic because ICT firms experience quite different circumstances of operation than those faced by non-ICT firms. Uncertainty and complexity characterize ICT firms which influence strategies of leadership. As a result, leaders typically know too little or often have volumes of unreliable information about the future. As a result, leadership of contemporary ICT firms is an extremely complex and interesting area of research.

The aim of the thesis is to understand the role of leadership in ICT firms, especially in relation to issues of uncertainty and complexity. This question is approached through a blend of secondary data and theoretical analysis coupled with a limited set of interviews with leaders in Oslo. The research approach adopted was interpretive as the aim was to understand how leadership at one level is shaped by particular socio-cultural-market conditions, and at another level is a function of personality and individual issues. It was felt that such issues can not be adequately grasped through a positivist approach.

Leaders of ICT firms need to motivate the employees to stay in the firm and to perform optimal work. Leaders of ICT companies also need to trust their employees to a large degree, so that the employees can use their full potential in contributing to the firm. Furthermore, leaders of ICT firms need to be playful in their approach to work because it contributes to motivation and learning. In addition, leaders of ICT firms need intelligent employees that understand technology, its implications and use. The leaders need to be intelligent themselves so that they can understand technology, the real issues their employees face, and how to organize the firm efficiently.

The testing of software should be done as soon as possible after each minor piece of programming to ensure that the program works so far. Thus leaders need to install procedures which reward error-free program pieces and slightly punish the creation of noticed bugs. The development should be divided into features of the program rather than phases of the waterfall approach. In this way the most important features can be developed first, which spares confusing details to later on. Thus leaders need to organize projects, buffer times and timelines according to estimations and expectations based on what the program is to do first, then next, and so on instead of focusing on separate specification, design, programming, and testing phases.

The theoretical contribution of the thesis is in the form of a model of leadership that has been inductively derived based on the empirical analysis. The model firstly identifies four key contextual conditions that influence leadership approaches. These relate to markets, technology, the physical environment and the political setting. These contextual conditions shape leadership styles. Eight dimensions of leadership style are identified and discussed. Trust, motivation, playfulness, and intelligence are seen to be opposed to power, authority, bureaucracy and risk, respectively. For example, gaining more trust implies letting go of power. While in ICT firms, the factors of trust, motivation, playfulness and intelligence seem to be more relevant, the other four are seen as relevant for leadership of non-ICT firms.

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1 INTRODUCTION

This thesis asks, "What is the role of leadership in ICT (information and communication technology) companies?" In answering this question, mainly successful ICT cases will be looked at. Success is here used in a financial sense, implying net profits or at least rising revenues. To bring in contrasts, some unsuccessful ICT cases and some non-ICT companies will also be studied. This introduction to the thesis on the role of leadership in ICT companies starts with a section on the current environment that emphasizes aspects of uncertainty and complexity, and its implications at the institutional and individual levels. The second section looks at the role of leadership in managing in such ICT environments, and the adequacy of existing literature on leadership to understand this.

1.1 Uncertainty and Complexity Today

Information systems (IS) is the branch of computer science that deals with the context and process of developing computer systems. An interesting question here concerns, what is uncertainty in the context of IS? Uncertainty relates to conditions when one knows too little to make the necessary decisions. Uncertainty may also appear when the reliability of the information one needs to make decisions may be jeopardized (Mathiassen 2002.) Thus uncertainty is a condition when one knows too little definitively. Another important question concerns the picture of IS when it comes to complexity. Complexity enters where there is too much information to make a specific decision. Complexity can also arise where the information is too unstructured (ibid.) Complexity thus appears to be a situation dealing with too much detail. An example of uncertainty in IS is at the beginning of a project, where one needs to assess how much time the various development phases will take. Unexpected difficulties usually arise, making one use more time than initially assessed. When assessing customer needs for the computer system to be designed, many reports are created and much information is gathered. This can lead to a large amount of detail, thus introducing complexity to the project.

Since systems developers are confronted with both these conditions, another important question is, what is the relationship between uncertainty and complexity? Dealing with uncertainty in IS can be done in an experimental state of mind, investigating options and by trying them out. Complexity can be dealt with by an analytical approach, examining for more abstract principles from the mass of details. In IS, reducing uncertainty creates more complexity, and reducing complexity creates more uncertainty (Mathiassen and Stage 1992.) This seems plausible in that the ground of uncertainty appears to be the opposite of the basis for complexity. Knowing too little for sure appears opposite to having too much detail. Thus solving uncertainty and complexity represents a trade-off issue, where a compromise approach is desirable. Uncertainty is related to the notion of risk, which is an important topic today (for example, Beck 2000,) considering questions such as terrorism and war. Reducing this uncertainty can create more complexity. Attempting to prevent acts of terrorism after they are planned but before they occur necessitates the sieving through of lots of information such as from tapped phone lines and email messages, most of which are irrelevant. In IS, awareness of risks appeared over a decade ago,

most notably in Boehm's (1988) spiral model of software development. This is a model which has risk assessment as a central ingredient.

We are living in a world today characterized by uncertainty and risk. Risk has become a topic for discussion of various writers. Beck, for example, uses the metaphor of a "risk society" in discussing the global and multifaceted nature of contemporary risks and the surrounding uncertainty. Potentially, natural disasters can strike anywhere. Pollution contributes to the threats of nature. Man-made risk, such as arising out of side-effects of inventions and products, are also becoming more known. SARS (severe acute respiratory syndrome) may not be a directly man-made risk, but its ease of spreading is due to the ease with which humans can travel due to inventions such as the airplane, the train and so on. The risk of SARS is also known well currently, due to inventions such as TV and the Internet. Discoveries in the natural sciences, related industries, and research and development, lead to technology whose final side-effects are yet partly unknown. If they are not known now, they will be discovered later. An example being genetically modified crops, where science has limited understanding of its influences on future generations of cropping patterns.

More specifically, in the context of computing, there are often large knowledge gaps - which one might not know of - when a computer system is to be developed. This implies uncertainty. Managing such uncertainty in creating computer systems is seen by some as better addressed through continuous learning, rather than by drawing upon assumptions of full knowledge or rationality (Mathiassen and Stage 1992.)

How is today's environment complex? Processes of globalization and localization interact. For example, one could say that Disney's characters are fairly global, appearing in many countries. However, they are presented in local variations, with names from the country in question, not from the USA. In Italy, for example, the name for Mickey Mouse is Topolino. The Euro-Disneyland chairman stated that Italian children perceive Topolino to be Italian, not American (Beck 2000, p. 42-43.) Thus on the one hand, Disney dominates globally, but their products are adapted to local contexts, indicating a degree of localization. On the other hand, the localized versions contribute to the revenues of the global company, and managing this process is fraught with complexity. Imagine reading about Donald Duck in a language one does not understand. With globalization, it is argued that rich countries get richer and poor countries poorer. Such a one-off picture is tilted by chaotic details. A symbol for national wealth is Internet access. In Asia and Latin America the growth rate for the increase in the number of Internet users per year is higher than in the highly developed Western countries (Castells 2001.) Thus today's environment is not simple; it is complex, as it defies simple linear explanations.

The development of computer systems was used to represent an example of complexity. One might naively assume that the ICT system to be introduced is all that counts. However, psychological, organizational and technological problems and their interconnections render reality complex and are typically ignored by leaders (Ciborra 1993.) As an example of psychological issues, one could mention power and opportunism (Walsham 1993.) Technical factors for decisions are often stated as the primary reasons, as they give power and legitimacy to steer in the direction of a particular decision one would like. Opportunism may enter where circumstances

allow easy gratification of motives. Such human aspects contribute frequently to technical decisions more than one might assume.

In organizations, responsibility in managing uncertainty implies sticking to selected options and taking the consequences. These consequences as a rule are not fully known to anybody a priori, and there is uncertainty at the level of both the institutions and their members. However, leaders tend to have the largest pain as well as the largest gain, as they have to face the brunt of the uncertainty, taking responsibility for the path forward. Leaders face different issues than those experienced by their staff. While staff may make decisions at lower, less influential levels, such as ensuring the daily progress on a project, the leader has to stake the broader course of the company with decisions on which project to select in the first place and who to fire or hire.

Bureaucracies often generate huge amounts of information, much of which could be redundant or avoided by basing work more on trust. These piles of data generated contribute to complexity. Leaders try to deal with such complexity, for example in the Brazilian company Semco, where the new leader started by throwing out the existing rules. The approach was highly democratic, as the workers could vote on how much profit would be shared among them and the leaders. The workers could sometimes decide themselves on the volume of their work, and when they could perform it. They even had an impact on strategy and marketing plans (Semler 1994, p. 1 and 4.) This example highlights on how an innovative leadership approach turned the situation around by changing the existing rule-based system with new procedures based on a redefinition of worker-manager relations.

The Internet represents an immense amount of complexity for all individuals who have access to it. Often when searching for an item one gets thousands of hits, if not more. However, searching and fine-tuning possibilities make this complexity more manageable. Managing complexity might be part of the daily task for leaders, in the sense that lots of information must be filtered out, in order to hopefully remain with some facts relevant for decision-making. Filtering information is at a lower level also done by non-leaders. The human attention span requires adherence to a certain essence, a focus (Atkinson et al., 1996.) However, leaders face the need to sift through information at a higher, strategic level. While employees might concentrate on their current task, for example, filtering out sensory noise such as the sounds coming from the ventilator, leaders might concentrate on a current status report, then on a meeting with some managers, and so on. Their ability to find the critical aspects of an issue has concrete implications in terms of how the company fares.

1.2 Uncertainty, Complexity and Leadership

In contemporary times, leaders in organizations are confronted with uncertainty when making decisions. "Decisions are something a boss must make when the information he is basing himself on is so incomplete that the answer is not clear" (Roeim 1994, p. 40.) Leaders in ICT firms face very high levels of uncertainty, both related to market and technological changes and their underlying unpredictability. Leadership is concerned with the simultaneous problem of dealing with a deficit of reliable information, and also an accumulation of information that must be filtered. For example, Bill Gates, the chairman of the highly successful Microsoft Corporation, is

reported to take "learning vacations" where he gathers experts from a certain field, listening to their teachings. He is also said to thoroughly read *The Economist* (Dearlove 2000.) Thus he represents an example of a leader continuously sieving through large amounts of information, as a strategy to deal with the complex and unpredictable world in which he operates and also creates.

The current organizational environment which leaders need to deal with is extremely uncertain and complex. For example, leaders face the uncertainty of their institutions. Institutions operate in a network as they relate to other agencies, creating conditions for each other to both thrive and die through competition and collaboration. These institutional linkages are regulated by broader governmental and political frameworks which are themselves highly unpredictable and subject to change. At the individual level, staff also lack good information and often depend on their boss for help through the provision of information or guidance. Thus leaders need to deal with both external pressures arising from other institutions and governmental policies, and also rising information demands of their staff.

Highly successful leaders, such as Gates or Semler, deal with such challenges by trying to minimize the bureaucracy in the workplace. When leaders create a bureaucracy to deal with challenges of growth, they also simultaneously create complexity with detailed rules. Good leaders are likely to reduce the detailed procedures for the work to be done. However, an oversimplification process can lead to other challenges, raising the need for finding a mean level of complexity. Such an argument has also been made by Hundsnes (2000) and is implied in the principle of limited reduction. Bolman and Deal (1997) argue that there are different kinds of bureaucracy, suitable for different kinds of organizations. For instance, McDonalds is a so-called machine bureaucracy. The top level makes important decisions, whilst managers and working routines control daily operations. This kind of bureaucracy hinders innovation, but then again at McDonalds little innovation is needed (ibid., p. 64.) Harvard University, on the other hand, is an example of a professional bureaucracy where control is collected at the top to an even greater extent than in a machine bureaucracy. The weakness of this type of structure is its slowness in reacting to changes occurring in its external environment (ibid., p. 65-66.)

It is probably no coincidence that so many software entrepreneurs have a good education (Amsden and Clark 1999.) A good education is likely to develop and enhance one's ability to go through large amounts of information and retain important parts of it, which helps to handle complexity more effectively. However, it can also bring in more complexity, as the person acquires more knowledge opening the potential for different perspectives to be expressed on an issue.

In sum, uncertainty and complexity can be viewed as opposites, and leaders need to deal with both, and attempt to develop a suitable balance to effectively run their companies.

This thesis seeks to understand the role of leadership in ICT firms. For purposes of comparison, this relation is also studied in non-ICT firms so as to understand what the differentiating aspects are. Another basis for comparison is the analysis of successful and not so successful ICT firms with a view to understand what kind of leadership style in ICT firms makes a difference. The scheme for the comparison is depicted below:

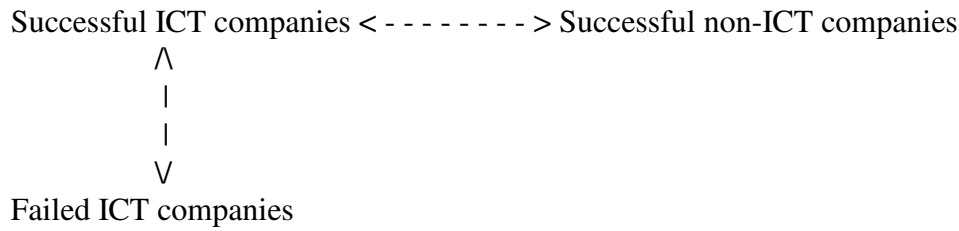


Diagram 1.1
Overview of Comparisons Made in this Thesis

The thesis is structured in a traditional way, with theories appearing first, then the research approach, followed by two analysis chapters, a discussion chapter and the conclusion. The theory chapter which surveys the literature on leadership is the next chapter, chapter two. It is necessary to find out more about leadership in general, in order to be able to understand how it relates to ICT companies later on. Chapter two helps to provide a theoretical basis to help analyze the role of leadership.

2 LEADERSHIP

Lexico LLC (2002) defines leadership in the following way:

1. The position or office of a leader: *ascended to the leadership of the party.*
2. Capacity or ability to lead: *showed strong leadership during her first term in office.*
3. A group of leaders: *met with the leadership of the nation's top unions.*
4. Guidance; direction: *The business prospered under the leadership of the new president.”*

Then similarly, Allen (2000, p. 794) defines leadership in terms of what it means to be a leader, including the following aspects:

- A. Somebody or something that ranks first, precedes others, or holds a principal position.
- B. Somebody who has commanding authority or influence: *the leader of the rebellion.*
- C. The principal officer of a political party, trade union, etc.: *the leader of the opposition.*
- D. [Sense 1d is confined to the British, not the American language.]
- E. Somebody who guides or inspires others: *a spiritual leader.*

The position or office of a leader will be discussed in this thesis, but not a primary focus. Rather, the capacity or ability to lead will be a more dominant focus. Leadership in this thesis will not be used to refer to a group of leaders. Guidance and direction will be important to a certain degree. The main use of leadership in this thesis will thus be the capacity or ability to lead with some light shed on guidance and direction.

Ranking first and preceding others will be present implicitly because it cannot be denied. Authority or influence can neither be denied, but will not be an important topic. The principal officer of a political party, trade union etc. will not be used as a meaning of leadership as it relates to the public instead of the private sector. Leader will in this thesis refer to somebody who guides or inspires others.

The focus on leadership in this thesis will look at capacity or ability to lead with a consideration of guidance and direction. A leader will refer to somebody who guides or inspires others. Considering these two definitions together, another set of definitions suitable for the purposes of this thesis can be reached: leadership will here refer to the potential to lead, guide and inspire, and leader to somebody who has the potential to lead, guide and inspire. These two definitions are developed by me drawing on the two dictionaries mentioned above.

Leadership must be distinguished from management. Allen (2000, p. 844) defines management as “the activity, work, or art of managing.” This definition goes back to the word manage, which is defined as “to conduct the running of (a business.)” Leaders are usually thought to be more in charge of the organization compared to managers who are responsible typically for a single function. The distinction is not always clear-cut. However, because of closer proximity with his or her staff, a manager may attain more informal power in the group than his or her position suggests. Still, managers deal more typically with administrative and operational issues and leaders more with larger issues such as vision, strategy, politics, and actions that directly influence people (Alvesson 2002, p. 100.) Thus management is done at a lower level than leadership. Leadership is more conceptual and management is more concrete. In this thesis, leadership will be the focus, not management. Where management is used, it will refer to the organizational levels below the leader. Leaders and leadership is the main focus of the thesis.

The question addressed in this thesis concerns the role of leadership in ICT companies. However, looking only at successful cases might be a too narrow focus, and the study of unsuccessful cases can lead to additional insights. There is currently limited literature available on the role of leadership in ICT firms. I thus survey the literature more broadly on leadership, and develop implications for ICT firms based on some unique characteristics of these organizations. The remainder of this chapter is presented in four sections. The first one brings an overview of leadership theories in general. Section 2.2 discusses specific implications for leadership that emerge from the survey of leadership research. After presenting a brief summary of the literature review in section 2.3, a final section discusses the relationship of existing theories of leadership and their implications for the particular context of the ICT sector.

2.1 An Overview of Some Theories of Leadership

In the introduction, I discussed some aspects related to complexity and uncertainty and their interrelations. I am concerned with the question of how managing the trade-off between complexity and uncertainty relates to theories of leadership. This section is organized under the following six subsections. The first three are fairly general and provide an introduction to leadership. In subsection one, I address the question of the general role of leadership. In subsection two, I discuss the role of leadership in taking action. In subsection three, I examine the role of leadership in varying situations. The next three subsections add more flesh to the earlier skeleton of what leaders do. Subsection four introduces different approaches to the role of leadership. The fifth subsection looks into determinants of leadership, providing an overview of research related to this. The sixth subsection discusses the relationship of leadership and empowerment.

2.1.1 The General Role of Leadership

While one may hold leaders to be the main source of influence in an organizational setting, the relationship between leaders and followers is not one-way (Bolman and Deal 1997, p. 247.) In order for leaders to be able to lead effectively, they must be able to listen to their followers. The followers' needs and wishes should be accounted for by the leader, otherwise the leader might

lose power and respect. The relationship between leaders and followers may be more one-way in a dictatorship. However, as has been seen with the collapse of the Soviet Union and some Eastern European states, such leaders lose in the long run. When followers are consistently forced or coerced to do certain things, being harnessed by a tyrant, the leader-follower relationship faces a dim ultimate future. Leadership is about leading, not forcing (Tramel and Reynolds 1981, p. 6-7.)

The leader-follower issue is also discussed in various studies of culture. A key question is, does the leader create the culture? Or does the culture form the leader? It goes both ways. Leaders have an impact on the culture, but are also following it in the process of expressing it. Leaders represent the culture of their followers and the organization. Where this culture may be unsuitable, the leader might attempt to bring changes. The relationship between culture and leadership effectiveness is not as simple as one might assume. One can argue that there are four theoretical frameworks to examine the relation between culture and leadership performance: 1) where commitment to the same culture by both leaders and employees brings success; 2) where success brings commitment to the same culture; 3) where different cultures are efficient in different settings; and 4) where adaptive cultures exist, which score highly on trust and risk. Adaptive cultures may not be as suitable in "stable environments" (Alvesson 2002, p. 53-54.) Environments of ICT firms in general and their leaders in particular operate under the strain of many risks. Are adaptive cultures more suitable to ICT firms than non-ICT ones? Non-ICT firms may provide more stable environments, thus rendering these perspectives plausible.

In sum, leaders might be less of a "God" than commonly assumed. Their decisions are not pre-determined; rather they emerge from meetings, discussions and so on. The role of intuition in impacting decisions is large (Bolman and Deal 1997, p. 265-266.) It is likely that leaders have a higher degree of initiative than middle or lower level managers. Nonetheless, leaders and followers need to be considered as one whole. Internal conflict can arise within this whole, which can change it into a new whole. The implication for this thesis is that leaders, managers and followers influence each other, although in different degrees and in different situations. It is the person with the greatest need for power who is expected to be the most efficient as a leader, according to McClelland and also reinforced through other research (Andersen 1995.) The types of needs that McClelland distinguishes between are the need for power, the need for achievement and the need for affiliation. People can have different need profiles, as it is not an either-or issue. There are many variables influencing who emerges as a leader of a certain organization, such as intelligence and social skills. One important variable seems to be the need for power, where those with the highest need for power have a higher chance for becoming leaders than those with lower needs for power, all other variables being equal.

2.1.2 Taking Action

While it can be argued that power-desiring people tend to rise to the top, the interesting question is how do they do so? Effective leaders work long hours. Bill Gates, for example, the leader of the highly successful Microsoft Corporation, is reputed to work ten hours every day, including weekends and business-related social meetings (Gates 1999.) The famous leader of Chrysler, Lee Iacocca, usually also had a ten-hour work day (Gordon 1985, p. 166.) Thus it appears that not only power-wanting people are in charge; but work is in charge of their lives. Leadership has been

a popular topic for various authors, resulting in a mass of books on the subject. Writings on leadership can be seen as analogous to writings on losing weight. There are many books on losing weight, but success requires following the basic rule of eating less (Iacocca 1988, p. 93.) The correspondence to eating less in leadership is to work more. Leadership means a lot; but it also means to work a lot. There is no short-cut to hard work. However, if one is passionate about the work, it can turn into play, which renders it less stressful. Playful working lets the work appear desirable and gratifying, so «hard work» may actually be a misnomer, and would instead imply «lots of work.» This comes closer to playful work, but still does not capture the emotionally positive charge that comes with playfulness. If one likes the work, working many hours may feel like working few hours.

What is a leader's work all about? Formally, there are things that must be done, things that can not be done, and the task of making choices. Things that must be done include fulfilling the expectations of shareholders, the owner, chairman, loan authorities and to some degree the expectations of the employees. Tasks to be done may include activities of budgeting, authorization of expenses, and formulating and implementing procedures and processes (Barkstedt and Borgman 2000, p. 62-63.) Things that can not be done are often due to limitations of time, resources, equipment, co-workers, the changing environment and more. Laws and rules must be followed, and these can relate to diverse topics such as recruitment, working environment, and safety. The market conditions are also very important as they influence where the firm earns money and where not. The geographical whereabouts of the company limit the leader's choices, or even provide the leader with new potential opportunities (ibid.) There are also a number of informal matters, such as the social relationship between leader and employees, that also influence what a leader does.

Over time, the leader can change which things must be done and which can not be done due to his influence in the firm (ibid.) As an example of choosing what is to be done, Gates had in early 2002 sent all his employees an e-mail telling them to give the highest priority to software security (USA Today 2002.) This illustrates how leadership over time may change priorities of the company. As the focus on software security came from the top, in the future leadership in that firm would have to respect the importance of software security. Thus if Gates would be replaced by a new leader, the new leader would enter into a firm where software security is officially important, and this would probably have an impact on his or her daily activities.

In the task of leading, leaders attempt to deal with uncertainty through their different choices. No matter what one decides upon, one can not know the full outcome before starting on that path of action. One has to do what one thinks is right, even though it may turn out in an unexpected way because the future is not a given (Pattison 2000, p.175-176.) Decisions must be made on the basis of the available evidence, which never can be complete anyway. An element of intuitive guesses is always involved (Gaynor 2002, p. 196.)

2.1.3 Varying Situations

Using the metaphor of communication networks, some positions are more central, or peripheral, or in-between than others. People holding central positions will more likely emerge as leaders

than those who occupy more peripheral positions (Lippa 1994, p. 619.) Besides the structural position of leaders, another important aspect is the uncertainty and complexity of the situation. Where tasks and technology are complex and uncertain, the role of leadership and how it evolves over time are very important (Barkstedt and Borgman 2000, p. 44-45.)

Organizations find themselves in a process, and as they grow, they often tend to become more inert (ibid., p. 46.) In times of decline, organizations might "behave" in a way that is not opposite to growth behavior. There is a lot of anxiety involved in times of decline, often with a lesser rational basis for decisions (ibid.) In a crisis period, more decision-making is expected of the boss (ibid., p. 50.) What also contributes to the situation of an organization is its strategy. One view holds that the leaders' strategy shapes the structure of the company, whilst another is that both influence each other equally (ibid.)

Another situational variable is the environment. This places organizations into a context. Aspects of the environment can be external as regards competition and markets, and internal with respect to the organizational culture and people (ibid., p. 47.) Barkstedt and Borgman also describe other factors which influence leadership. One is the level of leadership - the higher up a boss is, the more her or his behavior is different from that of other bosses operating lower down in the hierarchy (ibid., p. 48.) Another factor is the function of the unit which influences leadership. If the unit becomes dependent on other units, the need for external coordination is heightened, which may lead to the boss having less time for interacting with his or her employees (ibid., p. 49.)

Leadership faces differing situations in various periods of the organization's life. First comes the vision, strategy, and financing stage. Then comes a growth period, where trust needs to be maintained and the right employees found. This is an ongoing process in all phases of organizational development, but it is most clearly emphasized in the growth period. Resources must be divided and the organization is to find a suitable structure. When the products have become complete, the maturity stage sets on. Efficiency is important here. Difficulties will arise sooner or later, where a higher level of decision-making is needed and trust needs to be regained. New strategies should be developed and communicated (ibid., p. 50.) Thus leadership also varies across time for the same organization.

2.1.4 Approaches to Leadership

There are many kinds of leaders, situations, followers, and interactions. The leader in a given context has certain traits, which can vary with different situations. Leaders have differing amounts of experience and skill. The groups they lead may harbor varying feelings toward them, which also can vary across team members in a single group. Furthermore, there are many different kinds of groups - for example, a sports team, a jury, senior leadership in a company, or a division in the military. In addition, the level of stress varies with the work involved and across groups (Lippa 1994, p. 614.) The level of stress within any group can vary too, across time, for example, as the leaders and followers slowly get to know each other.

Approaches to leadership have varied over time. Barkstedt and Borgman, who were students at the time of writing their text, describe four periods of leadership during the twentieth century (2000, p. 41, 32-42, and 66-67.) The first one is technocratic leadership, which was power-oriented and authoritarian. Technocratic leadership emerged in the context of the industrial revolution, where human workers were seen as machines to cooperate with other machines in the most efficient manner. Employees were seen to be industrious, and to be exploited for their labor ability. Technocratic leadership dominated in the first half of the twentieth century based on a mechanistic view of humans and organizations. The role of leadership was to control, organize, and plan. With such a start to leadership in that century, it is easy to see how a rational view of leadership could dominate for so long. People still think of leaders as being responsible for organizing and planning (ibid., p. 32.)

Then came the human relations movement, which focused on motivation and making work more pleasurable. This movement came as a backlash to the technocratic style of leadership; it developed during the 1930s and 1940s, where the impression of the positive aspects of the industrial revolution were waning and one came to see the value of human beings. Human motivation came in the foreground. Leadership was to be democratic and group-oriented (ibid, p. 32.)

Then Barkstedt and Borgman mention an administrative perspective on leadership, where the focus lies in precisely the effective administration of employees. Barkstedt and Borgman write very little about administrative leadership. Administration has to do with “the executive branch of a government” or “the group of people who manage or direct an institution, especially a school or college” (Lexico LLC 2003.) The topic of administrative leadership is very frequently related to schools, colleges, and public institutions, as a search for these keywords at Google (2003) suggests.

Administrative leadership is followed by the fourth tendency of «outstanding leadership», where leadership is said to influence culture, identity and ideology. Barkstedt and Borgman divide outstanding leadership into charismatic, visionary, and transformative. Charismatic leadership occurs when there is a crisis, and the leader makes attempts to save the company from it, with employees identifying strongly with the leader. Visionary leadership starts with a vision, communicates it, and this potentially leads to empowerment. Transforming leadership involves charisma plus intellectual stimulation of the employees, and the ability to consider their individual viewpoints and potential.

Leadership also varies in terms of how the organization is structured. The three forms of organization mentioned by Sergiovanni (1996, p. 9-14) are pyramid, railroad and high performance. The pyramid form of an organization has a leader at the top and the simplest tasks are at the bottom, with levels of management in the middle. When the company grows, new levels are added in the middle, expanding the height of the pyramid, and more employees are gathered at the bottom, expanding its base. The pyramid organization is suitable where tasks are to be performed in a standard way. If the pyramid form is applied to more dynamic topics, it is unsuitable, leading to excessive bureaucracy. The pyramid form is no slave-driver unit, as employees are to be treated so that they like their job.

Another form of organization, the railroad form, explores particular work tasks to be done, answers questions about how the equipment is to be used, and then trains its workers to do the tasks like a railway wagon following a set of tracks. This organization form is best applied when the tasks are standard, with deviations being uncommon. Also here, leaders are not seen as slave-drivers, but seeking to motivate their employees. The third form of organization is the high performance one, basing itself on coworker empowerment. What counts is what is produced or done, not so much how it is done. Employees decide how they do the work within some broader organizational parameters.

Within both the pyramid and railroad views, planning and execution are separated. The boss does the planning and the lower employees conduct the execution. Within the high performance perspective, the people who execute also plan how to do that. The leader plans what to do, and the followers plan how to do it and execute that. Thus planning is split: based on content and on form or procedure (Sergiovanni 1996, p. 9-14.) The high performance view seems to fit into what Alvesson (2002) describes as adaptive cultures, because in both, the environment is unstable and there is an emphasis on the empowerment of the employees. Outstanding leadership is the current leadership approach presented by Barkstedt and Borgman, and the high performance view presented by Sergiovanni. The combination of empowerment, outstanding and high performance leadership produces the blend within current trends of leadership.

The railroad and pyramid ways of organizing differ considerably from the high performance form which was significantly influenced by the human relations movement. Empowering employees would surely contribute to motivating them. Empowerment became a buzzword of the nineties. The high performance view came with Peters and Waterman's 1982 book, *"In Search of Excellence"* (Sergiovanni 1996, p. 12,) a bestseller. That book was on the top-ten list of leaders' most appreciated leadership books (Skre 2002.) It appears to be the "Bible of empowerment" because it has been ranked highly for so long (Sergiovanni, *ibid.*)

Thus so far, there is a split of leadership into four approaches - technocratic, human resources, administrative and outstanding - and three forms of organization, the pyramid, railroad and high performance forms. An alternative interpretation of approaches to leadership is provided by Bolman and Deal (1997,) who present four perspectives: structural; human resources; political; and symbolic, in that order. These perspectives draw upon the metaphors of factory, family, jungle, and temple or theater, respectively. The structural perspective asks how a firm can be organized to be most effective. Bolman and Deal answer this question by examining the different types of bureaucracy for different kinds of organizations, plus the option of a more network-like form of organization where appropriate. The greatest virtue of this frame is excellence, and the metaphor used is the factory. The human resources perspective asks how the talents and knowledge of the employees can be most effectively utilized whilst ensuring their job satisfaction. This often entails empowerment. The human resources frame implies that humans are important, and their needs must be taken care of. The greatest virtue of this frame is love, drawing on the metaphor of the family. The political perspective is often neglected in studies of leadership (Bolman and Deal 1997,) which focuses on how to bargain, negotiate and build coalitions in order to maintain or expand one's level of influence. The political frame states that people cooperate and compete in order to get scarce resources. Conflict has a central role here.

The virtue of the political frame is justice, based on the metaphor of the jungle. The symbolic perspective has to do with rewards for good accomplishment, playfulness, and gearing motivation by nourishing the culture of the employees. The symbolic frame centers on meaning - what does something mean, how do people interpret things and events, rather than assigning an objective status to them. Ambiguity is prevalent in this perspective and it emphasizes the virtue of faith.

Barkstedt and Borgman’s technocratic perspective as power-oriented and authoritarian tends to correspond with Bolman and Deal's political perspective, and their administrative view with Bolman and Deal's structural perspective. Approaches to leadership have probably varied widely across countries and organizations as well as across time. Adding to this quandary, Høgli (1973, p. 20,) who was a hospital director in Norway, describes the administrative school to come around 1920. This contrasts with Barkstedt and Borgman’s presentation, which implies that the administrative perspective was the third of their four major perspectives. It being third would place it in a period significantly later than 1920.

While the trends in leadership may not be as clear-cut in terms of their historical moments, what remains is the impression that there have been at least four waves within approaches to leadership in the twentieth century, that broadly correspond to structural, human resources, political, and symbolic, not exclusively in that order. Leaders need to draw upon these four perspectives or lenses and learn to swap them, interpreting situations in different ways to find an optimal perspective that can work in that particular situation (Bolman and Deal 1997.) Thus if all leaders would adopt this technique, leadership would represent a good mix of all four perspectives since leaders are constantly confronted with a whole range of situations.

As a summary, the various perspectives in this subsection are summed up in Table 2.1 below. The first column shows Bolman and Deal’s metaphors; the second shows their frames; the third shows Barkstedt and Borgman’s emphases of leadership in the previous century; and the fourth shows Sergiovanni’s views. There is approximate correspondence in each row, so that for example the structural frame is similar to the administrative approach and the pyramid view, and so on. The fact that the political frame has no correspondence among Sergiovanni’s leadership approaches reflects the leadership literature’s relative neglect of political matters.

Metaphors (Bolman and Deal 1997)	Frames (Bolman and Deal 1997)	Barkstedt and Borgman (2000)	Sergiovanni (1996)
Factory	Structural frame	Administrative approach	Pyramid view
Family	Human resources frame	Human relations movement	Railroad view
Jungle	Political frame	Technocratic leadership	-
Temple or theater	Symbolic frame	Outstanding leadership	High performance view

Table 2.1
Overview of Approaches to Leadership Ordered by Metaphors and Frames

2.1.5 Determinants of Leadership

Research on leadership initially identified as determinants various personal qualities and over time this has progressed to understanding factors such as behavior, situation, culture of leaders and leadership styles (Andersen 1995.) Research has also focused on understanding people- and task-orientation of leaders. Blake and Mouton as presented in Andersen (1995) have emphasized the view that leaders who score highly on both these dimensions are optimal leaders. However, empirical studies on leadership have produced mainly inconsistent results, some confirming and others disconfirming the claims of Blake and Mouton (Andersen 1995.)

Greater consistency has been found in studies of motivation, especially confirming McClelland's claim that people with a high need for power tend to be effective leaders. The need for power has been contrasted with a need for affiliation or achievement. However, this is not an either-or issue as each person has their unique need profile (Andersen 1995.) Lippa (1994, p. 615) mentions the traits of being energetic and sociable, as well as having a higher need for achievement and affiliation, to be common in leaders. These latter findings are inconsistent with McClelland's research, which concludes that a high need for power correlates with leader effectiveness. If leaders have higher needs for achievement and affiliation, their need for power is probably greater than these and the power needs of their followers.

Personality is another aspect that has been identified by many researchers as being an important determinant of leadership. There is empirical support for leaders tending to be more intelligent than most of their followers (Andersen 1995.) However, they also tend not to be the single smartest person of the group (Lippa 1994, p. 615.) It is unclear which definitions of intelligence were used in these two studies. For purposes of simplicity, intelligence in this thesis will refer to academic intelligence, because it is the most commonly associated aspect of intelligence. Leaders often have a higher education than their followers, which may explain their scoring higher on intelligence (Andersen 1995, p. 51.) However, it is probable that intelligence leads to a higher likelihood for more education in the first place. When there is time for thinking, intelligence provides benefits in decision making, but less so in times of stress. In stressful times, one can not think as clearly, and the process of making decisions is more instinctive and situated. Intelligence, coupled with a situation of low level of stress, can help leaders make better decisions (Lippa 1994, p. 622.)

Another personality factor discussed in leadership research is self-confidence (Andersen 1995, p. 51-52, and Lippa 1994, p. 615.) As a leader, pressure to perform and function is larger than for the followers. Leaders must handle many setbacks and dangers and confiding in oneself to be able to perform is likely to be quite necessary in most leadership situations.

In bureaucratic organizations, leaders tend to be older than the followers. Age can give the benefits of experience and career-climbing as a result of seniority. In public organizations, time is often necessary to climb the ladder of career steps, so that some leaders tend to be older than others (Lippa 1994, p. 615.)

Another important personality consideration is whether leaders are people- or task-oriented, a line of thinking which initially emerged just after World War II. The people orientation focus has also been called socio-emotional behavior as it focuses on employees, interpersonal communication and motivation approaches. A task-oriented leader is more interested in what is to be done, the different jobs and their coordination (Lippa 1994, p. 614.) Barkstedt and Borgman (2000, p. 34-35) also discuss these two dimensions, calling them personnel and production orientation, respectively, which can be combined. Leadership concerns an inter-play between trust and power (Sørhaug 1996,) and this is related to the people/task pair. Socio-emotional leaders can be seen to be closer to the trust side, whilst task-oriented leaders are more towards the power pole. Lippa argues that socio-emotional leadership is best in situations that are moderately favorable, and task-oriented leadership may be more suitable for very positive or very negative situations. The reasoning is that very positive situations entail the presence of a good morale anyway, and very negative situations imply that improving morale is too hard. Improving emotions is only meaningful in moderate situations, a finding which Lippa (1994, p. 620-621) argues is supported by many studies. However, Lippa's view is limited as it assumes leaders are to be either task-oriented or socio-emotional. Blake and Mouton argue that these dimensions should be viewed in combination. One can be high or low in both, high in one and low in the other or vice-versa, or medium in both. Blake and Mouton state that the style of being high in both is best for leaders in all situations, even though the empirical evidence to support this claim is not consistent (Andersen 1995.)

Different personal qualities thus determine effective leadership, although no single quality can be said to characterize all leaders. Also, one can not isolate a collection of personal traits that, when taken together, explain leadership (Andersen 1995, p. 52.) Thus, one may hold that intelligence and other traits correlate with leadership, but these trends represent varying shades of grey.

An important personal quality translated into leadership behavior is to be a good listener. It is good advice to listen carefully to all people one speaks with. Listening can not be done 100% of the time; rather, one should be good at finding out when one must listen very or less carefully (Peck 1993.) Listening is a key ingredient in communication. While this may be obvious because as one speaks, the other listens, implementing it may be easier said than done. Leaders should be willing to accept that their employees have different views, and listen to them. When bosses are fearful of objection, this can lead to trouble. When conflicts are allowed to be visible, they can help to enrich the company and provide innovation. Constantly sweeping conflict under the carpet, and not listening to employees, is probably a safe way to failure (Tramel and Reynolds 1981, p. 41.) Listening means more than being quiet for a moment, but accepting that others have different opinions and be able to absorb and filter them; not just letting the speech to enter from «one ear and go out the other.» When employees are listened to, their self-esteem is enhanced, and enhances the avenue for cooperation. Listening is particularly powerful when it leads to ideas being implemented into decisions. Letting employees state their dreams of how the work environment can be improved, and then acting on these dreams, is good for the company. When employees are taken seriously, their motivation soars (Vassbø 2002, p. 6.)

2.1.6 Role of Leadership in Empowering Employees

The role of leadership in empowering (or not) employees has been an important area of research. While there are different kinds of power, some of these are more acceptable than others for the followers. Reward power has to do with controlling incentives such as a pay-rise. Coercive power controls punishment. Legitimate power is when the power source seems plausible according to the norms existing in a particular culture. Expert power concerns the level of expertise held by the power-source. Referent power is when leaders appear desirable (Lippa 1994, p. 615.) It has been proposed that employees in general find their leaders erotic, which may be part of the explanation for employees working overtime. For example, followers might yearn for compliments from the leader about their work, and the fact that these needs are often not met makes it more likely, not less, that their longing prolongs. Such an anti-pragmatic relation to compliments is sought explained by leaders tending to be experienced as erotic by their followers. Tending to work overtime can be interpreted as a manifestation of the “magnetism” by which followers tend to be attracted to their leader (Sørhaug 1996.) Followers appear to like referent and expert power the most, followed by legitimate and reward power. Naturally, coercive power is disliked the most (Lippa 1994, p. 617.)

Power is intimately interconnected with notions of empowerment. What is empowerment? Lexico LLC (2003) defines it as «1. To invest with power, especially legal power or official authority. 2. To equip or supply with an ability». Invest in definition one is most likely to be meant as endow; to endow with power. Where employees are endowed with more ability, they are also endowed with more ability to choose, as in legal power. Empowerment and power involves a mutual give and take situation. When one side is empowered, the other will naturally lose some power. However, the side offering empowerment is likely to perceive empowerment as a good investment for the future of the company. Empowerment may thus be perceived as a win-win game.

Empowerment represents a relationship between the leader and followers. This relationship is probably something that will become more apparent over time. From earlier having the loudest voice, in today's organizations leaders are described to be the best listeners. If followers are listened to, they can have a larger impact on decisions made by the leader. The bonds between the leader and the followers become stronger. Top-down leadership is "obsolete" according to one author (Barkstedt and Borgman 2000.) While it may be popular and easy to speak of empowerment, using it actually requires specific action (Weinzimer 1998, p. 95.) In addition, the environment should be made to fit the strategy of empowerment. For example, in one company empowerment was adopted as an official strategy. In order to transform it into action, workshops were created where the implications of empowerment were taught to employees (ibid., p. 95-96.) However, often it is found that the strategy of empowerment is more in words than in action.

In organizations where learning and/or innovation is important, it is likely that empowerment is more important than in non-ICT companies. Having to comply with a boss and be loyal probably stifles innovation and the ability to tackle sudden problems. Barkstedt and Borgman (ibid., p. 52)

argue that knowledge companies do not need formal leaders, and leadership should be more of a collective and evolving process.

Empowered employees sometimes may not know what falls under the jurisdiction of managers and what should be decided by them (Weinzimer 1998, p. 96.) This relates to Sergiovanni's (1996, p. 14) description of the high performance theory, which separates the content and form of the planning function. While employees are to decide upon the form, they may be insecure about how. Empowerment is more than just formally handing over some power, but involves active information sharing with the employees. This will allow them to know enough about the areas in which they can act being empowered, with appropriate authority, responsibility and rewards. In addition, guidelines or boundaries about the empowered areas should be provided, so that the employees know exactly what tasks they are empowered to control (Weinzimer 1998, p. 96-97.)

2.2 Implications of the Survey of Leadership Research

Based on the above review, I now discuss some of its practical implications on leadership. Four subsections follow. The first subsection, 2.2.1, discusses the role of leadership in giving the firm a vision and focus. The second subsection looks at leadership with regard to encouraging entrepreneurial behavior and innovation, which is important for the company to generate future success. The third subsection goes into the role of leadership in creating and maintaining a company image, which is important for profiling the company in the general market. The fourth subsection, 2.2.4, discusses the role of leadership in encouraging ethical considerations.

2.2.1 Role of Leadership in Shaping Vision and Focus

Having a vision is important, and so is communicating it to the employees in a way which makes it clear to them and what they are expected to achieve. When a vision is transmitted, it has a motivating effect, making the employees eager to do their job (Weinzimer 1998, p. 23.) The difference between companies with a vision and companies without one is success or the lack of it. Studies support the view that having a vision and using it leads to higher profits (ibid., p. 24.) A good vision adds a feeling that one's work is meaningful and that success is likely (ibid.) Visionary leadership is one of the three aspects of outstanding leadership presented by Barkstedt and Borgman, the other two being charismatic and transformative leadership. The emphasis on the role of vision in leadership is a relatively recent phenomenon.

A focus statement should be:

- simple so that all can understand it;
- memorable so that it is retained;
- powerful;
- revolutionary;
- that it needs an enemy such as competitors;
- that it is the future;
- that it is both internal to the company and external, pointed towards the competition;
- and it is what the country in which the firm operates needs.

Also, a focus is *not*:

- it is not a product;
- it is not an umbrella term;
- it does not appeal to everybody;
- it is not hard to find;
- it is not instantly successful;
- it is not a strategy;
- and it is not forever (Ries 1996, p. 268-290.)

The most interesting aspect of this discussion is that a focus is not a short-term issue. Choosing a focus and pursuing it will almost inevitably yield short-term costs. What matters is the persistency to implement the focus despite minor setbacks. For example, Ford tried a safety approach for one year, and experienced losses, whilst Volvo held on to safety for thirty years. Only Volvo was successful in the long run, seems to be the implicit message (ibid., p. 288.)

The issue of short- versus long-term becomes shaped by the kind of industry one is in. ICT businesses are expected to change their focus quicker than non-ICT businesses, because within the ICT sector, innovations have emerged very rapidly. For non-ICT businesses, Ries recommends holding on to a focus for some decades (ibid., p. 289.) While it may sound like a focus engulfs the entire company, Ries uses it in terms of the part of the company that is directed towards the future. The aspect one focuses on can be a small part of the company, but still represents a sense of concentration. Expanding the number of countries one operates in is better than expanding the focus within the own country (ibid., p. 287.) Mergers should be made so that the market share of one's company expands. Similar companies might want to merge, but a merger of dissimilar ones can drain the focus (ibid., p. 272.) Related to having a high market share, the competitors should be clearly identified as well. Action is taken in relation to competitors, and the enemies should be handled in a conscious way, being prepared for quick action (ibid., p. 278.)

In sum, good leaders develop a focused vision, communicate it well, and live by it for some time.

2.2.2 Role of Leadership in Encouraging Entrepreneurial Behavior and Innovation

What is an entrepreneur? It may be defined as «a person who organizes, operates, and assumes the risk for a business venture» (Lexico LLC 2002.) Entrepreneurial behavior is thus behavior assuming risk and organizing and operating a business venture. In this subsection what is meant with entrepreneurial behavior primarily concerns the risk aspect, daring to take a specific course of action and dealing with the consequences. Leadership that empowers the employee to take risks would encourage entrepreneurial behavior and innovation. However, encouraging risk-taking alone is not enough; there must be good hunches held by the risk-taker that the chance taken is likely to result in future gains.

Entrepreneurship studies have focused far too much on trying to find traits predicting effective entrepreneurship. So many different traits have emerged from these studies that it is unworkable, requiring an entrepreneur that would be "larger than life" (Gartner 1988, p. 57.) Instead, when looking at entrepreneurship, one should look at what entrepreneurs do - their behavior (ibid., p. 47.) As a digression it can be mentioned that a similar argument had been made in 1973 with regards to the field of management research, where the actual concrete behavior of managers was seen to be vague and elusive, not being captured explicitly by research (Mintzberg 1973, p. 2) However, the relationship between traits and behavior is not either-or. An example in question is Microsoft. One could assume that the personality of Gates explains the Microsoft success story. Or one might think that the mistakes made by IBM and Apple, letting Microsoft set the industry standard, can explain Microsoft's success. Both views are too extreme - the truth is somewhere in the middle (Dearlove 2000, p. 31.) Gartner (1988, p. 47) puts it succinctly: "How can we know the dancer from the dance?"

Traits and behavior are best viewed as two sides of the same coin. They reflect a duality, two co-existing entities, rather than a dualism where one rules out the other. Through two kinds of comparisons, a relationship between traits and behavior emerges. External relativity is considering one entity and comparing it to another, e.g. Microsoft against IBM. Internal relativity is considering one entity over time across situations, comparing it "to itself," e.g. Gates in 2000 versus Gates in 2001. When one has a trait, that is given; what makes a difference, is how one behaves. Traits show external relativity, distinguishing entities from each other by assuming some central quality in each. Behavior shows internal relativity across time and situations. From the perspective of an outsider, traits may be the most relevant to explain what the people encounter; from the perspective of, for example, Microsoft employees who already possess certain traits, behavior is the domain where improvements can be sought.

Successful entrepreneurs appear to be quite ethical. Peck (1993) has written about love, and successful entrepreneurs have this love for their business (Bygrave 1997, p. 6 and 24.) Peck describes love as the force which results in discipline, which again helps to solve problems. Also Bygrave describes love as motivating when problems show up, and for successful entrepreneurs, very large problems can arise that are still not given in to. Bygrave also mentions how loving the own product makes a good salesman for that product. In accordance with this love, successful entrepreneurs have very long work days, and they love their business. It is a typical problem that this level of involvement can sap other relationships with friends and family.

In order to conduct entrepreneurial behavior, trust is a necessary precondition – one must trust one's employees, one's customers, and so on. Intimately linked to motivation is the value of trust. Americans place a great value on trust. "In God we trust" is printed on every dollar bill. Having a group soaked in trust lets one into high levels of achievement and self-actualization (Snow 2000, p. 45.) Trust and empowerment are related. One must trust employees in order to dare to empower them. Empowerment and training the employees aims at nurturing trust (Høgli 1973, p. 38.) Trust is both emotional and intellectual; felt and held. Trust can be defined as "a confident belief in or reliance on the character, ability, strength, honesty, etc. of somebody or something: *Put your trust in God, my boys, and keep your powder dry* - Valentine Blacker; *I tried to win the child's trust*" (Allen 2000, p. 1514.) This definition connotes that children are more easily

convinced than grown-ups, which is related to a trait to be considered later, playfulness. It also suggests religion, and one can say that leadership has certain religious aspects (Sørhaug 1996.) The future research section at the end of this thesis will point to the relationship between religion and success at the national level. Even in a non-ICT setting such as a hospital, a religious turn of faith was seen as necessary to make leadership more committed to empowerment (Høgli 1973, p. 40.)

Trust is very basic and central to a person's personality. Does one basically trust or mistrust other people? That is the result of the first year of life according to Erikson (Atkinson et al. 1996, p. 104.) He states eight crises or challenges during a person's life. The issue for the first year is trust versus mistrust. If resolved well and supported by circumstances allowing it, the outcome is trust and optimism. With a different environment, it can also result in a more suspicious attitude toward one's surroundings (ibid.) How can a child learn to trust? When its parents give enough food and love, plus making sure the child is safe, trust is favored. In the second year of life, toddlers might show their own personal will to the parents, but this is only because they trust their parents to still love them (ibid.) Since trust versus mistrust is the first stage, trust is a basic feature, and a foundation for further progress.

Trust is also a self-fulfilling prophecy. Trusting others is a necessary precondition for them showing trustworthy behavior toward one (Brehm 1988.) Sørhaug (1996, p. 23) goes so far as to say that one must have trust in the first place in order to get more of it. This really underpins the view that trust is self-fulfilling. Upon deletion of a file, a computer does not erase all the remainders of the file; it just sets the first byte to zero. Trust is like this first byte. If it is one, it is an existing file; if it is zero, the file can be overwritten because it formally is deleted. If there is no trust or no one-byte, the business or the file is in practice non-existent. If one wants to encourage entrepreneurial behavior, one might want to start with creating a high level of motivation and trust.

Do successful entrepreneurs see profits as their top goal? Not always says Bygrave (1997.) If they do good work which is useful to others, the money will come anyway. And when they do get money, they split it at least partly with important employees (ibid.) Successful entrepreneurs are seen to have a vision and follow it through. They also take care of all important details. Such people want to be in control of their own life rather than having to obey an employer (ibid.) Entrepreneurs are different from each other. Some are of high quality, some of lower quality. A new company tends to need a good entrepreneur who can make and follow through decisions quickly. Their love for work shines through into the relationships with customers, employees, and business contacts - they are friendly, and people like the connection to the company – such an association is fun (ibid.) Successful entrepreneurs constantly innovate, which necessitates being able to change and having a relatively flat management hierarchy (ibid.) In addition, successful entrepreneurs tend to avoid luxury, keeping fixed costs low. They also avoid procrastination. The productivity of the employees is kept high, so profits become more likely (ibid.) Also, the companies select a small market segment and focus on that part (ibid.) When good leaders strive to encourage entrepreneurial behavior, they nourish not only the ability of the employees to take «wise» risks but also the employees' love for the work in question in the first place.

Innovation is more than brainstorming, but concerns how ideas are to be carried out into practice, marketed, and sold. The result, if successful, is money, not necessarily more knowledge (CNN 2002b.) "Innovation is not science or technology" (Gaynor 2002, p. 16.) Fevolden (2001, p. 16-17) has developed a model of innovation called the GP3 model. Its basic entity is the firm, surrounded by four factors: Gain, pressure, push and pull. Gain stands for the results of innovation, such as patents, copyrights and money. Pressure stands for the external environment to the firm, with its own mix of cooperation and competition. Push is the pool of knowledge used to innovate based on demands of the market. The market demands are referred to as pull. The government and the firm influence all these four factors.

There exists a model of entrepreneurship with the basic entity of a business plan (Bygrave 1997, p. 11.) It is surrounded by three factors: The entrepreneur, which might well resemble the push part of Fevolden's model; opportunity, which comes close to Fevolden's pull; and resources, related to gain. Bygrave's model has uncertainty surrounding the mentioned three factors. Entrepreneurship is risky. The factor of competition is however lacking in this model. Competition is not an issue for entrepreneurs, except that in some businesses, entrepreneurs are located close to each other (Bygrave 1997.)

In sum, allowing risks to be taken and encouraging the employees' love and passion for their work will increase the probability of an entrepreneurial spirit at the workplace.

2.2.3 Role of Leadership in Developing and Promoting Company Image

Actively promoting one's company in terms of public relations (PR) is important. Without PR handling, the company lets others decide what its reputation is to be. Companies without public relations risk having their image be the result of other peoples' speculations (Krogstad and Ertzgaard 1992, p. 69-70.) Good leaders think of PR and use their opportunities for promoting a good image.

Iacocca is a famous leader who was good at handling public relations. He took over Chrysler when the company was in a crisis, and made a grand turnaround by getting loan guarantees from the government and making changes to the corporation. Iacocca (1988, p. 108-112) argues that one should take care to recruit quality people who can contribute to the progress of the company. One should also be clear and concise about what one wants. The «lowest-ranking» employees who are doing the actual job should be respected, and allowed to make certain decisions themselves. It is also important to have some employees who are not afraid of expressing their opinions. When it comes to the time perspective, Iacocca advises that one takes both a short- and long-term perspective. He also advises to play by the rules and always be oneself, not some wannabe personality. Historically speaking, great leaders have been quite predictable figures (Davis 1996, p. 124-125.) Being oneself gives a more predictable picture than trying to be someone else at different times. Thus good leaders are clear about the message they are giving, respecting all employees and allowing dissent.

Gaynor also advises to keep the messages simple so that they can be well understood by the consumers. It is better to say something that is not acceptable than not to state an acceptable, important message. Not only the message, but also its implications should be understood (Gaynor 2002, p. 196.) He also strengthens Iacocca's view that one should keep independent voices. Those who are the current experts may know the past best, whilst the leader instead might be interested in the future (Iacocca 1988.) Gates describes three key issues that shape firm success: valuing time highly and being conscious of that; being wary of potential competitors; and implementing a customer focus instead of just saying that customers are important (Gates 1999.)

Valuing time implies that little is wasted. Gates is said to exercise on a bike while reading *The Economist* and to avoid unnecessary small talk in business meetings. Competitors must be watched carefully, so that no one can grow beyond Microsoft. Most of these risks do not become dangers. Focusing on customer wants is practiced, not merely preached. One procedure in use is tape-recording all phone calls from customers, and going through them in order to improve Microsoft products. Thus good leaders use their time well, find out about potential competitive dangers and are very careful in considering customer needs.

The author Robbins (1986, p. 366-376) describes five necessary preconditions for success in all walks of life. First, one must be able to stand frustration, which occurs in all walks of life. Second, one will be rejected sooner or later, and should be able to handle that as well. In addition, no matter how much money one has, one must control one's expenses. A fourth rule is to keep going, and not become complacent. Laurels are good, but excessive resting is not. The last rule is to always be more generous than would be suggested in terms of what one expects to get back. Taking care of economic expenses might conflict with being generous, but these rules should be handled with common sense. Within the economic boundaries one has, generosity can still be exercised without becoming self-sacrificing. The five rules seem to be fairly psychological, based on tolerating pain - frustration, rejection, economic limitations, driving oneself forward, and losing what one gives (Peck 1993.) Good leaders take the greatest pain as well as gain, and have a large capacity to handle pain.

Like in developing IS user participation is important, in leading companies, customer feedback is equally important. Starting with the premise that it is important to retain old customers as well as attract new ones, having a vision for the company is a necessary step. Implementing a vision also involves strategic steps to be taken, including a clear-cut statement to implement which is easy to understand and execute. The strategy should be concise and easy to retain, as well as letting care of customers shine through (Weinzimer 1998, p. 34.)

Preparing for a customer focus means changing the organization with regard to this objective, and letting the employees change as well (ibid., p. 327.) There is also a perceiving step which implies finding out what the customers want in the first place, and what the competition is doing (ibid.) In addition, there is the step of providing, which means enabling delivery of services in a way the customers want (ibid.) All three of these steps – prepare, perceive and provide - are important for leadership and each has to be tackled both effectively, efficiently, and flexibly (ibid., p. 5.) Effectiveness means achieving stated goals, whilst efficiency is the relationship between resources used and outputs (Andersen 1995.) Thus good leaders develop a comprehensive

approach toward taking care of customer needs. Given this importance of customers, how is it implemented? One strategy can be to tape-record customer feedback, as in Microsoft.

Body language is another important carrier of image, in particular smiling. When it comes to human relations, leaders need to be able to smile, a genuine smile that should be felt from within (Tramel and Reynolds 1981, p. 17.) A sincere smile wins emotions and people. There are people who base their career on smiling (Psychologie heute 1994.) Smiling can be related to Robbin's advice. A smiling attitude would make it easier to accept frustration, rejection, economic pressure, and convey the image of not being stressed out and lazy. And a smile is quite giving, too. It appears that good leaders smile sincerely.

Body language is part of one's emotional intelligence. Leadership may be enhanced by high emotional intelligence. There is a certain leadership training program in Norway which exercises this form of intelligence to create better leaders through heightened emotional intelligence (Gimmestad 2002, p. 31.) Well-developed interpersonal skills are an important common theme to great historical leaders; twenty-five of them knew how to understand and interpret human behavior very well (Davis 1996, p. 132-133.) Good leaders are adept at handling human relations.

In dealing with other people, leaders need to be tactful. Tact allows people to not take advice personally, and make the criticism constructive. Problems are to be discussed, not people. Also, it shall be a discussion rather than an argument. Watching one's tone is essential (Tramel and Reynolds 1981, p. 25.)

Leaders should probably not be too defensive; communication and listening means being open to debate, not building up walls of defense. However, leadership needs to be done at least in part defensively, in the sense of taking care of problems before they become too big. Preventing a problem is better than having to solve it. Problems can not be eliminated on a total basis, but anticipating and dealing with them early saves more time later on (Tramel and Reynolds 1981, p. 10.) An aspect of leading defensively is to accept bad news, and deal with the problems implicated in the message (Gaynor 2002, p. 196.) Bad news should be confronted, not delegated to scapegoats. People can take responsibility for their mistakes without being excessively blamed. What is most important is to solve the problem(s) conveyed in the bad news (ibid., p. 197.) Anticipating problems also helps to see weaknesses in own products (ibid.) Gates, for example, states that it is necessary to retire one's products before the competition does. That is a sure way to keep innovating. Innovative leaders see the weaknesses in the products and processes of their company - and improve on them.

2.2.4 Role of Leadership in Encouraging Ethical Considerations

A book on ICT failures describes many unethical behaviors of bosses (based on Glass 1999.) Thus ethics is relevant to leadership. Unethical behavior is here defined as acting in a way or doing something which one at the deepest level knows is wrong, even though one may not know why it is wrong. Leaders should be ethical - at the very least, to avoid failure. The notion that leaders should lead by being a good example for others to follow, has strong support. Barkstedt and Borgman (2000, for example p. 68) argue that it is easy for followers to find out how ethical

the leader is, and it demands that one compares what he or she has said with what he or she does. And if the two split, the employees will soon behave likewise (Tramel and Reynolds 1981, p. 242-243.) Ethics are probably related to good results, not just avoiding failure. At least some successful leaders act on the basis of the golden rule that one should treat others as one would wish to be treated by them. Successful leaders tend to have thought-through moral standards, rather than it being learn-as-you-go. Such leaders tend to do not let immoral opportunities for gain seduce them; their principles generally guide them, even in situations of temptation (ibid.)

Ethical behavior tends to be cooperative instead of destructive. However, can gathering wealth through innovation be called ethical? Would it not be more ethical to give all the profits away, for example, to the Red Cross? It would not need to be so. Being loving does not mean that one sacrifices oneself (Peck 1993, p. 112-113.) Love is the driving force behind problem solving and personal growth. Everyone is egoistic to different degrees, and even the most altruistic people find fulfillment through their work. More modestly one could say that before being able to love others one must love oneself. It would be interesting to see what kind of moral principles leaders have that let them retain wealth.

People expect their leaders to be quite ethical. This is particularly true of public officials. For instance, Clinton lying about the Lewinsky episode was a scandal, although psychologists would agree that all people lie daily. Ideally, all people are held to be equal, and therefore also have the same amount of ethical responsibility. However, it is a common belief that leaders have to behave more ethically than ordinary people - in particular political leaders (Tramel and Reynolds 1981, p. 242.)

What is the relationship of profits and morality? In Japan, good leadership is the goal, not profits per se. If the leadership is good, focusing on the right things, the profits will come anyway, is a widely held view (Oswald 1988, p. 37.) If one looks at current numbers, such as expenses, payrolls, income, and so on, one does not see the forest, only the trees. Current, short-term numbers should not guide a company's strategy (Ries 1996, p. 276; Gaynor 2002, p. 294-295.) Why is this so? Looking at contemporary expenses is a too detailed approach, it is too specific. One should try to abstract deeper contents from the firm one is leading, something more essential than how much the last CD-ROM cost. Ries uses the metaphor of mathematics. At school, it may be well to use lots of numbers, but more advanced mathematics is more conceptual, as is advanced business (Ries 1996, p. 276.)

Developing one's morality from the outset, instead of letting it be defined by the ways of the wind, can help to deal more conceptually with business. Morality is conceptual, which may help to explain the economic advantage presumed from being ethical.

The constant pressure on the future compromises values. Leadership sets ahead, forgetting the past, which leads to a loss of ethics as well. Continuous time lets one contemplate ageless values. Nowadays, time is broken up and projected into the future, leaving little room for universal values (based on Feldman 2002, p. ix.) How can time influence ethics? Time is manifested in humans as memory. Even a vision for the future must be memorized if it is to become effective through some strategy. Because memory creates summaries and conclusions instead of single

letters, memory idealizes experience, creates a forest where there were trees. By going away from the present situation and into the depths of memory, eternal values such as truth become accessible. Thus as one should allow for considering the past, one should allow oneself to slip into more timeless values. Rather than asking "which soda is cheaper?" one could ask "would not water do me better?" (Based on Feldman 2002, p. 19.)

Current companies focus on the now and future, leaving the past obsolete. However, ethics is based on stability in time and memory. This difference nearly makes ethics obsolete in contemporary firms (Feldman 2002, p. 205.) For example, one could mention the phenomenon called «milking», where fast-moving managers can place the blame for decline to others due to a lack of organizational memory. Milking is a phenomenon occurring in some companies. It involves a manager taking steps to ensure short-term success at the cost of longer-term losses. The manager then moves to another position in the company, so that the blame for the longer-term losses fall on somebody else (Alvesson 2002, p. 66.) Ries argues that leaders should narrowly select an area or market segment where they will put their effort (Ries 1996, p. 280.) A focus on the future seems essential to leadership, making it difficult to look back and turn to memory in order to strengthen the ethics.

Both related to ethics and IT, the individual level is at struggle with the collective. The bulk of the ethics literature focuses on individuals, not collectivities, so this relationship should be further investigated (Laudon 1995, p. 37.) The conflict between part and whole regarding humans raises two questions: 1) what responsibility does the individual have? And 2) how can individuals act morally in an «evil» surrounding? Regarding question one, there are no excuses for immoral behavior. One may attempt to blame it on external forces, but this is not to be accepted as valid. Everyone is personally responsible for behaving ethically, no matter what the context (Laudon 1995, p. 37.)

Question two may be directed backwards in time. When a mistake has been made, does this mean the past effects of the mistake have to be corrected? An analogy is patriarchy, which has been dominant for some time, with the exception of some native tribes. Should males have to pay females in order to correct previous gender-based discrimination? What is the responsibility of the individual when the society does something bad? (Laudon 1995, p. 37.) A current analogy is the strong resentment parts of the world have felt against the American people because of the actions of their President Bush. And should the results of past wars be paid back? It seems like an insurmountable task.

Laudon uses Hume's distinction into descriptive and normative to say that facts cannot underpin moral decisions. Ethical action is made on the basis of what one thinks is right or wrong, and facts may simply be used as legitimizing excuses (Laudon 1995, p. 39.) Since the relationship between the individual and the collective is important, so is the language used to describe it. The view is commonly promoted that IT is an independent, external force. Laudon reminds that this view is not in line with research. If it were held, it would also make it easier to excuse immoral behavior, blaming it on computers (Laudon 1995, p. 39.)

It is quite possible to be a well-meaning individual in an organization whose moral action has negative consequences. Social psychology experiments, the Milgram studies, show how normal citizens can be coerced to give innocent "slow learners" electric shocks for "not learning." When an experimenter orders one to give these shocks, and they are delivered at distance, normal people usually climb high on the level of voltage delivered (Lippa 1994, Atkinson et al. 1996.) Ethical mistakes have been made and will be made. This problem should be confronted, not buried. Ethical dilemmas should be discussed openly and support given to those in moral turmoil. Current codes of ethics simply sweep the problem under the carpet. In addition, changing technologies might make the past an unfit blueprint for the future, which makes ethical thinking even more difficult. Ethics is a process, not a static given (Laudon 1995, p. 39.) Thus ethical questions cannot be blamed on technology, and they should be debated more openly. Leaders have a crucial role in creating such conditions and encouraging this form of debate.

2.3 Summary

The leader is in charge of managing the firm. Most often, leaders are those with a high need for power. Leaders have a lot of work to do, some in terms of requirements, some with regard to limitations to what can be done, and some in making choices about the future of the company. Leaders are also highly responsible for decisions taken. No matter how many preparations are made, the effects of decisions made can never be fully known in advance. Also, leaders encounter varying environments, and any firm goes through a series of stages in its development. Some approaches to leadership take the pyramid view, others the railroad view or the high performance view. The last emphasizes empowerment, which is a give and take between leader and employee(s.)

Research about the history of leadership does not show consistent results. However, at least four perspectives can be identified: structural, human resources, political and the symbolic frames, drawing upon the metaphors of factory, family, jungle and temple or theater, respectively. While the majority of the research results on leadership can be viewed to be inconsistent, McClelland's research on the need for power among effective leaders can be seen as an exception. Another approach is the multi-perspective one, emphasizing the consideration of the above four frames or perspectives. Leaders tend to be smart, but personality does not co vary consistently with leadership positions. However, being a good listener is relevant, which helps to develop a better work environment. Two independent dimensions of leadership are the people- and task-orientations. Blake and Mouton have consistently upheld the view that a leader who scores high on both is the most effective. There is not enough support to abandon their view, nor enough to blindly accept it. In organizations which focus on learning, empowerment is more important than in companies doing more standard tasks.

It is quite important for a company to have a vision and communicate it to the employees. Both a vision and a focus are important. A focus is a perspective for the future, for example, to maximize one's market share. Traits can be seen to represent external relativity and behavior stands for internal relativity. They are intimately related. Entrepreneurial behavior needs amongst other things to include a great love and passion for their business. This love lets entrepreneurs innovate. Innovation means implementing ideas and selling the resulting products. Valuing one's time

highly and taking good care of customers are also important factors. However, a customer focus is easier said than done. It should be implemented in the strategy of the company. Sincere smiling, appropriate body language, and using tact are also very important in conveying a positive company image. Tact also implies not making employees take criticism personally. In addition, preventing problems as in leading defensively is better than having to solve them.

Leaders are expected to be more ethical than people in general, and being ethical is probably related to the company's growth as well. Thinking in concepts is more relevant to leadership than thinking in current short-term expenses. These concepts may very well be ethical. Timeless values can be cherished by allowing for memory of the past. There are no excuses for immoral behavior, and ethical choices should be discussed openly.

2.4 How Does Existing Leadership Research Relate to Understanding Leadership in ICT Companies?

The studies which form the basis of the theories and findings of leadership presented so far in this chapter are not in the context of ICT firms, an exception being the examples drawn from Gates in Microsoft. The general basis for the research comes from non-ICT companies and earlier historical, societal and geopolitical trends within which they operated. It may be fallacious to judge from these earlier studies and immediately apply them to ICT firms. Therefore a closer investigation of the characteristics of ICT firms is necessary to understand the applicability of existing thinking in leadership research. Times have changed; we need to look at leadership differently. How does leadership in ICT firms differ from that in non-ICT firms?

There are several reasons why current ICT company environments are different from non-ICT companies. The current age is one of individuality and mobility. Jobs get swapped with a far larger frequency than earlier. Not only do people take a larger number of jobs throughout their life, they move around more, too, and often in global settings. When in earlier times people were to fit into jobs, in current ICT companies often jobs are there to fit people. The mobility of people place new kinds of demands on leadership with regard to how bright and innovative people can be attracted, retained, and motivated. Which impact does mobility have on leadership in ICT firms?

Additionally, the speed of change of both markets and technologies has intensified. There are more innovations and they have a shorter life span than earlier. Work in ICT firms is knowledge intensive, and the nature of knowledge is rapidly changing. If people were to catch up with all the latest research findings in their field, they would not even have time to do their work. The changing nature of knowledge, technologies and markets places key demands on leaders of ICT companies to collect global market intelligence. It also demands that they develop innovative processes by which they can harness this new knowledge into existing organizational processes. How do leaders of ICT firms integrate the implications of new knowledge into their organizations?

Also, ICT firms are in general smaller, with a looser leadership structure. There is less of a hierarchy in ICT firms, as well as more collegial relations and younger employees. Empowerment

has become important, adding to the demands of knowledge-intensiveness. A further new distinguishing factor is the stock markets. When a company goes public, multiple stakeholders are involved, and the leaders have to know more about finances than before. In addition, there is more knowledge about risks, and this knowledge is communicated in an ever more interconnected way. Leaders thus are faced with multi-faceted challenges of managing their profile which makes them attractive to the investors, be knowledgeable about new technologies and markets, and deal with the growing demands of their young and ambitious knowledge workers. How do ICT firms deal with empowerment, finances and seeking market intelligence?

Leadership of ICT companies is caught in the trade-off between uncertainty and complexity. The markets, technology and environment are uncertain and always changing, so more information is needed, which makes the basis for their decisions more complex. Global intelligence is needed, which adds pressures to leadership in ICT companies, and more information costs time for processing. Technological changes are very fast, requiring rapid experimentation and innovation. Within all this, leaders of ICT companies should inspire their employees to do their best. In order to do this, the leaders should themselves be adept in technological matters and need to display passion with regard to technology and markets. A key challenge is how do leaders of ICT firms deal with the speed of new knowledge and motivating their employees?

ICT firms may be particularly positioned towards the future, leaving memory and eternal values even more obsolete than in non-ICT firms. ICT firms are embedded in the larger society, and for that reason it appears plausible that strongly immoral behavior will get serious consequences for the company and society at large. As the ICT sector is often associated with job losses, and leaders also have the potential to access ICT people more cheaply from different parts of the globe (say India or Russia,) their decisions are fraught with ethical implications. How do ethical considerations relate to leadership specifically in current ICT firms?

Other questions which arise from the presentation of theories so far is, are successful leaders of ICT firms typically people- or task-oriented, or both, or even neither? Do they have a higher need for power than their employees? Which of the four frames of leadership - structural, human resources, political, and symbolic - applies the best to leadership in ICT companies, if one can generalize? What is the role of administration in successful ICT companies - does it create a lot of overhead, or is it minimized? Is the high performance view of organizational structuring and leadership the most prevalent in ICT firms, or not? Does leadership in successful ICT firms exercise outstanding leadership at the expense of technocratic, administrative, and human relations leadership? Which leadership patterns emerge in successful ICT firms, in unsuccessful ICT firms, and in successful non-ICT companies? These are some of the questions I analyze in the thesis through both secondary and primary research. In the next chapter, I outline the research methods adopted in this thesis, followed by the empirical discussion and analysis.

3 RESEARCH APPROACH

The main research question in this thesis concerns «what is the role of leadership in ICT companies?» This question will also be used in terms of understanding approaches to manage uncertainty and complexity. The research approach used is primarily theoretical based upon extensive review and analysis of relevant literature studies, and is coupled with limited structured interviews. Four interviews were conducted with leaders of relatively successful ICT companies in Norway during the fall of 2002, in an attempt to understand issues of leadership in ICT environments. An additional interview was made of a person now located in Norway who had earlier worked for a UK division of a company based in India. The interviews helped me to place in context some of the issues that I had identified through my reading of literature, and in this process further clarify leadership concerns in contemporary ICT companies.

With regards to secondary data, both some ICT and non-ICT companies were studied. The primary data from the interviews comes only from ICT companies. To be more specific, Table 3.1 provides an overview of the research design.

	<u>ICT sector</u>	<u>Non-ICT sector</u>
<u>Secondary data</u>	Microsoft , international, based in the US; leader Gates Visma Software , Norway Four companies , Sweden; studied by Barkstedt and Borgman Enator , Sweden ICT failures , various locations; studied by Glass	Chrysler , US; leader Iacocca ServiceMaster , US Imperial Chemical Industries , international, based in the UK; leader Harvey-Jones 114 export companies , Norway; studied by Solberg
<u>Primary data</u>	Five interviews ; four companies in Oslo, Norway, and one UK division of an India-based company	

Table 3.1
Overview of Cases Studied Ordered by Sector and Data Type

The selected sample includes a range of different companies, operating in different countries and providing varying services. Microsoft is an international software corporation which was initially based in the USA, and still has its main research and development activities there. Its famous leader is Bill Gates. Visma Software is an ICT company in Norway. Barkstedt and Borgman (2000) have performed a similar study as this thesis, interviewing leaders in four ICT companies. This was done in Sweden, and the authors were students at the time of writing their text. Enator was a Swedish computer consultancy company which is now international and merged with another company, the new name being TietoEnator (TietoEnator 2002a.) Of the non-ICT companies, Chrysler was a US-based car company at the time of its leader Lee Iacocca. ServiceMaster is another company in the USA, performing various services such as lawn care and plumbing. Imperial Chemical Industries or ICI is international, with its base in the UK. ICI was

led by Harvey-Jones in the 1980s. The Norwegian export companies are summarized in an article which will be discussed. The interviews cover four cases of relatively successful ICT companies in Oslo, Norway and one case of a UK division of a successful India-based ICT firm.

The cases are discussed in chapter four and five which deal with analysis. The entire chapter four is devoted to the Microsoft case. This emphasis reflects the financial success and market dominance of Microsoft. Chapter five then discusses Visma Software, Barkstedt and Borgman's four companies, Enator, the primary data from the five interviews, and the ICT failures. Chapter five also focuses on the non-ICT companies including Chrysler, ServiceMaster, Imperial Chemical Industries, and the export companies.

The research approach adopted can be examined in light of the broader landscape of research approaches in IS studies. In the field of IS, two existing research traditions drawn upon by researchers are the positivist and interpretive approaches (Braa, Sørensen and Dahlbom 2000, p. 252-253.) These will be considered in turn here. Positivist approaches assume that there is an objective truth out there, which is to be sought. The emphasis here is to be able to falsify theories, repeat experiments, and reduce a series of presumed causal variables down to some or one. Goals of the positivist approach are statistical predictions and explanations. Positivists see themselves as neutral outsiders to their object of investigation, being able to objectively grasp and measure what is going on. This is primarily done by manipulating one independent variable and holding other variables except the resulting dependent variable constant. It is possible to have several manipulated variables, but this expands the scope of the experiment. The idea is in any case to isolate a cause. When such a cause has been found, the area of investigation has commonly been reduced to one factor, and an explanation has been reached. The stronger motives of positivists are to be able to predict and change the environment, which is possible when one knows the cause, at least theoretically. To the positivists, it is also valuable to be able to refute earlier claims of causal factors, making it necessary to first repeat the experiment and then to find out that the manipulated variable did not have a comparable effect on the resulting dependent variable (Atkinson et. al, 1996; Braa, Sørensen and Dahlbom 2000, p. 252-253.)

In contrast, the interpretivists say that there is a difference when it comes to human beings; humans are subjective and see the world differently from each other. Interpretivists hold that natural science procedures are not appropriate to investigating matters involving people. In addition to the subject matter being subjective, the researchers themselves are viewed to be subjective as well, at least in the sense of having their own view of a given situation and influencing it by their very presence. The topic of leadership has long roots in history and involves human beings – the leader's employees, stakeholders and customers, to take some. Thus the study of leadership is very much removed from natural science fields. Also, leadership is an issue where decision-making is involved, and so subjectivity is inherent, since certain kinds of action need to be justified and rationalized in a politically acceptable way. Interpretivists strive to gain comprehension and understanding. The individuals or the group of individuals studied have viewpoints and perspectives which the interpretive researcher wants to understand, and construct his or her own story. Interpretive researchers seek to wear the studied person's mental "glasses" (Braa, Sørensen and Dahlbom 2000, p. 252-253.) in trying to construct their story.

The approach adopted in this thesis is interpretive, employing an extensive study and interpretation of the existing literature on leadership in general and a number of companies, including successful and unsuccessful ICT firms and non-ICT firms. Research to date on leadership tends to be positivistic, and issues related to the culture of leadership neglected (Alvesson 2002, p. 95.) There is a primarily European agreement that qualitative methods such as those implicated by interpretivists are an important part of research into IS (Hollocks 2002.) A cultural perspective is important since information technology can be interpreted in more different ways than non-ICT technology, in part because it deals a lot with verbal issues, and ICTs have a large degree of interpretive flexibility, implying different people understanding it in different ways (Robey and Azevedo 1994, p. 29.) A cultural perspective on leadership explores the potential of understanding this flexibility, not closing it down as one would do if the notion of technological determinism is adopted, a view that is necessarily limited. Leaders have the multiple tasks of preserving profitable cultural elements of the company or corporation while still working for improvement where it is possible or likely. Organizations are subject to both stability and change, and a cultural analysis can allow for the richness necessary to interpret the culture with regard to these two at first glance seemingly contradictory outcomes (Robey and Azevedo 1994, p. 32.)

I adopt an interpretive approach in acknowledgement of the assumption that human beings are capable of learning from both mistakes and successes, and this reflexive activity influences the future in largely unpredictable ways (Walsham 2002, p. 368.) The reflexivity of human beings renders an interpretivist approach more suitable than a positivist one, in particular in the domain of leadership. Leadership is a complex process involving culture, situations, politics, rationalizations, personal qualities, motivation and a host of other factors, which cannot be easily grasped by numbers. If it were possible to create a numerical picture of leadership across time and space, the amount of relevant numbers would be overwhelming, not capturing the cultural richness involved (based on Robey and Azevedo 1994, p. 27.) The research approach taken in this thesis is thus interpretive in order to understand and interpret a complicated, complex and reflexive process that changes over time, which can only superficially be grasped by numbers.

Adding to the complexity, the various authors referred to in this thesis have quite different perspectives, which has made their interpretations and analyses be rather apart from each other. This makes it hard to summarize the cases. An example is the case of Microsoft, where Dearlove (2000) argues that the corporation's leader Gates loves the personal computer, whilst Cusumano and Selby (1995) argue that Microsoft primarily yearns for money. Thus various authors may have so different perspectives that the same phenomenon is interpreted in quite different ways, raising the difficulty of summarizing such diverse perspectives. The general approach taken in this thesis is to look at these diverse perspectives and how they reflect different aspects of the same phenomenon. An example of this was the discussion of traits and behavior, showing how they are related to each other and that both lead to a gain in understanding.

Culture should be studied both in terms of formal numbers and cultural indicators. Examples of formal numbers are payrolls, stock and to whom employees report. Some cultural signs are from the workplace itself in terms of how the employees are dressed, how tidy the place is, how much noise there is, and similar things. Another point is that one should find out how the employees

experience their workplace, and what the various indicators mean to them - not just counting them (Martin 2002, p. 35.) Both approaches will be used here, most notably for Microsoft, which is the largest single case studied.

Within the interpretivist context, one can distinguish between the non-positivist and normative stances (Walsham 1995, p. 76.) The non-positivist perspective assumes that facts and values are intertwined when one conducts research, whilst the normative view implies that research is directed towards some desired end; that is, values dominate the facts, rather than the two merely being interwoven. This thesis draws upon the non-positivist perspective, where it is acknowledged that facts and values are blended together.

Another distinction within the general interpretive approach concerns the role of theory - as a guide for the research, as an element within a reiterating process of looking at emerging results and analyzing them, or as an outcome of the research (ibid.) How is theory used in this thesis? It is used in the second meaning, as part of the research process, involved in various phases of the process of writing this thesis. Theory is not solely a guide to the research and not exclusively an outcome of it.

The results of interpretive IS research can be used to make generalizations at different levels. The first one is where new concepts emerge from the research. The second one is where a whole new theory is created on the basis of the research. The third lets the research result in various implications for society or further research. And the fourth is a gain in understanding, called "rich insight" and carrying positive connotations, which accounts for those cases that can not be categorized among the first three (Walsham 1995, p. 79.) The third and fourth categories apply for this thesis, as based on the primary and secondary data analysis, some rich insights about the role of leadership in ICT firms are analyzed, and the larger implications discussed.

When it comes to the interviewing, written notes were used, plus typing them on a computer as soon as possible after having conducting the various interviews. My opinions of the interviews were also elaborated. The names of the research sites are anonymous based on the request of the respondents. The interviews were all conducted during the fall of 2002 in Oslo, the capital of Norway. Oslo has around half a million inhabitants and Norway over four million. Norway is a small country and one has to be careful with the issue of anonymity as it is relatively easy to trace the stories back to the sites. Three of the sites were chosen by way of Internet homepages and telephone conversations, and two of them through the network of this my supervisor. For two of the interviews, financial statements regarding the related firms were also gathered from Internet homepages. Questions were asked to understand leadership issues in relation to trust, motivation and playfulness, aspects identified as being relevant based on the literature review. The interviews are discussed in chapter five. I now present the Microsoft case in chapter four. The other cases are all in chapter five.

4 MICROSOFT: TRUST, MOTIVATION, PLAYFULNESS AND INTELLIGENCE

At Microsoft, key factors for success are having a trusting work environment soaked in motivation all the way from the top, as well as playful key employees and a very intelligent work force. This chapter is divided into three main parts: an introduction to Microsoft, followed by a section illustrating the nature and role of leadership in Microsoft, including the above four factors, and then a summary of the Microsoft case.

4.1 Introduction to Microsoft

Microsoft has been a financially very successful global software corporation. Bill Gates, the world's richest man, is its Chairman and its chief software architect. He is the person most commonly associated with Microsoft, having founded and led the company for years. Microsoft was founded in 1975. It was initially based in New Mexico, USA, and later on moved to the US state of Washington. The company was incorporated in 1981. In the same year, IBM started to sell personal computers installed with Microsoft's operating system MS-DOS 1.0. Microsoft's stock went public in 1986. In 1989, the corporation introduced its collection of programs called Office. Windows 3.0 was released in 1990, Windows 95 in 1995. In the latter year, Gates went public with a Microsoft focus on the Internet. The years 1998 and 2000 yielded Windows 98 and Windows 2000, respectively. Also in 2000, Gates and his closest associate, Steve Ballmer, describe Microsoft's .NET strategy for «Next Generation Internet Services». In 2001, Office XP and Windows XP were released. 2002 saw Gates describing a Microsoft commitment to «Trustworthy Computing» (Microsoft 2002a.)

In the fiscal year ending on June 30, 1991, Microsoft had 8,226 employees, a number that had risen to 17,801 in 1995. In 2001, Microsoft had a head-count of 48,030, and 48,958 employees worldwide in early 2002, of which 33,749 were in the United States, with a concentration in Washington State - 24,693. Based on the US numbers, 73.5% of the employees were male and 26.5% female; 26.9% were in the age between twenty and 29, 50.1% between thirty and 39 and 23.0% above the age of forty. On a worldwide basis, 20,545 of the Microsoft employees were involved in research and development; 23,217 worked with sales and support; and 6,166 dealt with «operations» (Microsoft 2002a.)

In 1991, Microsoft's net revenue was \$1.85 billion and its net income \$463 million. In fiscal 1995, these numbers were \$6.08 billion and \$1.45 billion, respectively, and in 2001 they were \$25.30 billion and \$7.35 billion. Both the net revenue and the net income have had double-digit growth percentage numbers all the way from 1991 to 2000. 2001 saw a decline in net income; while it was \$9.42 billion in 2000, it was only \$7.35 billion in 2001. However, the net revenue rose in that period, albeit with a lower percentage figure than earlier. 2001's decline in net income growth was not totally regained by fiscal 2002. Within the time span of 1991 through 2001, the revenue and profit growth percentage numbers have been largest around 1991 and steadily declining through 2001 (Microsoft 2002b.)

Microsoft has a reputation of being very innovative, which is to put it mildly. The corporation has received a lot of media attention and awards. Gates has in the autumn of 2002 also been given a Swedish honorary doctorate. However, Microsoft has also been involved in a US anti-trust case, and accused of stifling competition. This case started in 1998 and other big companies have also faced such cases, for example AT&T and IBM (Fevolden 2001, p. 76.) As of March 1, 2002, Gates appeared relatively content with a settlement between Microsoft and some of the involved states (CNN 2002a.)

4.2 How the Microsoft Case Illustrates Leadership

This section has eleven subsections. They are presented in a way that relates them to previous material presented in the introduction and theory chapters. The order of presentation follows the order in these earlier chapters. The first subsection relates Microsoft to the risks of uncertainty, as discussed in the introduction. Dealing with uncertainty and risk is a major issue in ICT firms. The second subsection looks at the key topic of motivation at Microsoft, with its result, lots of work. The third subsection goes into another of the four major topics, playfulness. A playful attitude can turn laborious work into fun and enjoyable work, and it is important at Microsoft. The fourth subsection looks at the role of intelligence at Microsoft, which also is large, as all employees there are bright. Then a look at specific, concrete behavior at Microsoft is warranted, in the fifth subsection. The sixth one goes into the importance of trust at Microsoft, which is basic to the corporation's success. Subsection seven discusses the role of ethics at the corporation, and how it has fared in making ethical or unethical choices. As ICT firms place more emphasis on learning than non-ICT firms, subsection eight looks at the role of learning at Microsoft. Subsection nine discusses how Microsoft has kept itself manageable, despite the large number of employees there. Dealing with the complexity of the organization is necessary in large firms. ICT leaders need to deal with a larger range of contextual issues than leaders of non-ICT firms, and subsection ten looks at contextual factors which can contribute to understanding the success at Microsoft. Subsection eleven then looks at the context of Microsoft's recent financial decline.

4.2.1 How Microsoft has dealt with Risk

Risk is an important variable and factor influencing leadership, in particular leadership in ICT firms. Risk-taking ability is a necessary trait for key Microsoft employees. The enthusiasm and brilliance which also were present would not have brought so much success without the willingness of the leaders to take risks (Tsang 2000.) Risk is about feeling vulnerable and doing something about it. Gates has said that his feeling of vulnerability has risen with his amount of success (Dearlove 2000, p. 113,) emphasizing the action of leaders to take care of harm before it happens. Risk does not need to imply danger. One may hold risks to be knowledge of danger and as such valuable for survival. There are dangers everywhere; the more one knows them, the higher one's chances for survival. Knowledge of risks lets one tend to try and make parts of the future predictable (Beck 1997, p. 278.) When one perceives a danger before it comes, one usually takes some precautionary steps, however trivial these might seem in hindsight. These steps are

likely to do something about the potential harm, hopefully before it can happen. Because humans usually take care of it before it happens, danger tends to rule itself out (MacKenzie 2001, p. 301.)

Trust and risk are twin concepts (Brewer 1999.) The more risk, the less trust is likely. However, for trust to be a relevant concept there has to be some degree of risks which is dealt with at least partly by the trust. Otherwise the trust would result in confidence (Bouckaert et al. 2002, p. 9.) Accepting risk is essential to personal growth. Love means value (Peck 1993.) The more people value, the larger are the risks they take. And the more they value, the more they grow. Gates has grown quite a lot, but primarily in one direction - the one where his growth is the easiest, having to do with the technology and marketing of personal computer software. He is good at risk-assessment, thinking in terms of probabilities and consequences. He holds that the greatest risk in a fast-moving business area like computing is not to act (Dearlove 2000, p. 58.) He argues it is better to present a product first than to present a better product as second (ibid., p. 128.) Also Sørhaug (1996, p. 45) supports the view that a great risk of leadership is to do nothing. In his view, leadership is in an interactive field between power and trust, and the power/trust balance in each concrete instance across time is not stable, so action is required very often.

Despite Microsoft not being the first out with its software, it has succeeded in dominating the market. There have been prior competitors to Word, Excel, Internet Explorer, and Windows, to take a few (Eriksen 2002.) The fact that these precursors existed means that Microsoft needed to do less trial-and-error work, and instead focus on finer adjustments. Gates and his company have not reinvented everything, but continued to build on existing solutions. There was uncertainty in Microsoft's future while it was in the making (Tsang 2000.) In Norwegian, there is the expression "do not assume that you have won before you have actually done so." Living with insecurity is necessary to avoid mistakes - the mistakes are internal, in one's consciousness, instead of external, in reality. Gates has worried a lot (Dearlove 2000, p. 113.) He holds that he should retire his products before anybody else does it (ibid., p. 118.) This partly explains why there are so many versions of Microsoft's products coming out in increasingly shorter intervals of time.

Gates has had the courage to reshape Microsoft to fit into the age of the Internet. It took him six months to do this, from the fall of 1995 to the beginning of 1996. At first, they thought that the Internet was just a toy, although there were twenty million people using it back then. The Internet is now a basic premise to work at Microsoft. This change of focus required courage (Weinzimer 1998, p. 319 and 320,) and perhaps a certain level of unwarranted optimism in undertaking a risk. One must believe in what one does, however, not too blindly. Into a project, the leadership has to assess market needs for the product and be willing to change the direction if the market needs are low (Lowe 1998, p. 60.) Gates' leadership of Microsoft demonstrates these qualities effectively, and in sum, Microsoft is an example of the importance of dealing with risk and uncertainty in a constructive manner.

4.2.2 Taking Action: Motivation and "Lots of Work"

I have earlier discussed how successful leaders do a lot of work and display a certain passion for it. The Microsoft culture scores highly in terms of working very much, and being motivated, intelligent, trusting, and playful. Many factors are behind the Microsoft success. These include

leadership, the chosen strategy, the selected people, the culture, and market opportunities. Microsoft is very effective - whether one likes it or not (Cusumano and Selby 1995, p. 400.) The tremendous growth of Microsoft's value and outreach has impacted software users more than any other single factor. A good number two is the Internet, and its implications (Katsoulakos 1999, p. 51.)

There has been a high level of motivation at Microsoft, due to a very strong work ethic with the personal leadership of Gates acting as a good example, coupled with high degrees of trust and profit sharing. Motivation is important to success. It shines through the products one creates, and allows one to deliver the amount of work that is necessary to improve them. A necessary condition for success is employee motivation (Barkstedt and Borgman 2000, p. 39.) *Passion* in what one does is a common factor for all successful people (CNN 2003.) Thus one must be able to do what one likes despite the backdrop of looming dangers. In support of the passion view, it has been proposed that Gates has fallen in love with the personal computer a long time ago (Dearlove 2000.) When applying for a job, it is very advantageous to show that one is motivated for the particular position in question (Karrieresenteret 2002.) A key aspect of success is that the people involved like what they are doing (Pfirter 1995.)

Gates is likely to have been the most motivated person in Microsoft. It has also been proposed that his passion for the personal computer has lasted for a long time (Dearlove 2000, p. 162.) He also agrees that motivation is the most important factor (ibid., p. 45.) How does one motivate employees? Gates and his first companion, Paul Allen, were good examples, working nearly around the clock (Tsang 2000, p. 11.) The goal of making the whole company a success was felt by each employee (ibid., p. xii.) This was enhanced by the employees being able to choose stocks instead of pay rises.

Gates works about 16 hours on most days (Dearlove 2000, p. 6.) However, according to Gates himself, he currently works 10 hours a day and around 10 hours per weekend (Gates 1999.) Still, this does not include the time spent on business meetings. Even when on vacation he keeps on developing himself, by reading books and discussing the latest technology with experts in so-called learning vacations (Dearlove 2000, p. 127 and 130.) Gates only took two weeks off work in the five or six years between 1978 and 1984 (Lowe 1998, p. 37.) The Microsoft culture is permeated with a similar work ethic and trust. The cafeteria at Microsoft headquarters in Redmond, Washington State is open until midnight to allow for people who work late. A certain excellence shines through. Microsoft is not the place for the lazy, and hard work is the norm, not the exception (ibid.)

Behaving persistently is also a topic related to Microsoft's success. Setbacks and not being able to solve the problem *now* does not matter, but to keep going on, is the message (Tsang 2000, p. 107.) Gates seems to follow the motto never give up, still going strong even though he has already earned so much (based on Dearlove 2000, p. 164.) Even though setbacks were encountered, even repeatedly, they have kept on going forward (Lowe 1998, p. 75.)

Dearlove's view of Gates' love for the computer can be brought into perspective. The motivation at Microsoft can be described as centrally directed at making money, not working in itself. This can even be considered as one of the key weaknesses of Microsoft. Extrinsic motivation like

money may be less exhilarating than intrinsic motivation such as programming per se; it may even stifle creativity. Recruitment at Microsoft has focused on hiring brilliant people which are equally smart or smarter than the leaders. However successful this might be, with an overriding concern for money, the corporation may be lacking the ingenuity it needs, which can lead to problems in the long run (Cusumano and Selby., p. 420-421.)

Related to Microsoft's yearning for money, a business should not be done by looking at the numbers. But if Microsoft's money drive has led to the growth of abstract principles rather than short-term numbers, it might work - looking into the longer term instead of counting contemporary results (Ries 1996.) Cusumano and Selby published their book in 1995. It is possible that Gates or others in Microsoft have read it, in particular since the book is based on forty interviews with Microsoft employees. Maybe the strategy is less money-centered now. It is also possible that both Dearlove and Cusumano and Selby are right, each to a certain extent. Loving the PC is necessary to do so much work related to it. When one gets financial success too, that is a very easy thing to like. It could become an end in itself, where the end earlier was the computer. Does this mean that Microsoft sets money higher than ethics? It is an interesting question. The work ethic is very strong, but so is Microsoft's monetary success. Both factors are important, but raise the question of whether ethics should override the search for profits or not.

Money means less to employees' motivation now than earlier, because their basic motives - physiological needs - are satisfied anyway (Barkstedt and Borgman 2000, p. 51.) This line of reasoning bases itself on Maslow's hierarchy of needs. McClelland's picture of motivation is different (Andersen 1995.) It would imply that leaders have a high need for power and efficient employees a high need for achievement. Giving money for free to the latter kind of person might undermine his or her motivation. That is a reason for profit sharing being so important - where profits are linked to results by way of stocks. Besides profit sharing being important to motivation, so are good working conditions. When employees do not like the environment in which they work, turnover grows, which means more expenses for hiring new people and training them (Sommerville 2000, p. 505.) Microsoft has taken care of this, letting each of their programmers sit in an own office (Dearlove 2000.)

The Microsoft case illustrates that leaders should serve as a good example for the employees to follow, and that a passion for the work to be done is essential. This holds whether one defines the work as meeting customer needs or making money. The two go hand in hand. Thus two of the aspects discussed in chapter two, of the leader being a role model and passionate about work, appear to be confirmed by the Microsoft case.

Dearlove (2000, p. 157-158) argues that the single most important factor behind Microsoft's success is Gates' restlessness (ibid.) Restlessness fits into the age of the computer, where everything needs to go faster and faster all the time. The picture of Gates and Microsoft here has been mainly positive. However, it has also been written that Gates was socially unskilled and did not like being with others, instead focusing on computers. Also, he could easily become very angry. One of his most common responses in such situations was "that's the most stupid thing I've ever heard" (Dearlove 2000, p. 7.) Tolerating a boss like that can only be done if one's personal mission is the company's success, as it was with Microsoft employees, or if one is

dependent on the boss, as in a dictatorship, which was not the case. One could also suggest that the comment above is about the issue, not the person saying it. He did not say "you're the most stupid person." However, the word stupid may imply that one takes it personally. Anyway, the mistakes commented on in this way are likely to have been avoided in the future. In sum, the Microsoft case illustrates that good leaders want to work a lot.

4.2.3 Taking Action: Playfulness

Chapter two discussed work also in the context of playfulness; if work is turned into play, it becomes more motivating and was more likely to be successful. Gates is very playful. He knows what the game of life is about, and he plays it well. American culture is about winning and losing, and he sure knows that he wants to win. Gates is unusually playful, in terms of estimating probabilities and consequences. Life is a poker game to him (Tsang 2000, p. 66.) Children grow up playing, and playing has positive effects on other aspects of their life, as they can deal with problems by playing them out. The official importance of play may vary across cultures, but all children benefit from play (Tolfree 1996, p. 54.)

Play differs from work in terms of its mainly emotional content and how the task feels. Work can be done in a playful way, and what is play can be done in a working manner. It is less a question of what is done, rather how it feels while one is doing it (Hyers 1991, p. 131.) Since both work and play can be done in a playful manner, and the playful way has better emotions associated with it, it follows that play is an ideal state (ibid.) Thus playfulness is not only related to intelligence, but also to motivation. Between play and work is education, which can be done in a playful or working way. However, the origins of education point to play. Learning initially was more of a goal than pedantry, and wisdom more than training in itself (ibid.) Education being more playful than working supports the playfulness at Gates' Redmond stronghold. At that site, there is also a large focus on learning; the employees even call it a campus (Dearlove 2000.)

A program for helping children develop by play lets them focus on their strengths rather than their weaknesses (Tolfree 1996, p. 27.) In line with the argument that Gates and Microsoft were and are playful, he has focused on his strengths rather than his weaknesses, which expanded his capacity to play. A playful attitude from the teacher's side enhances the likelihood that one learns at all age levels (Lieberman 1977, p. 100-101.) Gates, being the "teacher" of his employees, helped his employees be playful too; and in the process learn a lot. In ICT companies, learning in general plays a major role. Being playful suggests one masters a lot (based on ibid., p. 98.) Gates really masters a lot - being able to deal with many issues at the same time, a quality which he also has translated into the whole corporation (Dearlove 2000, p. 63.)

It seems clear that Gates was and is playful, but the case has not been made equally well for his employees. There is, however, an indicator that this is the case too. Tsang (2000, p. 240) goes into depth on twelve initial and important Microsoft employees, and only mentions one which was not good at playing the game. Playfulness is motivating, a comment which is supported by Lieberman (1977, p. 108.) who links play to factors such as imagination, creativity, humor, spontaneity and joy. In particular, the elements of humor and joy can feed into motivation. In sum, playfulness was central at Microsoft, and an important determinant of their success.

4.2.4 Determinants of Leadership: Intelligence at Microsoft

In chapter two, intelligence was discussed as one of the determinants of leadership. When leaders are stressed, it is easy for them to hire just anyone instead of doing a good job of finding the best person for a particular job. Nesheim (2000, p. 149) hypothesizes that this kind of recruitment is a major downward pulling factor for start-up businesses. The hiring practice at Microsoft has been the opposite of this, constantly allowing only the brightest people into the company (Ries 1996, p. 273; Dearlove 2000, p. 162; Tsang 2000.) This is one of the ten top success factors for the corporation (Dearlove, *ibid.*) Gates himself is to have said that some of his best decisions have been who to hire (*ibid.*, p. 63.) Everything or nothing: it was seen as better to employ too few people than to include a middle-range person (*ibid.*, p. 68.)

A key Microsoft employee said that recruitment went for equally smart or even smarter people. If one did not find such a person, one must continue searching, thus not giving up. This employee sometimes jeopardized this recruitment strategy and later felt sorry for having done so (Tsang 2000, p. 18-19.) In Norwegian, there is the expression that “a chain is not stronger than its weakest joint.” This might apply to the Microsoft recruitment style: The chain was kept as strong as it was initially. In chapter two it was mentioned that leaders tend to be intelligent but not necessarily the smartest (Lippa 1994.) This is reflected above in the search for followers who are as smart as the leader - or smarter.

Gates was attracted to Harvard by hoping to meet the smartest people, but was disappointed (Dearlove 2000, p. 8.) However, he himself writes that he enjoyed his time at Harvard (Gates 1999.) One can characterize Gates and the first key employees as brilliant, enthusiastic and daring (Tsang 2000, p. xii and 34.) Why do Dearlove and Tsang write so positively about Microsoft? They may do so because they are women and attracted to Bill. Sørhaug (1996) opens up for a perspective on leadership which lets leaders appear erotic. This might even more so be the case between woman and man. The two authors do not seem to have been Microsoft employees, but Gates can still appear as a leader figure to them, the leader of the corporation they write about.

It is easy to be negative toward Microsoft, because such wealth creates envy (Tsang 2000.) Gates is only human. He envies people too - the ones who need only three or four hours of sleep (Gates 1999.) His abilities may be high when it comes to his domain, but there are lots of areas where he would have far less success, which he has not focused on in his work. He has chosen to work with what he is good at (Dearlove 2000.)

It is common practice among highly successful technology leaders to find and hire the smartest people, and then motivate them to perform their utmost. Such CEOs (Chief Executive Officers) yearn for money (Cohan 1997, p. xiv,) a view which supports Cusumano and Selby's view of Microsoft's money focus. The CEOs in question motivate, whilst less successful bosses mainly command their employees to make the stocks rise, which is easier said than done. Successful company leaders combine a humanistic approach with meritocracy, such as letting part of the payroll be stocks (Cohan 1997, p. xiv.) These factors promote trust and motivation, and intelligence is taken care of by first hiring and then motivating them to stay.

How did Gates nourish intelligence in his Redmond environment? There was very little luxury at Microsoft, and their headquarters resembles a college campus (Dearlove 2000, p. 65-66.) Often, people were hired straight after having completed college (ibid., p. 37.) Gates has stated that the willingness to learn and be innovative is stronger in young than in old people (ibid., p. 38.) He has been quite successful at motivating his employees. There has been very little turnover at Microsoft (ibid., p. 10.) They have become rich, but still need something to do (ibid., p. 11.) It appears that Microsoft has been draining lots of talent from elsewhere. Before the 1970s, genius in America was viewed as having an excessively high opinion of oneself, which was not trustworthy. Also, intelligence was considered to be a handicap if it was coupled with low social skills (Sørhaug 1996, p. 81.) However, when Microsoft and Apple entered the scene, intelligence seemed to win higher respect in the United States (Dearlove 2000, p. 21.)

There are many examples of quantitative change leading to a qualitative one. The qualitative change comes when a certain threshold is reached (Eriksen 2001, p. 85; Basgen and Blunden 1999.) One is the number of programmers. If it gets too large, productivity falls, because there is so much need for communicating about what is to be programmed rather than actually doing it. Having more than one programmer initially is important, but adding too many may delay the project deadline (Sommerville 2001, p. 532.) This may be a reason why Microsoft succeeded, too. With many good programmers as one might expect to find there, they could do with a lot less of them. Therefore, the communication threshold mentioned above could be avoided. Programmer productivity can differ by a factor of twenty-five (ibid., p. 502.) Thus one of the most inefficient programmers can use twenty-five days on a project where one of the most efficient programmers would use only one day. Gates learned early on that it is important to keep software teams small (Dearlove 2000, p. 139.) Avoiding a big structure has been central to Microsoft's strategy, and this feeds into keeping programmer teams small. A common limit to team size is thirty-five people (Lowe 1998, p. 70.)

The intelligence factor is the most important of the ten factors Dearlove (2000) describes as explaining the Microsoft success. It is common to ignore this element (ibid., p. 61) because of envy. This is an aspect of external relativity - explaining why Microsoft succeeded more than for example Apple. Looking at internal relativity, Gates was asked what is more important to his success - brains or the amount of work. He answered that the latter is the key factor, without question! He honors the value of work and the work of those who are his followers. His conclusion in this respect is a statement from Thomas Edison that genius only shows up when a huge proportion of work does so too (Gates 1999.) Still, within this context, intelligence does matter, he argues. An interesting question is to what extent high intelligence motivates to work a lot. It is not normal to work sixteen or even ten hours every day. The Microsoft case illustrates that leaders of ICT firms tend to be intelligent. They tend to search for smarter employees, and this also reinforces the view that leaders do not have to be *the* smartest member of the group.

4.2.5 Encouraging Entrepreneurial Behavior: a Look at Microsoft Behavior

In chapter two, the relationship between traits and behavior was described as two sides of the same coin. With regard to traits, intelligence has been discussed. Which behavior was present at

the entrepreneurial culture of Microsoft? A vital aspect of behavior when it comes to successful entrepreneurs like Gates is the long work hours. One behavioral hint from Gates is to make decisions carefully, but then to implement them although one may be still slightly in doubt (Lowe 1998, p. 71.) This relates to his valuing time. The time spent in making the decision should not be wasted. If the decision is changed later on, the time used previously is lost, and one might be less motivated to stick to own decisions later on because one thinks they get changed anyway (ibid.)

In the context of high-tech start-ups, it can be difficult to get enough funding for the project at stake. Most initial business plans do not get funded by the venture capitalists, which make calculated risks in funding certain ideas (Nesheim 2000.) So how did Gates get the initial capital necessary to start growing a company? Initially he acquired time in front of a computer by helping out with debugging, but what about the real cash needed? The famous leader Iacocca pressed really hard in order to get funding from the government in a rescue operation that saved Chrysler (Gordon 1985.) Gates initially used personal funds, and the company, later the corporation, made net profits which have continued to grow until 2000.

In any case, Microsoft's leader had a talent for business and has developed it further. That is one of three key strengths of Gates, the other two being knowledge of technology and creativity (Dearlove 2000, p. 162.) The combination of these talents gives him a very good ability to predict future trends (ibid., p. 163.) Senior information systems executives should have both a business and a technical perspective (Gottschalk 2000, p. 50.) Gates also had creativity. Being a good businessman helped him in implementing behavior necessary to get the finances right. Five success factors for Microsoft are as follows: they knew where to put their effort; they were good at timing; they were good at marketing; they did the right thing when recruiting people; and Microsoft exploited the position it gained as fully as possible (Hvidsten 2002, p. 173-174.) These factors can be brought under the umbrella of a businessman, supporting Gates' talent for business.

Knowing where to put the effort, in which market segments, is supported by Cusumano and Selby (1995, p. 401.) The corporation knew when to pull out from market segments as well, focusing on what promises success (ibid.) This also relates to Ries' (1996) "focus on focus," where he describes that a focus is not forever. And it lends further support to Gates being an efficient businessman. Besides this, what do successful high technology businessmen do? The following list applies: they use money and knowledge from previous successes to boost future successes. They make sure the company learns. They create plans for the best projects, in terms of deadlines and possibilities to stop the projects, instead choosing other ones. They estimate probabilities and consequences in terms of success for each project phase. As a result of this, they can move the resources to the most promising projects, which is done all the time. In addition, projects are monitored by way of portfolio grids (Cohan 1997, p. xv.)

Portfolio grids specify how promising the different market segments are and facilitate the estimation of how much one can gain from exploiting it. If the grids imply that a market is weak or that it is too difficult to exploit, the focus changes (ibid., p. 16.) Are these not the kind of things all high-technology leaders do anyway? It appears not. Often, high-technology but more unsuccessful companies go along with projects that promise little market value but fascinate sponsors and researchers (ibid.) The key seems to be moving resources to the most promising

aspects of a company. This is in line with the profile of Gates given so far, where it has been said that he has continually built on his strength, not on his weaknesses.

Both Microsoft's way of creating software and of changing the organizational structure is flexible and incremental. Specifications of programs and their designs can be altered as one goes along. Parts of the program are developed one by one, seeking to meet customer needs. The company has been able to swiftly change how it is organized, evolving it along with developments on the technology front and how the markets look. There is little political bargaining and also little bureaucracy (Cusumano and Selby 1995, p. 401.)

The waterfall model of software development is frequently used in software development in general. It goes from specification of the requirements for the program to design, and then to programming, and finally, testing. Microsoft does not use a similar approach, as they do programming and testing simultaneously (ibid., p. 406.) There is a deadline each day. If programmers are to deliver code that day, it must be done before the deadline. The program so far is then tested, and if something does not work, the programmer in charge must fix it. Thus it is advantageous to deliver code in small portions, preferably each day, so that one runs a lower risk of one's code being incompatible with the rest. If one causes errors, one must also put together the pieces of the code the next day (ibid., p. 415.) In addition to breaking up a big problem into many small parts, this description reinforces the view that Microsoft is a meritocracy. If programmers make a mistake with consequences, they must repair it. They thus take pride to not make mistakes.

The incremental approach of Microsoft is coupled with flexibility. Details of the specifications can be changed as programming and testing proceed, and one learns more about customer needs. The specification is an input in the waterfall model, but an output in the Microsoft approach. At Microsoft, no separate papers describing the design or documentation are given. The programmers put their documentation into the code. Their design details and documentation are delivered in terms of comments. Comments are lines of code which are ignored by the computer but provide insight to the program for human readers of the code (Cusumano and Selby 1995, p. 406.)

In terms of flexibility, the corporation lets programmers create a list of features and assign them different levels of importance. The most important features are programmed the first, and so on. If the total amount of programming takes too much time, some of the less important features can be left out in order to reach a deadline (ibid., p. 407.) By putting the element of change in small portions instead of a few big ones, flexibility pays off. Other software developers have whole waterfall cycles, where the testing comes very late and the whole product may have to be redone (ibid., p. 406.) The testing at Microsoft is done daily and weekly, for individuals and teams, respectively (ibid., p. 408.) Other companies present different versions of their software at different times. Microsoft, however, introduced yearly versions, by adding the year of completion to the product involved, such as Windows 98. If a version could not be completed according to schedule, this strategy lost meaning. However, it put pressure on the teams to make sure their versions were delivered when expected (ibid., p. 408.)

Microsoft's flexible and incremental way translates into its approach to customer feedback. Such feedback is sought and found during the whole of a product's lifetime. In planning which products to develop, users and potential users are analyzed. This is a sort of customer feedback, at least customer assessment. When prototypes of a program are finished, users give on-the-spot feedback. And when there are pre-release versions available, it is handed over to test sites which have many would-be users to try the programs out and report what they feel should be improved. In addition, each week the corporation sends the appropriate subset of its programmers lists of questions from customers who phoned the product support hotlines. This feedback affects how future programs are formed and the features still being programmed (ibid., p. 408.)

Cohan (1997, p. xv,) the author who summarized behavior of successful high-technology leaders, also discusses the issue of customer feedback. These leaders assess future needs, using customer feedback to improve prototypes, and channeling it into the finished product. It appears that taking care of customer needs is a must if one is to gain large financial success. What do less successful competitors do? Their products, which might very well be innovative but not necessarily leading to optimal rewards, are not exploited fully. Instead, successful leaders take advantage of the full potential. In addition, less successful leaders can not mass-produce their products quick enough if there is a big demand for it, and this frustrates customers (ibid., p. 15.)

Gates takes the hardship of assessing market potential when a product is under development. It opens a window on bad news - the market may be insufficiently interested in what is to come (Lowe 1998, p. 60.) Thinking small is important at Microsoft. If the corporation would think in terms of its actual stock value, it would soon lose that value. This goes for leadership as well as for the teams. Where numerous programmers work together on a project, this group is made to work as if there were few programmers (Cusumano and Selby 1995, p. 409.) One aspect of keeping teams small is modularization - by features, functions, subsystems, and objects. Objects are units in programming. For example, a program might be about tracking a country's population, and there might be objects called "family," "father," "mother," "daughter" and so on. At Microsoft, team members are usually allocated to product features (ibid., p. 412-413.) Also, responsibility is pushed downward in the hierarchy, which makes it possible for large teams to work like small ones (ibid., p. 414.) There is not only specialization into features, but also letting different programmers work on the same task (ibid., p. 416.)

A further trick for making large teams small is allocating buffer time in schedules and projects. The buffer differs according to the type of project. Totally new products get a buffer of fifty percent (ibid., p. 417.) Microsoft uses the same programming language for all its software. This programming language has the short name of C (ibid., p. 416.) It enables programmers to program quickly, but with a certain risk of mistakes. The choice of C is advantageous to Microsoft, which lets its very efficient programmers exploit the speed of using C. The mistakes are taken care of by forcing programmers to repair them when they are discovered. This is noted quickly, due to the daily deadline - either one delivers a little each day or delivers a lot after some days and risks more mistakes. Another advantage of using C is that it is difficult for others to use it in developing applications for Windows. This gives Microsoft programmers more work and economic success. The use of C hindered innovation in the software business, because simpler to use languages such as the object oriented ones did not get the amount of use they deserved.

Object oriented languages provide large libraries of already programmed procedures, which merely must be known to the programmer and then called upon in the program. This saves time, but Microsoft and the market standard stick to C (Angelelli 1994.)

When it comes to the documentation, the comments put into the code, all programmers use a standard, the so-called Hungarian one. It is held that this helps share knowledge about programs quite efficiently (Cusumano and Selby 1995.) Also, if someone finds a better way to do something while the project is going on, the project may be changed according to this (ibid., p. 417.)

The look at Microsoft behavior has revealed some important aspects when it comes to encouraging entrepreneurial behavior in ICT firms: be flexible; gather customer feedback and *implement* it; check on the market and follow the implications; and work in an incremental way which is based on features of the program rather than on phases of the waterfall cycle; and joining the programming with the testing.

4.2.6 Encouraging Entrepreneurial Behavior and Trust in Microsoft

In chapter two, the notion of trust was emphasized in the context of encouraging entrepreneurial behavior. Given that Gates and most of his employees are quite bright, it might help explain the trust part. A competent employee is more trustworthy than a less competent one. Employees at Microsoft were trusted to find out how to do their work (Tsang 2000, p. 101.) There was very little bureaucracy, and consensus was not necessary (ibid., p. 98-99.) If they had given one employee money to invest into a project, and it worked out well, they would double the potential sum the next time. If it had not worked out, they would simply ask why it would work this time (ibid., p. 102.) They may have doubted Microsoft's success before it was given, which is necessary for success, but they did not doubt the potential of the PC (based on Tsang 2000 and Dearlove 2000, p. 162.) Gates himself has said that one has to have someone that one can trust fully (Dearlove 2000, p. 63.)

At Microsoft, there was lots of facial contact between people. This, together with honest feedback, made out for authentic communication. Snow (2000, p. 39) argues that honest communication builds trust. Thus the authentic communication at Microsoft is likely to have increased the level of trust there. In most US companies, information is only given when the employees need it to do their work, but sharing more of it in a more open way could lead to more trust (ibid.) Good contact is important for software teams to work efficiently (Sommerville 2001, p. 500.) There was a great deal of honest communication at Microsoft, allowing for lots of trust. Microsoft was and is organized in a way that kept the company physically small, which makes it easier for the employees to be connected like in a loose network. The corporation also gathered a lot of talent in a small space. Physical closeness and face-to-face interaction are beneficial to innovative environments. However, it is not enough to just gather talent, it must also be organized (Saxenian 2000, p. 57.) Although there is lots of face-to-face interaction at Microsoft, there is also a hierarchy.

The dress style at Microsoft is casual, centering on shorts and T-shirts (Tsang 2000.) This style is also likely to promote trust. The clothes or outfit one wears has an impact on one's behavior, which tends to align with the role indicated by the clothes. This is called the "costume effect" (Lippa 1994.) It is hard to take criticism for one's work, but employees at Microsoft have learned it. A critical and objective attitude was fostered, looking at own products from the eyes of outsiders. Problems had to be discussed, not buried. Tsang (2000, p. 107) said that a specific person needed eighteen months just to get used to being criticized, although the criticism was not personal. This relates to the aspect of not giving up and persistence. Employees and bosses could get lots of honest, trustworthy feedback - daring confrontations not to be taken personally. Rather, the corporation's success was the personal aspect - everybody was passionate about Microsoft's success, at least in the founding years (Tsang 2000.) Due to their Microsoft-success mission, even the personal part of these employees was larger than themselves. They identified with Microsoft. Making the employees identify with the organization they work for is important to developing the organization (Høgli 1973, p. 13.)

Gates has not been greedy, which is important to his success. He has made more people rich than any other person in history (Dearlove 2000, p. 142.) It is motivating to get parts of the profit. This led to increased trust in him and within his company. It also shows how profits and ethics can interact.

On its homepage, the corporation states that it seeks a balance between work and family life and that this is a shared responsibility between the corporation and its employees (Microsoft 2002d.) If this is matched by behavior and followed in practice, it is a part which may help explain the motivation together with the other factors. Many companies use extensive surveillance over their employees, such as video cameras and checking what e-mails one sends. This undermines the employees' motivation and trust (Snow 2000, p. 42.) This is very different from all the trust at Microsoft. In sum, at Microsoft entrepreneurial behavior was reinforced by the environment of trust and reinforced through honest confrontations.

4.2.7 Microsoft and Ethical Considerations

In chapter two, one subsection looked at how leaders can encourage ethical considerations. With regard to Microsoft and ethics, one example can be drawn from the case of China. In China the problem of piracy has been widespread. However, even in this environment, Microsoft has attempted to dominate the market. They thought in terms of long-term results, hoping that the Chinese would "become dependent" on their products, and would in the longer run facilitate profits (Dearlove 2000, p. 100.) This kind of opportunism is questionable. In Norway, it is illegal to encourage criminal acts, and consciously letting Chinese make illegal copies of software can nourish such criminality. A further breach by Microsoft was to smuggle modems and communications equipment into countries which required a hard-to-get permission (Tsang 2000, p. 106.)

However, there is a counterexample to this opportunism. Microsoft has had to comply with US law, which limits encryption software to forty bits, whilst other countries allow for 128-bit software. Foreign competitors can thus build far more robust encryption whilst Microsoft has

been legally constrained to a lesser opportunity in this respect (Lowe 1998, p. 210.) Microsoft claims that it encourages diversity, letting people with various backgrounds to work for them. In addition, the corporation seeks to improve the communities of its employees, according to its homepage (Microsoft 2002c.) Obviously, a corporation's homepage would want to present a positive image, maybe even falsely. However, it is surely at least possible to encourage diversity and at the same time hire only the best people. Not all "geniuses" are white, Anglo-Saxon Protestants.

Organizations which cherish diversity do better ethically, in decision-making, and with regards to financial results (Robey and Azevedo 1994, p. 27.) These authors mention that this advantage *may* come from a greater likelihood of conflict, as it helps to air differences which could be damaging if not considered (Høgli 1973, p. 39.) That conflict can be beneficial in the long run supports the view that Microsoft in fact encourages diversity, which potentially can lead to conflict. Diversity and talent are related, and talent encourages diversity (Florida 2001, p. 29.) Microsoft's range of talent creates the potential of it being a diverse corporation.

A vital aspect of Microsoft ethics is the meritocratic culture, with rewards following accomplishment. Employees do not need to charm particular bosses or hide new ideas due to a fear of exploitation (Tsang 2000, p. 84.) If one did a good job, he or she gets the reward, which is motivating. The tendency for meritocratic payment is also growing in Norway. If the leader has partial control over one's payroll, honest relations between leader and follower are fostered (Taraldsen 2002, p. 31.) Both with regard to the meritocratic culture and the prevalence of honest communication, it appears that the culture at Microsoft was deeply influenced by the importance of honesty. Truth is the basis for honesty, and truth is the deepest underlying value in the West (Hofstede 1997.) Since Microsoft can be considered as a prototypical example of a Western culture, Hofstede's classification sheds light on what may have underlain all the honest confrontations at Microsoft – the value of truth.

Microsoft has been growing economically ever since, with the exception of the last couple of years, so it seems likely that milking was not apparent there. Theoretically, it could have occurred with the recent decline, but the company appears too ethical for that to be plausible. In particular, Gates favors a long-term strategy (Tsang 2000) whilst Alvesson describes the phenomenon of milking in the context of US managers thinking in a short-term way, as opposed to Japan (Alvesson 2002, p. 65.)

In sum, the corporation embodies a fair reward system and encourages diversity. However, three arguments have been made about the corporation's ethical behavior: stifling innovation in the industry in general, for example by sticking to C; encouraging piracy in China, and installing communications equipment in countries which had not authorized the corporation to do so (Fevolden 2001, p. 76; Dearlove 2000, p. 100; Tsang 2000, p. 106.)

4.2.8 Understanding Leadership in ICT Companies: Learning at Microsoft

An important aspect of leadership in ICT companies is learning. ICT companies in general are knowledge-intensive and learning is closely related to the use, administration and creation of ICT products. Learning plays a very key role at Microsoft, as it makes improvements possible, a central concern in Microsoft. Continually changing the internal processes of the corporation for the better makes it harder for it to become complacent. When one is complacent, one is more susceptible to making mistakes, and this can to a certain extent be avoided by improving internal processes. At Microsoft, what is learned is implemented into standards and documentation. Newcomers and the other employees are given free access to this knowledge base (Dearlove 2000, p. 83.) Gates has made Microsoft into an organization that hungers for learning (ibid., p. 162-163.) While Microsoft has profited a lot from the mistakes of other companies, it has made its mistakes too. However, the employees have learned heavily from them, by accepting the loss of face and making a systematic analysis of the mistakes. Accepting mistakes and learning from them has strengthened the sense of having a personal success mission for Microsoft (based on Tsang 2000, p. 34-35.) Learning from mistakes is related to creating a positive attitude which focuses on solving the problem rather than on making the blame. Microsoft has been consciously fostering such an attitude (Dearlove 2000.)

Tsang (2000, p. 34-35) quotes an employee on how mistakes were to be accepted and rectified and total failure was not an option: "Losing a few battles was grudgingly accommodated. Losing a war was *unthinkable*." The concept of war is quite extreme in this context, and for Microsoft, success was analogous to winning a war. Gates has a very competitive attitude and is dependent on winning (Dearlove 2000, p. 162.) In a war, one uses one's power in a very concrete way. If one is to think independently, one needs to have a sense of personal power (Brookfield 1986, p. 283-284.) Gates has said that he pays his employees to think independently, and to take criticism and conflict constructively in their stride.

Leadership is important when it comes to making the organization produce knowledge (Nonaka, Toyama and Nagata 2000, p. 16-17.) Gates, with his playful behavior, has contributed to learning, and with it laid the ground for knowledge creation at Microsoft. Microsoft spends a large amount of its income on research and development. This has been a key success factor for the corporation. Planning future products is done up until five years forward in time (Lowe 1998., p. 41.) In sum, Microsoft has been characterized by a very large extent of learning and thinking.

4.2.9 Understanding Leadership in ICT Companies: Keeping Microsoft Manageable

Another aspect of leadership in ICT firms is how to keep the firm small and manageable. Microsoft has been kept constantly kept small compared to its stock value, and reorganized when

necessary. The problem of bureaucracy is dealt with by simplifying the company structure each time the communication channels are hampered (Dearlove 2000, p. 13.)

Microsoft viewed existing standards already developed as guiding lines for the development of other and related programs. Standards became crystallized into structure (Hvidsten 2002, p. 174) of both the products and the company. As something grows, it can become unmanageable if it is treated in the same way as earlier. This is the issue of scale. A small network-based economy can work very swiftly, with lower administrative overhead, but if it grows, it soon becomes difficult to handle (Sørhaug 1996, p. 121.)

In order to avoid bureaucracy, pushing leadership responsibility downwards empowers the employees if it is done correctly. One important way to empower employees is to train and educate them (Høgli 1973, p. 42-43.) Decisions should not necessarily be made at the lowest possible level, but be where the actual work is performed (ibid., p. 31.) Microsoft seems to follow the high performance view of leadership, and avoiding bureaucracy. The corporation was split up into sub-departments in order to keep it manageable and small (Dearlove 2000, p. 163,) with a maximum size of a section being 200 (ibid., p. 138.) Still, it is reasonable to assume that with increased total size, a certain amount of bureaucracy crystallized. Microsoft has around fifteen leadership levels (ibid., p. 139,) with rules which although are kept clear and manageable (ibid., p. 140.) Gates has always strived to simplify the structure of the corporation (ibid., p. 13.)

He has tried to encourage honest communication, with formalized feedback loops, where employees are encouraged to give constant feedback to their colleagues (ibid., p. 82.) He has preferred the site of Redmond in the state of Washington over Silicon Valley, as he felt that in Silicon Valley secrets were hard to keep (ibid.) This view was well informed. Information sharing beyond company borders is easier in small places with lots of interaction and communication, such as in Silicon Valley (based on Feldman 2000, p. 389.) Tacit or implicit knowledge is best communicated in physically close environments of trust (Maskell and Malmberg 1999, p. 180.) Microsoft has profited from trust and face-to-face contact, which by definition is physically closer than for example, through videoconferencing. In sum, Microsoft has remained small both in an organizational and a physical sense as compared to its financial size.

4.2.10 Understanding Leadership in ICT Companies: Looking at the Context of Microsoft's Success

Leaders of ICT firms face a large range of contextual influences. Some of these might shed light on why Microsoft was so successful. The following contextual issues related to the success story will be treated below:

- * The spread of innovation in society;
- * A focus on users in society at large;
- * Work forces tending to be homogeneous at startup;
- * Flexibility in the age of the computer contributing to passion;
- * American mentality;
- * The rise of capitalism;

- * Down times in the technology industry at Microsoft's start-up time;
- * Gates' social class;
- * Luck.

One contextual factor is the spreading of the importance of innovation in society at large (Freeman and Soete 1997, p. 9.) Microsoft has invested systematically and heavily in research and development (R & D,) and this has led to technological innovation. Microsoft's US base in Redmond has contributed the most to innovation at Microsoft, because by concentrating development at the headquarters, it has made it possible for team members to rely primarily on face-to-face contact (Cusumano and Selby 1995, p. 402 and 416.) At Microsoft, the culture almost definitely has a low level of uncertainty avoidance. Its rate of innovation can be seen from this context. The antitrust case fits into the pressure part of Fevolden's model of innovation, which is related to competition (Fevolden 2001, p. 81.) Microsoft's way of dealing with the competition has amongst other things resulted in the antitrust case. What deserves the most mention for Microsoft is the push part of the model, which is the pool of knowledge, relied upon to build innovative products. Another factor in the model is pull, which has to do with demands in the market. Microsoft's knowledge led to generating a lot of demand from the market, which together has translated into gain in the form of patents, copyrights, revenue and income, of which Microsoft has created a lot.

A focus on users may be a sign of our times, not only a Microsoft phenomenon. Where there is lots of innovation, customers and users must be taken care of, because there are so many product changes. Knowing what they want in the first place is as important as knowing what potential the technology has (Lundvall 1988, p. 350.)

When a company is started, the employees typically share many similarities as leaders collect employees which reflect their personalities (Alvesson 2002, p. 111.) The qualities shown by Gates and Paul Allen, the co-founders of Microsoft, were rather similar, making it easier to lead the company. Trust, motivation, playfulness and intelligence in the founders translated into developing a similar kind of workforce.

Microsoft employees' passion for work was fostered by Gates' playfulness and has also been contributed to by a flexible specialization, the power of information technology and the flexibility of a network organization structure (Sørhaug 1996, p. 18.)

In the USA, competition is not only allowed, it is a virtue (Sørhaug 1996, p. 83-84.) Microsoft is very competitive and very achievement-oriented. Gates openly speaks of crushing his competitors (Dearlove 2000.) The corporation competed on the outside, relative to other companies, but has cooperated very well internally. American culture is about winning and losing, like games which are won or lost. Also, the culture there is entrepreneurial and youthful (The Economist 2002, p. 22) which fits the Microsoft style.

Microsoft's great success was in part possible due to the earlier rise of capitalism with the fall of communism. USA winning the cold war will have contributed to societies where a corporation like Microsoft could thrive, and meet less resistance in expanding internationally. In support of

this, nation-states create the environment in which growth may come. Business strategies interact with the local, regional and national levels of regulation (Gertler 1997, p. 57.) Thus capitalism on the rise might well have provided a framework within which Microsoft could prosper. As mentioned, Microsoft has been involved in a multi-state antitrust case, because it was seen to have stifled competition. A court order could not have a large impact on Microsoft, because such regulation of their software products would be perceived as communistic (Hvidsten 2002, p. 176.)

Another contextual factor can have been that there were down times in the technology industry at the time of Microsoft's creation. Such a trend also lets Hewlett Packard progress, starting from back in 1939. The technology sector has had negative times with certain intervals, but within these time periods, new generations of products can be developed and heighten the trend (Maney 2002, p. 7A.)

Gates was fortunate to be born into a well-resourced family. If he were Black or born into poverty, the chances that he would build Microsoft would have been smaller (Amsden and Clark 1999, p. 11.) Poverty is a larger obstacle than race (ibid., p. 2.) Gates was also very lucky to be where he was when he was. A key meeting with IBM in 1980 set the stage for Microsoft, and if Gates would have been somewhere else, the result might have been different (Dearlove 2000, p. 22.) When asked about the importance of luck for his success, Gates answers that it played a very large role, as he acknowledges the good impact an encouraging family and teachers had and the opportunity of becoming friends with Paul Allen. Without the latter, Microsoft would not have existed. Also important was the timing of Microsoft's start (Gates 1999.) Thus in sum, there are many contextual factors influencing how Microsoft could grow so much in a financial sense, including capitalism and luck.

4.2.11 Understanding Leadership in ICT Companies: Discussion of Microsoft's Recent Financial Decline

Contextual factors have influenced Microsoft's recent financial decline reflected in their decreased income in fiscal 2001, which was partly regained in 2002 (Microsoft 2002b.) This was acknowledged by Gates, at least in principle; he predicted that the corporation would have "up" times as well as "down" times. His predictions given to market analysts have consistently been modest (Dearlove 2000, p. 72-73.) Also in this respect he has demonstrated the ability to see own weaknesses.

Related to a quantitative change reaching a threshold and turning into a change of quality, in Norwegian there is the expression «that was the drop [which made the water in the full glass flow out.]» The phase before this drop is the threshold, and the quality changes from filling the glass to emptying it. Another example is the case of Zoë Jenny, an extremely successful Swiss author who was translated into 26 languages at a very young age - and correspondingly wealthy. The amount of money she earned ruined her earlier friendships with normal («poor») people - she mainly ignores them now. The large quantitative change is all the money she earned, and the qualitative change is the status of her earlier friendships.

In the case of Microsoft, its financial success may have made it less human, as with Zoë. When one owns a lot one has a lot to lose. That may create fear, resulting in less trust. It was mentioned earlier that Gates felt as vulnerable as he was successful (Dearlove 2000, p. 113.) The fear may result in unfair play, which may have sent Microsoft to court for the anti-trust case. The corporation may have trusted itself less, thinking that it had to stop its competitors no matter what.

Three other contextual issues on the Microsoft decline are the rise of genetic industries, sinking technology stocks, and the September 11th terrorism. While computing has been on the rise throughout the 1990s, genetic industries might be the new area of long-term growth (based on Virilio 2000 and Fevolden 2001.) Such a trend would leave Microsoft more isolated. The two areas can be combined, as in software for geneticists, but if the genetics trend is large enough, Microsoft could still suffer from it. Sinking technology stocks, the dotcom bubble and the September 11th terrorism are all yesterday's news, but it also provides a context for the 2001 and 2002 Microsoft decline; when the economy gets dragged down, it is likely that some of its major players will do so too. On the other hand, the Brazilian company Semco has been able to sustain success within a national context of economic troubles (Semler 1994.) Is blaming Microsoft's decline mainly on contextual factors, while explaining its success with internal ones, an excuse in favor of Microsoft? The fear which may have led to the decline is likely to correspond to less motivation and playfulness, together with the trust, so the internal factors may have declined with Microsoft as well in recent times.

The main reason employees ever left the corporation, was a lack of challenge (Dearlove 2000.) There was too much ordering, too little complexity, even at Microsoft. It is possible that the corporation became more inert with increasing age. As discussed earlier, companies go through stages, and Microsoft may have encountered that. In sum, more fear at Microsoft and/or down times for the US has had an impact on Microsoft's recent financial decline.

4.3 Summary of the Microsoft Case

Microsoft has been financially extremely successful. The corporation dealt with risk by considering the risks and taking appropriate action. In particular, the risk of being passive was countered the most. Microsoft employees have been motivated by a leader who worked very hard and showed a lot of passion for the work, plus a meritocratic culture and profit sharing. Trust permeated Microsoft, and its employees are intelligent. The rewards of intelligence were only reaped through large amounts of work. Gates is very playful and fosters a playful culture, translating into passion for the work. Typical Microsoft behavior includes all the work and harvesting of customer feedback, plus maintaining a focus on the future products and technologies which are likely to bring the most financial success.

Learning played a central role at Microsoft, both learning from mistakes and maintaining the drive to innovate, plus focusing on research and development. Microsoft was kept manageable by the employees thinking and acting small, and supported by a broader capitalist agenda. The recent financial decline at Microsoft may be understood in terms of feelings of vulnerability accompanying the success. This may have led to unfair play and less trust, motivation, and

playfulness. One can also see the decline as a consequence of the dot.com bust and harder times for capitalism due to terrorism.

In order to have success, one must work a lot and be motivated for it. It helps to have a lot of intelligence, risk-taking ability, trust, and playfulness. Being at the right place at the right time with these abilities in place can lead to great rewards. Trust, risk-taking ability and conflict solving may be most important in environments where there is a lot of change, such as the computer industry. This can be seen as one out of four relationships between culture and performance, but none of these have been supported much by empirical findings. The interplay of culture and performance is complex and may not easily fit into a model (Alvesson 2002, p. 54.) Still, the notion of adaptive cultures sheds light on Microsoft: the corporation has an adaptive culture characterized by trust and dealing with risk, which is reinforced by the customer interaction and the focus on learning.

To provide a framework for the summary of Microsoft, Iacocca's (1988, p. 108-112) nine suggestions for good leadership will be used to make comparisons to the corporation. Hiring the best people is the first advice, and this is the case in Microsoft. Having a clear list of priorities which can fit into one single page was the second advice. Also at Microsoft it was necessary to be selective, choosing which issues to pursue - otherwise one would be wasting one's time (Tsang 2000, p. 107.) Iacocca also advised to state messages concisely and comprehensibly. Related to this, most contact at Microsoft was face-to-face. It is sometimes easier to transmit news and opinions face to face than in an electronic way (The Economist 2002, p. 50.) Using a television screen hampers the ability to forge good relationships (ibid., p. 51.)

Iacocca also reminded that the lowest-level employees are doing the actual job. This is also like Microsoft, where Gates has made many people rich by sharing profits. The fifth advice was to not use excessive control, instead giving rules of thumb, which relates to all the trust at Microsoft. The next advice was to keep some independent voices. Own ideas were welcomed at the corporation, and conflicts allowed.

The seventh advice was to think both in the short and long term. Contrary to this, Gates seems to favor a long-term strategy (based on Tsang 2000, p. 246,) while the workers may be subject to short-term goals. Microsoft programmers had to deliver either error-free software or no software any given day. Leadership should think in the long term and build focus (Ries 1996, p. 288.) Microsoft successfully put the largest weight on long-term tendencies, even if this has meant sidestepping short-term results. One example is providing the Internet Explorer for free (Hvidsten 2002, p. 174.) Putting this discussion into a context, bosses who are high up in the hierarchy see far longer into the future than medium-level bosses, who concentrate more on interpreting, introducing and implementing current policies and programs (Barkstedt and Borgman 2000, p. 48.)

The eighth advice was to follow the basic rules. Gates and his employees worked a lot. And the last piece of advice from Iacocca was to be oneself. Gates did not try to smoothen out his confrontational style, or at least a lot of it remained unchanged after such an attempt. An example are the outbursts of «that's the most stupid thing I've ever heard.»

The key leadership features to be remembered from the Microsoft chapter are the importance of motivation, trust, playfulness and intelligence. Motivation translates into hard/lots of work; trust enables necessary risk-taking; playfulness feeds into motivation; and intelligence deals with the specifics of the risks encountered.

5 STUDIES OF LEADERSHIP

In this second analysis chapter, successful ICT cases, unsuccessful ICT cases and successful non-ICT cases are discussed, in that order. The below list illustrates the various cases and their order of appearance.

Successful ICT cases:

1. Visma Software in Norway
2. Four Swedish ICT companies
3. Enator in Sweden
4. Five interviews done by me, four of which involved leaders of ICT firms in Norway, and one which involved a manager in a UK division of an ICT firm based in India

Unsuccessful ICT cases:

1. Various firms in the US and Europe

Successful non-ICT cases:

1. Chrysler under the leadership of Iacocca
2. ServiceMaster in the US
3. Imperial Chemical Industries, international, based in the UK, led by Harvey-Jones
4. A summary of 114 Norwegian export companies

5.1 Visma Software: Motivation, Trust, and Intelligence

Visma Software is a Norwegian company which earlier was called PC-Systemer. The picture of leadership at Visma emphasizes factors such as motivation, trust and intelligence. The company has had a ten-year period of growth and profit. Per Boasson was its founder and a pioneer in the Norwegian computer industry (Rakkenes 1996.) Visma Software has created accounting software for Norwegian companies that have revenues between \$2.5 million and \$25 million. In 1993, Visma Software had revenues of \$5 million and a profit of \$1.2 million before tax (Kontor og kommunikasjon 1994.) This is significant given the small population (four million) of Norway, which is far smaller than the US. Visma Software has been described as having a very high share of the market. It is thus a quite successful firm.

Like Gates, Boasson has a mind for business as well as software, worked very hard and liked doing it, had a strong customer focus, and invested significantly in research and development. In fact, he has cooperated directly with Microsoft, basing his software on their operating systems. Also, he has tended to avoid bureaucracy and promoting an environment of trust in the company. In addition, he has strategically bought the services in areas where the company did not have the competence to deliver itself (Hansrud 1994, p. 1-2..) Boasson did not stop working despite the

great success of his company (based on Remman 1996, p. 28.) Visma Software has also had a very low staff turnover (based on Bremtun 1997.)

Boasson's leadership has been quick-footed and flexible and viewed mistakes as learning experiences. An interviewer asked Boasson about what his biggest mistake had been. He replied, "Actually, nothing with a serious consequence. We act swiftly. I don't consider our mistakes as negative, but as experiences. I can't see that we today face averse consequences of decisions we have made earlier." (Kapital DATA 1993, p. 18.) Boasson respects all of his competitors (ibid.)

Boasson was also questioned with regard to Microsoft's dominance in its relationships with the programmers at Visma Software. His answer suggests that Microsoft does have some dominance in this respect but that this dominance is not negative. Visma Software's cooperation with Microsoft let them achieve their objectives and Microsoft was described as being very nice and willing to cooperate (ibid.) Boasson also has a mind for both business and software. Boasson is seen to be a owner and leader knowing what he is doing, being knowledgeable of the applications, the systems and their structuring (ibid.) He also accepts the difficulty of finding good programmers (ibid.,) which suggests that he makes an effort to find the best ones. In sum, Visma Software reflects leadership qualities such as relentless working due to a high level of motivation, a company climate of trust, and seeking intelligent employees.

5.2 Four Swedish ICT Firms: Motivation and Trust

Barkstedt and Borgman (2000) conducted a study into ICT leadership. They interviewed four Swedish IT leaders, who wished to remain anonymous. However, the companies were described to be successful at the time of the study. Several factors of motivation and trust, which were identified in the Microsoft case, reappear here.

One success factor of effective leadership Barkstedt and Borgman identify is to hire the right people (ibid., p. 121.) The collection of employees should be diverse, and should complement each other. The leader, in assigning these people to the various tasks, should have a good insight into human behavior (ibid.) Such an ability has also been emphasized by Davis (1996,) though in the context of politics, not firms. When an ICT company first has got the right employees, it must make a job of keeping them, as they will be sought by other companies as well (Barkstedt and Borgman 2000, p. 122.) It should be mentioned that staff turnover has high implications because of recruiting and training costs. Even a hospital suffers a lot from staff turnover and thus wasted training effort (Høgli 1973, p. 45.)

The leader should be respected and credible, practicing as he or she preaches, and having a positive view of human beings. Other recommendations for ICT leaders are to approve of the employees' work and let their wishes impact on decisions for the workplace (Barkstedt and Borgman, ibid.) The boss needs to consult the employees on their dreams for a better work environment, and implement them (Vassbø 2002.) In addition, pulling the workforce together and focusing it into a direction means formulating a vision and changing it when needed. IT companies face lots of uncertainty and this means that a process view of vision and leadership should be used, where the vision can and should also change over time. Also, the boss must be

able to negotiate and solve conflicts between the employees (Barkstedt and Borgman 2000, p. 122.)

Even though the above shows some aspects that distinguish ICT leadership from non-ICT leadership, for example the emphasis on change, leadership has some common challenges, irrespective of the business area involved (ibid.) Some age-old quotations on what is important in leadership can show this common ground and that leadership is not a new topic (ibid., p. 123): «To create a team-spirit with the principle of equality» (Themistokles in ibid.,) and «To lead other people to good accomplishments through their involvement in decision making, through own responsibility and self-consciousness» (Nelson in ibid.) These two topics have been present at Visma Software, with Boasson's climate of trust. «To act as a good example» (Alexander the Great in ibid.) is another feature at Visma, with the leader working hard and liking it.

There are similarities as well as differences between leadership in ICT and non-ICT firms. Authority in ICT businesses is often informal, based on the leader's business knowledge and whether action is in accordance with what is said would be done. For a leader to get respect from the employees it is necessary that they know enough about the subject matter (Barkstedt and Borgman 2000.) This statement is interesting, as it applies to both Gates and Boasson of Visma Software. The leader does not have to be the most knowledgeable when it comes to the business area, but it is necessary to know enough. In several situations the leader will have to rely on his or her employees' competence, which contributes to a sense of equality between leader and follower in ICT firms. Punishment on its own as a means of force is unproductive (ibid., p. 124.) At Microsoft, while programmers were sometimes punished for not creating workable code, they were also highly rewarded, for example through stock options. Lippa's (1994) notions of leaders being intelligent but not the smartest, and workers not liking coercive power are supported by Barkstedt and Borgman (2000.)

Having a vision and direction is more important than having the right one (ibid.) This relates to Gates' view of the greatest risk being not to act at all. Still, if one communicates a vision, it might have to be changed after some time in a turbulent environment like the ICT one. The employees should know the general direction in which the company is heading (ibid.) Another aspect of leadership being different in the ICT sector is the democracy factor, and the ability of leaders to listen to the suggestions of their employees. If employees see to have influence, they will be more likely to stay. Also important is to create group cohesion, and the ability of the group to move in a direction that is consistent with the company vision (ibid., p. 125.) Because leaders consult with their employees in order to make them stay, and leaders' decisions are influenced by the coworkers, this creates a positive cycle. The employees like having an impact, and better decisions are made if employees have an influence on them (ibid.)

In sum, Barkstedt and Borgman's research shows the value of the employees in ICT firms, where holding on to the employees is more important than in non-ICT companies. Leadership in ICT firms should thus be more democratic. It is also important to motivating the employees by leading with example, and allowing them to have an impact on decisions made by the leader. The factors of motivation and trust seem important here.

5.3 Enator: A Playful, Trusting Environment

Enator was a Swedish computer consultancy company. In 1997, it had an approximate net income of approximately \$32 million, and in 1998, the company witnessed a growth in net income to around \$44 million (TietoEnator 2002b.) In 1999, it merged with Tieto to form the corporation TietoEnator (TietoEnator 2002a.) TietoEnator saw profits rising considerably from 2000 to 2001 (TietoEnator 2002d,) but in the succeeding year the profits were reduced significantly (TietoEnator 2002c.) Enator has had great financial success and little turnover, and it has attracted reasonable media interest.

It was commonly held that the culture at that company was the reason for success (Alvesson 2002, p. 59.) The culture is described as very sociable, with the boss and the employees being really good at handling relationships, both internal ones in the company and in relationships with customers. The company has attempted to keep its personnel and has made several trips, for example, there was an anniversary which was celebrated in Greece, and all the employees were flown over (ibid., p. 59-60.) Thus Enator appears to be playful, similar but not identical to Microsoft in this respect. Where the playfulness at Enator was related to sociability, at Microsoft it centered on Microsoft success. In both cultures there was a lot of trust and playfulness.

Bolman and Deal (1997) would argue that the family metaphor was dominant at Enator. Making the company environment seem like a family was even a conscious strategy. People were considered to be fairly equal in worth. The physical environment also invited a family perspective - with a swimming pool, a television, a kitchen and so on. When it came to work, there were not separate offices but an office landscape, with people situated close to one another (Alvesson 2002, p. 59-60.) While Sommerville (2001) recommends personal offices plus a public meeting area at the expense of office landscapes, in this particular case the office landscape contributed to a central leadership style emphasizing sociability. Using the distinction of people- and task-orientation, Enator can be described to have a clear people focus. It would thus work best in times of a medium amount of stress (Lippa 1994, p. 620-621.) In line with being like a family, the organization is very flat and decentralized (Alvesson 2002, p. 112.) This is similar to Microsoft, where bureaucracy was to a large extent avoided.

At the time of Alvesson's study, there was a large demand for computer professionals. For such a situation the strong group cohesion at Enator would be advantageous, to keep the professionals from leaving. If there were too many computer people, this might be less of a benefit, because it might make decisions like cost-cutting difficult. Where there are too many potential employees, a stronger task orientation would work out better (ibid., p. 62.) Enator recognized only success information and downplayed the role of bad news. Their success allowed for this strategy to live for some years. It is easy for organizations in positive circumstances to take this vantage point (ibid., p. 63.) As for Gates, he has been far more careful, always on the watch for potentially dangerous competitors, which is related to leading defensively. Even though Enator was a sociable company, the leaders were important to transmit the culture and serve as an example to follow, by taking part in all social arrangements. A leader of Enator was supposed to organize parties, tell jokes and stories, and keep up the employee morale (ibid., p. 114.) Thus the human resources perspective with the family metaphor was the dominant one at Enator.

In sum, the Enator case shows how a sociable style of ICT leadership can function well as long as it does not encounter major obstacles. The sociability at Enator can be classified in terms of trust, motivation and playfulness. A family environment is necessarily trusting, and at Enator motivation was also taken care of. The creative acts of celebration indicate a certain amount of playfulness.

5.4 Interviews in Mainly Norwegian ICT Firms: Motivation, Trust and Creativity

This section examines the implications of five interviews held in Oslo, Norway, during the fall of 2002. In each interview, a relatively successful ICT leader is asked the same sixteen questions (see appendix 1.) The section starts with presenting the various companies using pseudonyms, since two of the interviewees wanted to remain anonymous. Norway is a small country and revealing the companies of the interviewees could lead to a larger disclosure. A recurrent theme in the interviews is the importance of trust and motivation, with some support for the role of creativity.

5.4.1 Introduction to the Interviewed Firms

All the firms were in the ICT sector. Company one had five employees in 1995 and sixty in 2002. The profits have been from \$250,000-\$400,000 per year. In 1999, the number was much higher than usual, \$950,000. It was stated by the leader of this company that this kind of growth necessitates using large amounts of time on employee training and competence development. This company has had close cooperation with Microsoft, which also holds for company two. Company two has had an annual revenue growth of 10-12% from 1983 and onwards; later on, this number rose to 15-25%. The profits before tax have been growing at 5-25% annually. There was very hard competition and this particular company took over half the profits in the business. Company three had deficits of over \$13 million in 1997; however, both before and after that, profits were made. In 2002 the net profits were \$13 million, when this company had 1,700 employees and revenues of \$213 million. Company four was listed in 2001 and did well in comparison to European companies of the same kind that year. Company five is based in India; the interviewee worked for the UK division as a human resources manager and is now located in Norway. The net profits of the entire company were \$1.5 million in 2001 and \$8.6 million in 2002.

5.4.2 Recurrent Themes: Motivation, Trust, and Creativity

One of the recurrent themes in the interviews with regard to good leadership is how it differs across situations; “A good leader in one place is not necessarily a good leader at another place.” A lengthy description of periods in an organization’s life cycle was given by one interviewee. The periods mentioned were an idea phase, where social rewards were important, such as compliments for creativity. When ideas are to be implemented, a difficult transition to the maturation phase comes, where suddenly the work has to become more structured. The last phase of maturity lets one hopefully reap profits, rewarded with the consequences of the earlier hard

work. Another interviewee stated that one's style of communicating should be adapted to both the current company size and the nature of the individual employees. One interviewee described how people holding the same job title could be different and require different forms of attention, such as needing directives to a lesser or greater extent. Another leader stated that "If the results come, I give the employee freedom, and if not, I take control." Thus the situation created by the employee might influence the response from the leadership.

The leaders were also asked about their own description of their leadership style. A recurrent theme here is the topic of motivation. "Fun and joy in whatever one is doing is important," one leader said. Another response was "I motivate, and all do what they are supposed to. I don't have a very special style." There were more differences than similarities in the answers about the own leadership style, except for the topic of motivation. Various ways of describing the relationship to the employees were given. One simply stated his or her style to be "sociable and trusting." Another focused on making the employees realize that the leader understands. A third discussed the need for an appropriate extent of empathy.

One of the interviewed leaders was very clear with respect to empowering employees and using a vision: "[In ICT companies, employees should be allowed to make decisions by themselves.] This is 100% relevant to success. It works well as long as they understand the vision. (...) A vision is adopted from the top. The leader should have the same vision as the company. The *company* is to have a vision. This is totally relevant. It must be there. Where does it come from? At best, it comes from the top leader." However, another leader was less enthusiastic with respect to the importance of empowerment and vision: "The leader has to balance employee decision making with leader decision making. Sometimes I am ambivalent in this respect. (...) I don't know how important a mission statement is, but goals influence behavior."

One interviewee provided a bridge between these two perspectives. In terms of empowerment, this person stated that letting employees make decisions themselves is tightly knit together with trust, and that "surveys of employees show that it is very important. It is one of the strongest factors for determining how motivated one is." In terms of vision, this leader said that a vision is important in the long run, not necessarily in a short-term perspective. The other two leaders gave different statements about the importance of empowerment, one emphasized its role whilst the other offered the perspective that "there is the dilemma of having too much of it – projects mustn't become the private matter of the employees." These leaders emphasized the importance of having a vision; one of them stated specifically that "a vision is important for the leader's motivation." Considering the responses together, the importance of both empowerment and communicating a vision is generally strong according to these ICT leaders, and is related to trust and motivation.

When it comes to how the leaders handle the threat of competing companies, two kinds of answers were primarily given. One was that the own company was competitive outwards, and the other that there was no specific focus on the competition. One of the five interviewees gave a response in-between these two sides, rather ambiguously. I asked how the competence and personality of the employees influenced the various leaders. Three of them answered that this influence was large. However, two of these leaders also gave modifying statements: that

employee characteristics do not change the leadership style and “sometimes, one has to disappoint single individuals.” Another theme occurring in three of the interviews is that good leaders are predictable; “a leader should be clear and stand for a goal – being brave.” Two themes which occurred in two interviews were that good leaders live the way they preach and that they have integrity. One leader said that “one should not just think in terms of profits – a series of other factors make profits come. One must be extremely preoccupied of the company and not of oneself.”

One of the questions was directed at finding out the difference between leadership in ICT firms as compared to leadership in non-ICT firms. One of the leaders felt that employees in ICT firms need to be involved more in decision-making than other employees, due to their higher competence, necessitating inclusive leadership. However, inspiration from the top by way of communicating a vision is also important, this leader said. Another leader stated that the two sectors do not differ a lot in Norway, because most people in Norway are quite competent, and the country has few production companies. A third leader answered that the mobility of the ICT sector renders it different from the non-ICT one (even in Norway.) This leader saw his or her employees only once a fortnight, due to them meeting a lot with customers and doing much work from home instead of sitting in the office. Leadership in the ICT sector necessitates ICT-specific competence, one leader said, which distinguishes it from the non-ICT sector. One leader answered in terms of the unpredictability of the market: “The market is like a yo-yo. One has to be dynamic, think of new market segments, and be creative.”

The leaders were asked about the relevance of leaders’ level of motivation for success. This is one of the questions in the interviews where the answers are the most similar. The leader’s level of motivation is closely related to the company success, they said. One of them stated that the employees’ level of motivation is equally important, and another added that the leader’s level of motivation is crucial for success also in the non-ICT domain. There was also close agreement on the relevance of employee motivation; here, the leaders sometimes included the importance of employees developing themselves. One statement is particularly interesting: “A good leader should make others good. Delegation must be combined with advice. Raising the employee’s level of competence is important.”

The leaders also closely agreed on the relevance of trusting the employees and the employees trusting the leader. This was seen as very important, as with motivation. One leader stated that “[the leaders’ trust of the employees] is closely connected to the level of motivation. If there is no trust, customer relations as well as the consultant’s self-image are destroyed. There are always difficulties with new technology. Some tackle it better than others. The factor of trust, and being able to work freely and independently, increases motivation.” This leader also answered with respect to employee trust toward the leaders: “The same relationship enters here, too. Many of my employees came to me due to a lack of trust to the leadership of other companies. The relationship with the earlier leaders were bad, not the ones to the previous companies.” Another leader described the importance of trust more vividly: “If one gives trust, it has fantastic results.” Still, this leader also stated that the level of empowerment given must match the employees’ competence, and that “in a short-term perspective, a lack of trust to the leader doesn’t mean much.”

There was considerable but not complete agreement on the relevance of playfulness for success. In planning the questions for the interviews, the concept of playfulness was not used, because it was assumed that it would necessitate explanation, which could confuse the process of interviewing. Instead, the word creativity was used. With this I had in mind both the tendency to create new ideas, to enjoy one's work, and to be inspired by the work. There was considerable but not complete agreement on the relevance of creativity for success. One leader answered, "Creativity and trust are intimately related. [Leader and employee creativity] is relevant [for success.]" Another leader answered that employee creativity is more important than the creativity of the leader, but this is disconfirmed by two other leaders who stated that leader creativity is more important than employee creativity. "I dislike [employees doing] creative number counting" is an example. The fifth leader answered in terms of "it's relevant but not critical. It's great if you have it" for both leader and employee creativity.

5.4.3 Summary of the Interviews

The interviews reinforce the view that leadership is situated across places, organizational life cycles, company sizes, and employee personalities. Thus there is no one formula to leadership, supporting Bolman and Deal's (1997) approach where various frames of leadership can be used together to provide complementary instead of contradictory approaches to leadership action. Also, communicating a vision and empowering/trusting the employees to pursue it in their own way with some restrictions is important, as well as the integrity of the leader. The interviews lend their largest weight to the factors of motivation and trust, in general both from the side of the leader as well as the employees. The factor of creativity was seen as being important to a certain extent.

5.5 Analysis of ICT Failures: Unethical Behavior and More

Glass (1999) studied ICT firms which have "failed." Looking at failure stories may also help shed light on the ingredients for success. Glass discusses failures to be caused by unethical behavior, too little market intelligence, merging companies with incompatible cultures, and spending lots of money on unnecessary luxury (Glass 1999, p. 34.) This clearly relates to Gates' contrary behavior of avoiding luxury, and also Boasson at Visma Software, but less so with Enator. Thus while it should not be a goal for a company to just chase profits, spending money has to be done carefully. However, it confirms Robbins' (1986) advice that no matter how much money one has, one must live with economic pressure. Glass mentions an example where every employee was bought a very expensive chair. They could not say no to this gift but did not like the chairs particularly much. It was clearly a waste of money.

Glass (1999, p. 36) asks which is worse when one starts a company - to think too small or too big. If one thinks too small, one might fail to build a company or it may disappear without attention. However, the stories where companies thought too large also get a lot of media attention. Glass (ibid.) holds that thinking too large is more common than thinking small. This might be so because the cases where it occurred are exposed in the media, and one does not hear about the other ones. Existing events get noticed, while a certain event not occurring implies a non-event and tends to not get noticed (Atkinson et al. 1996.) Gates has succeeded while thinking

moderately small - regarding company structure, manageability, communication channels, and spending. Wasting money is a common by-product of thinking too big. What is important is the relationship between a company's potential and its spending, not its spending per se (Glass 1999.)

Another recipe for failure is merging two companies when they are too different for this to work out. The cultures could be incompatible. Knowing when to continue competition and when to cooperate by merging is critical here. It requires knowledge of both cultures involved (Glass 1999.) Sometimes takeovers fail because the buying company offers too small an amount to the other company. Failed takeovers predict success when the company goes into large debt, due to the leader becoming more committed (Safieddine and Titman 1997.) A series of unhappy mergers have been made, for example an American company which bought up a Dutch one and gained some advantage, but in the long run the American and European cultural styles were largely incompatible (Glass 1999, p. 36-37.)

Another unhappy merger story was within the US between Novell which was success focused and WordPerfect which was more lifestyle-oriented. Their attempted merger created lots of friction and personality clashes. After the merger, Novell sold WordPerfect, with enormous losses, leading a commentator to argue that the merging strategy had been badly chosen (ibid., p. 72-73.) Another described merger is between AT&T and NCR, where the cultural differences caused great friction. A representative of NCR said "they destroyed our culture" (ibid.) NCR had been considered to have a low potential for success before the merger and relations between the two were unfriendly. AT&T had to confess that the choice had been a bad one, and sold NCR again with great losses.

A more specific reason for failure of companies which tried to sell supercomputers is that the processing speed for small computers increased so rapidly, rendering the more expensive supercomputers redundant (ibid., p. 34.) At first during the computer age, size was seen as good, but then small size suddenly became more valuable. Companies investing in larger computers were thus heading for the wrong direction (ibid., p. 87.) This reinforces the view that checking on one's market and technological choices and monitoring it are necessary.

A further focus for corporate failure is the lack of ethical behavior. Violations in question can be cheating, stealing, lying, misreporting, spying and intensive quarreling (ibid., p. 34.) Media attention to unethical acts can lead to poor public image and a drop in stock valuations. However, some ethical issues are debatable as in the case of Microsoft and their strategies with respect to competition. There are often many shades of grey with regard to ethical issues. Glass mentions an example of a US company having some of its ideas stolen by a spy for a French company. Later on, the French firm sued the US one for having stolen its design - the design which they had in the first place stolen from the US firm (ibid., p. 116.) The ethical questions were contested in court.

A further example is Commodore, where a leader set up a very high salary for himself, at the expense of the company (Glass 1999, p. 156.) And in Atari, a leader claimed a monopoly on decision-making. It is clear that this is not in line with the high performance theory and undermines both trust and empowerment. This particular leader also respected the programmers

too little, so they left for competing companies (ibid., p. 157.) It is reassuring that so many of the failure stories base themselves on low ethics; and emphasizes the importance of ethical behavior. Ethical behavior is a necessary but not sufficient precondition for financial success. Mother Theresa is well-known for her ethical approach to life, but she is not financially rich. She used the money received by her for the Nobel Prize on her missionary work, and has said to have died with no personal material belongings.

It has been proposed that firms leave bugs in the software for securing future profit. It may be a myth that bugs are unavoidable, a myth which the software companies would like the public to believe (Minasi 2000, p. xiii-xv.) Microsoft profited from its bugs because it could later sell services designed to fix them. Bugs also made it possible to justify more frequent new versions of programs, including operating systems. Notably, early versions of Windows NT did not take care of the year 2000 problem. Later versions did, and they had the Internet Explorer installed. So by forcing users to change the operating system, Microsoft could make sure that most of them use their web browser (Hvidsten 2002, p. 174-175.) Not only Microsoft, but other software firms also leave bugs deliberately in their products. The only reason for focusing on Microsoft in this respect is because its products are so much more in use than those of other companies (Minasi 2000, p. xv.)

In the context of failed ICT firms, the hints which Cohan (1997) gave regarding less successful high-technology leaders can be reiterated. They tend to not exploit the full financial potential of their ideas, for example by focusing on interesting projects rather than ones which will pay off to a larger extent. When they do encounter large demand, they often do not have the ability to mass-produce their products quickly enough, thus frustrating customers. And when the need to perform better financially is seen, the employees are frequently merely told to make the stocks rise.

In sum, ethical behavior is a necessary precondition for financial success, and stories of failure often draw upon a background of unethical behavior. However, some ICT failures also arose because of changing needs of the market and new technologies, making it important to assess market needs and the potential of the technology, focusing on the most promising aspects. In addition, when ICT firms merge, it is important that their cultures are compatible; otherwise the merged fusion may fail. Thus investigating the corporate cultures involved in a potential merger is also important.

5.6 Chrysler under Iacocca: Power and Loyalty

I now examine the role of leadership in some non-ICT companies. A well-cited example which I discuss is that of Iacocca's leadership in saving Chrysler. As the Microsoft case, it is divided into an introduction, an illustration of leadership and a summary. Two important aspects of Iacocca's leadership are his power and his demand for and ability to create loyalty.

5.6.1 Introduction to Chrysler and Iacocca

When one needs funds for one's company, and the funds of oneself, friends and family are not enough, the problem of getting it from investment banks or venture capitalists appears. This is a

very tough challenge (Nesheim 2000,) and one which was experienced by Iacocca in the car business. Iacocca took over the leadership for a nearly bankrupt Chrysler. He went into an enormous struggle with the US authorities to get loan guarantees, and the banks were the hardest to persuade. He would not have been able to convince them without his charisma (Gordon 1985, p. 109-119.) When he got the financing right, he was able to steer Chrysler into safety and profits. Time and Newsweek had a cover page photograph of Iacocca in the same week (ibid., p. 51,) describing his charisma which emerged in the context of a crisis and led to a solution to the crisis. Leaders with strong charisma create powerful emotions, like Gandhi, Hitler, Iacocca and Jobs (the founder of Apple) (Alvesson 2002, p. 105.) Charisma is often emphasized in a state of crisis and may disappear when the situation returns to normal (ibid., p. 111.)

Chrysler has experienced tremendous contrasts - very good and bad times, and strong and weak leaders (Gordon 1985, p. 27.) Iacocca's leadership is embedded in a historical tendency of extremes. Iacocca's quest for funding was made difficult by Jimmy Carter's regulations forcing each car produced to cost an additional \$750, because of safety and pollution concerns. Back then, this was a lot of money, and Chrysler was struggling with the finances. The contemporary boss at Chrysler, Riccardo, showed resistance and defiance to the government with respect to the new regulations, but in vain. These attempts made it more difficult for Iacocca to subsequently get loan guarantees from the government (ibid., p. 62.)

1984 was a very good year for Chrysler. The large profits of that year were supposed to pay back the debt Chrysler had made, seven years before the due date. There were several advantages with such a payback strategy. Regan was Reagan's finance minister and had power over Chrysler. Iacocca wanted the firm to become independent of Regan. Also, it would convey a positive image to the public if the debt were paid back quickly. In addition, the interest on the loans would not have to be paid any longer. But Regan demanded that the Department of Finance were to receive the entire stock profit from all the stocks Chrysler had given the loan committee as a security measure in 1980. This was done, but Chrysler bought the stocks back at a low price in an auction. Iacocca simply did not give up (ibid., p. 134-135,) and like Gates, he showed great persistence.

5.6.2 Iacocca's Leadership Style: Power

Gordon describes Iacocca's personality to be harder than Tsang or Dearlove's description of Gates. Iacocca had an enormous amount of will-power. Another aspect of Iacocca is his strong ability to communicate (Gordon 1985, p. 1,) and creating and maintaining effective public relations. Iacocca described two routes to success: a system of quarterly hearings where all sub-leaders presented results and plans, and a very strong faith in communication (Iacocca 1988, p. 93.) Thus where Gates is characterized by playfulness and trust, Iacocca's leadership style is more related to power, structure and communication. This might very well have to do with the two types of business – ICT versus automobile. In ICT companies it may be more important to empower the employees, whilst this need is not as pressing in automobile companies. ICT companies are knowledge-intensive and in order to capitalize on the knowledge of the employees, they must be empowered to make more decisions themselves. In automobile companies, there is a relatively larger proportion of routine jobs and lesser individual knowledge involved.

Iacocca was intense and concentrated, making his personality magnetic and respected (Gordon 1985, p. 40.) Intensity relates to power whilst concentration relates to communication and to be able to listen carefully. This supports both Snow (2000) and Tramel and Reynolds (1981) in their focus on communication and listening, presented in chapter two. Iacocca wanted to be in control and direct people as well (Gordon 1985, p. 158.) He demanded total loyalty from his employees, and received quite a bit of devotion from them. For example, when he visited a Chrysler factory, the workers would shout hurrah (ibid., p. 15, 22 and 52.)

The workers were supposed to be loyal, but he himself could fire many of them, or at least the bosses reporting to him. Iacocca himself acknowledges that he was normally democratic, but became a dictator when hard decisions were to be made (Gordon 1985, p. 159.) Iacocca fired thirty of 33 sub-leaders, generally people who wanted to stick to old ways of doing things (ibid., p. 64.) He brought in a lot of people from Ford with extensive experience (ibid., p. 89,) since he had worked there before he started at Chrysler. He also demanded his managers to report to him once every yearly quarter. This distressed them, but Iacocca held that a good manager must be able to do it (ibid., p. 21.) Iacocca hired people who fitted his needs. Without a new management team at Chrysler, he would not have succeeded in implementing some innovative decisions such as the introduction of the minivan (ibid., p. 159.)

Before his days at Chrysler, he tape-recorded both good and poor sales peoples' interactions with customers, and used them as examples for newly employed people to show both the pros and cons. Once he took over a car shop and went into its neighborhood to monitor the cars which people had. If he saw an old model he would find out who lived there by way of registry lists, because he thought they might want a newer car (ibid., p. 13.) This demonstrated his personal intensity. Iacocca was thorough when it came to surveillance, and monitored not only potential customers but also his employees. This strategy helped to identify some bosses who did not do well in their current position, and assigned them to new positions (ibid., p. 23.) It also helped to find poor sellers and monitor their improvement. He was basically a head-hunter in his own firm (ibid., p. 87,) hiring the best people and fining the weak ones. Iacocca demanded full loyalty, and penetrated each clique in the company with an "Iacocca employee" so that he would get his way (ibid., p. 18.)

Iacocca could be seen to be unethical. When he worked at Ford, he and his loyal buddies were likely to have made it harder for another employee within Ford to perform adequately. In order for Iacocca to get the position this other employee would have taken. The competing employee got fired, presumably due to the pressure from Iacocca and his allies (ibid., p. 27.) Iacocca also got uncomfortable with women in car business leadership positions, like many males who find it hard to accept women as leaders (Tramel and Reynolds 1981, p. 15.) The long-standing tendencies and structures of patriarchy are hard to change.

On the positive side, Iacocca hired a Jew into a high position when he worked at Ford, something that had never happened before (Gordon 1985, p. 88.) Also, at a key time Iacocca reduced his income from an annual \$360,000 to \$1, to show how willing he was to save Chrysler (Alvesson 2002, p. 96.) However, there were more negative points. Even though he once had almost no salary, Iacocca also indulged in luxury, with a specially built plane where the bathroom had gold-

coated water outlets (Oswald 1988, p. 32.) Putting this into context, he then had a higher income than General Motor's president, and later his income was of the size of Henry Ford II (ibid.) A car called the Mustang was initially planned at Ford. When Iacocca went over to Chrysler he used these plans to the gain of Chrysler and did not credit the initial developers at Ford (Gordon 1985, p. 25.) This contributes to a picture of somewhat lower ethical standards than with regard to Microsoft.

Iacocca held that it was useful to use car parts which could be used on several different car models. Building a new car with unique parts is risky, as one did not know how much it will sell (Gordon 1985, p. 126.) This is like Gates, who used existing solutions and polished them for other settings. Also, both of them emphasized research and development. After a very good year in 1984, Iacocca decided to spend over ten billion dollars on development until 1990 (ibid., p. 36.)

Using Fevolden's GP3 model of innovation to illustrate the Chrysler/Iacocca case, Iacocca went to the government to get a lot of gain in the form of loan guarantees. He then removed competitive pressure, by having many from Ford to come over to Chrysler. He created pull or market demands by presenting the minivan and the Mustang. Also, Iacocca increased the push for a new knowledge base by firing reluctant bosses there and taking managers from Ford with him. Fevolden's model describes how non-ICT companies can be innovative too, supported by a high focus on research and development.

Chrysler was not taken over by another company; in contrast, Iacocca went to the firm and created a lot of debt. Attaining debt instead of letting the company be taken over in general predicts success (Safieddine and Titman 1997.) A failed takeover is an unsuccessful attempt to buy another company. A typical reason for such a failed attempt can be that the price offered was too low (ibid., p. 1.) Debt often brings a brighter future than a takeover because it makes leaders committed to improving the company in ways the buyers would have done (ibid.)

5.6.3 Summary of the Iacocca Case

Iacocca appears as a stronger ruler than Gates, using more direct and position power. Iacocca also used more willpower where Gates would have used playfulness and motivation. In addition, Iacocca was adept at communication and public relations. It may be that these two prototypical cases illustrate a key difference between leadership in non-ICT firms and that of ICT firms. The latter necessitates more empowerment and democracy, while the former allows for more overruling of employee decisions. Iacocca also accomplished a great deal of loyalty from his employees. Thus the Iacocca case emphasizes aspects of power and loyalty.

5.7 ServiceMaster: Honoring God and Caring about Employees

ServiceMaster is a company offering services related to homes, such as plumbing, lawn care and cleaning. It also offers more public services like giving care to people over a long time period and

cleanup services after disasters. ServiceMaster has been financially very successful over the two and a half decades before 2000. Its values are listed below, based on Maciariello (2000.)

1. To honor God in all we do.
2. To help people develop.
3. To strive for excellence.
4. To grow profitably.

Thus winning in terms of creating a profitable company does not mean one must chase first and foremost profits themselves (ibid., p. 200,) and money is not the prime motivator of successful entrepreneurs (Bygrave 1997.)

ServiceMaster believes in the dignity and development of the human being and gives its employees education such as English classes or on how to fill out tax papers. ServiceMaster not only has good values, but it also behaves according to them (Maciariello 2000.) When behavior and beliefs fit together, it strengthens the image of the firm. This might be what integrity is all about: solid beliefs carried out into practice. Ethical behavior is strongly linked to power, and when one stops being ethical, the power disappears too. The recent Enron scandal is another example, where there was large-scale fraud, which brought defeat to those involved and also to the company.

Personnel selection at ServiceMaster was done carefully to match the company values with the characteristics of the most successful employees, and to allow for diversity (ibid., p. 206.) ServiceMaster incorporates not only the high performance view but also the railroad perspective in analyzing how best to perform the usual tasks and trains its employees in them. However, it also adapts, for example, the equipment given to the particular worker, as in giving a short employee a short mop. Because the tools are easy to use, employees feel better and experience more dignity (Maciariello 2000, p. 211.) As a bridge between the railroad view and the high performance perspective, ServiceMaster attempts to improve its ways of doing the daily tasks, as similar to the cases of Microsoft and Chrysler.

As probably was the case with Microsoft, ServiceMaster has been good at integrating the family and business life of their employees, setting a standard for other American firms (Maciariello 2000, p. 210.) At ServiceMaster, managers were supposed to let their care for their employees shine through. Although there is a clear compassionate component, there is also surveillance. Inspections were done on a regular basis and the exact dates were not revealed beforehand (ibid., p. 207.) Iacocca also used surveillance, arguably moderately of once a quarter. However, Iacocca was quite persistent at more short-term surveillance as well, through the example of “Iacocca persons” who entered into cliques.

ServiceMaster has experienced very little turnover and absenteeism compared to other companies in the same business, maybe due to the care the employees experienced in the firm (ibid., p. 208.)

In sum, the case of ServiceMaster mainly illustrates that values higher than money can be accompanied by rich financial results as well, even in the non-ICT sector. The importance of taking good care of one's employees is directly emphasized.

5.8 Imperial Chemical Industries under Harvey-Jones: Inclusion

Imperial Chemical Industries (ICI) creates ingredients for paints, foods, perfumes, and hygienic products. The current headcount is 36,700 on a global basis, and the number of products 50,000. The sales volume of 2002 reached \$9.7 billion (ICI 2003.) The company would not have been the same without its leader Harvey-Jones, who led it in the 1980s. Harvey-Jones had an outstanding career with many great achievements, several honorary doctorates, and a knighting in 1985 (based on Harvey-Jones 1988, p. 1.) ICI excelled under his leadership. His leadership style was inclusive.

He had time and respect for all the employees, and tried to work with and not against them. Business is a process of learning, based on the premises given by employees and their reactions (ibid.) Learning is a common theme to Harvey-Jones, ServiceMaster, Iacocca and Microsoft, where listening and communicating are considered very important.

Weinzimer (1998) has described the importance of the perception stage, where the competitive environment is monitored. This is also part of Harvey-Jones' advice. Monitoring the arena for dangerous competitors is necessary even though it often leads to unpleasant policies (Harvey-Jones 1988, p. 64.) This also fits with the Microsoft case, where checking on the competitors is a key strategy. The fact that the policies may be disliked fits into the statement that one has to learn to handle frustration (Robbins 1986.)

Just like Iacocca, Gates and ServiceMaster, Harvey-Jones respected the lower employees. They were seen to be the ones doing the actual job and their wishes should be included in decision-making (Harvey-Jones 1988, p. 65.) Harvey-Jones emphasized empowerment, and decisions should be made so that everybody grows (ibid., p. 259.) More specifically, Harvey-Jones advised that Directors must balance the needs of customers, shareholders, employees and of the more general context in which they operate. The influence of these groups should be considered appropriately based on a careful assessment of how influential they are (ibid., p. 196.) Thus Harvey-Jones' inclusive leadership style did not only include the employees, but also other groups.

5.9 Norwegian Export Companies: Various Factors

A quantitative study of 114 Norwegian export firms was done in 1988, concluding that successful firms have a more aggressive attitude towards market possibilities, and that they tend not to see hindrances as problems (Solberg 1988, p. 7.) Seeing obstacles as opportunities rather than difficulties contributes to coping with stress (Atkinson et al. 1996.) In the export companies, a customer focus was important, too. One could be successful with higher prices while providing

good customer service. Also, successful companies tended to show more cooperative and analytical attitudes than less well-performing exporters (Solberg 1988, p. 18.)

Norwegian export companies of around four hundred employees tended to be more successful than bigger ones, which averaged around eight hundred. Solberg speculates that the larger the company, the more inertia it has (ibid., p. 18-19.) The smaller the physical size compared to the financial value, the less inertia. In sum, the successful export companies manifested a strong customer focus; cooperative attitudes toward employees and customers; a willingness to confront problems; analytical attitudes; and competitiveness with regard to the market. It is hard to provide a more condensed summary of these cases, which illustrates the problem of generalizing from quantitative research when it comes to reflexive, complex phenomena which cannot be easily grasped by numbers.

5.10 Summary

Key leadership qualities at Visma Software were trust, motivation and intelligence. Based on Barkstedt and Borgman (2000) in ICT companies, holding on to the employees is more important than in non-ICT companies, so leadership in the former should be more democratic, thus rendering motivation and trust important. Enator was a motivated, trusting and playful company in that the culture was very sociable. The five interviews reinforce the importance of the factors trust, motivation and to some extent creativity.

Excessive spending, other unethical behavior, mergers between incompatible cultures, and too little market intelligence have been described as common themes to various ICT failures.

Within the non-ICT cases, Chrysler had had many extreme ups and downs even before Iacocca entered the company. Iacocca's leadership style was more power-oriented than Gates'. Iacocca was keen at surveillance and was adept at communicating and handling public relations. The case of ServiceMaster shows that a company can be successful even though it has profits only as priority number four. ServiceMaster wanted to honor God and help people develop. Harvey-Jones led a non-ICT company with an inclusive style. This means that not only ICT leadership can gain from such an approach. Regarding the Norwegian export companies, common success factors include emphasizing customers and cooperating well with them and employees; seeing problems as challenges and displaying analytical attitudes; and competitiveness with regards to market conditions.

Tables 5.1 and 5.2 below provide a summary of all the ICT and non-ICT firms respectively.

ICT Firms	Performance	Key Leadership Features
Microsoft, international with Redmond, Washington State (US) as its innovative base	Extremely successful	Motivation, trust, playfulness, intelligence
Visma Software, Norway	Very successful	Motivation, trust, intelligence
Four Swedish ICT firms	Successful	Motivation, trust
Enator, Sweden	Successful	Trust, playfulness, motivation
Four Norwegian ICT firms and a UK division of an ICT company based in India, data from own interviews	Successful	Motivation, trust; creativity within limits
Various ICT firms, US and Europe	Failures	Unethical behavior, for example excessive spending; mergers involving incompatible cultures; too little market intelligence

Table 5.1
Summary of ICT Cases

Non-ICT Firms	Domain	Key Leadership Features
Chrysler, US	Successful	Power; loyalty; authority; communicative skills
ServiceMaster, US	Successful	Honoring God; helping the employees develop
ICI, international, based in the UK	Successful	Inclusion of all involved
114 Export companies, Norway	Some were successful	Of successful cases: customer-focused; cooperative; willing to confront problems; analytical; competitive towards the market

Table 5.2
Summary of Non-ICT Cases

6 DISCUSSION

In this chapter, first the connections between the early chapters and the analysis chapter are discussed. This leads to the derivation of a model of leadership style for ICT firms, which is presented in section 6.2.

6.1 Examining the Relationship between Initial Issues and Analysis of Cases

In the previous chapters, a series of connections were made between issues described in the introduction and leadership literature on the one hand and the specific cases analyzed in chapter four and five on the other. This section goes through the list of connections in a more systematic way.

6.1.1 Uncertainty, Complexity and Leadership in ICT Firms

The introduction started with the topics of uncertainty and complexity, and in chapter three the main research question was stated to focus on understanding ICT leaders' approaches to manage uncertainty and complexity. How have the leaders analyzed in this thesis dealt with issues of uncertainty and complexity? Iacocca was good at communicating, and held that one's list of priorities should be condensable to one page (Iacocca 1988.) He could be simple in his statements (Gordon 1985,) but was generally understood by the public. He was thus capable of reducing the amount of information to very understandable units. However, as reducing complexity can increase uncertainty, its oversimplification process can make the information unreliable (Gordon 1985.) When it comes to the ICT sector, uncertainty and complexity play a stronger role than in the car business, since ICT deals with information itself. This section is divided in three parts. The first subsection relates uncertainty to leadership in ICT firms, the second looks at complexity in this respect, and the third examines the relationship between complexity and uncertainty in ICT firms.

6.1.1.1 Uncertainty and Leadership in ICT Firms

Gates dealt with uncertainty by being a tireless innovator, and always seeing the weaknesses in the own products before any customer did. He also watched the competitors closely, not allowing anyone to gain the lead. The uncertainty of not knowing what customers want next was met with an energetic customer focus, investing lots of time and work on gaining feedback from them. Gates also held that the greatest risk is not to act at all, and his playful attitude helped him take the initiative with regard to every major risk. At Enator, uncertainty in part seemed to be avoided in the easy way, by downplaying bad news and probable risks. Gates has been far more successful than Enator and this reinforces the view that leadership should be defensive, dealing with uncertainty by pinning it down to issues that can be addressed explicitly.

Uncertainty can be addressed by identifying what one is to be uncertain about and then communicating all relevant information regarding this, be it positive or negative. This is reflected in the case of Microsoft where stating something unacceptable was seen to be better than not stating something that is important and acceptable (Gaynor 2002, p. 196.) This contributes to bringing the aspects of an issue that have not been addressed yet into the open, thus helping to deal with uncertainty. In addition to confronting people and oneself with mistakes or improvements, uncertainty demands the ability to live with risk, to take chances, and be brave. This courage was present at Microsoft. The more success Gates had, the more vulnerable he felt. An example of living with uncertainty is his advice to make decisions carefully but then to live with them although it may feel unsafe. If this were not done, the time originally invested in making the decision would be wasted. However, not every decision or non-decision must be pursued no matter what; if it is strategically wrong, it should be changed, as when Gates changed from ignoring the Internet to make it the basis for Microsoft's future software development, a choice that required courage.

A more specific way of dealing with uncertainty is breaking the programming down into features instead of phases as in the waterfall model. At Microsoft, programming is closely knit together with testing, which reduces uncertainty in that the program works so far and does not have to be reworked later. Uncertainty of what the employees do should not be met by surveillance of their e-mails and so on, rather by trusting them and rewarding "heroic" work appropriately, building up a meritocracy. Another way of dealing with uncertainty is giving projects different percentages of buffer time, according to how likely they are to take more time than expected. In addition, it can be advised to maximize the amount of facial contact, both to promote trust and to make the work feel safer, thus dealing with uncertainty.

As a basic step towards dealing with uncertainty, Gates was always aware that he could learn more, that there always was some further uncertainty to resolve. Then he gathered this information, in various ways, some of which have been discussed earlier. His ability to live with uncertainty was important, being able to take serious risks and living with insecurity. In addition, this ability became developed further over time, as he felt more vulnerable the more success he had. Perhaps he felt too vulnerable to function well in 2001, due to his previous success and/or the larger geopolitical context.

He knows that he and his company are vulnerable and uncertain, which has spurred him to be on the lookout for competitors. The information about which competitors were likely to appear as dangerous was unreliable, as he could not know for sure which ones will emerge as a serious threat. He dealt with this by considering all of them, in some cases this led to buying them. He has also been very aware that he does not (yet) know which features and details his potential customers want in their software. This has led him to take serious measures to ensure this knowledge. Examples here are tape-recordings of customer feedback and testing prototypes of programs with would-be customers. Thus Gates has done a lot to acquire knowledge reducing uncertainty which can then be pumped into decisions.

6.1.1.2 Complexity and Leadership in ICT Firms

Gates managed complexity by keeping the corporation small and manageable. Each time communication pathways between employees and/or leaders became too restrictive, the structure of that unit was simplified. Communication between employees was honest and daring, attacking all discovered weaknesses, thus reducing the complexity by way of a maximal amount of knowledge sharing.

One way to address complexity in ICT firms is to empower the employees. In this way their knowledge can be used to deal with necessary details to an issue. Gates pays his employees to think independently and it is likely that other ICT firms could profit from such an approach as well. Empowerment can also be enhanced by developing the employees' level of competence and "making them good." However, empowering employees can be exaggerated, in that their problem-solving becomes a personal matter, distanced too far from objectivity. This might introduce uncertainty to the company, and so a balance between empowerment and guidance is necessary. A more specific way of avoiding complexity is to do as Microsoft does, avoid documentation of programs, but just include it as comments in the code. The complexity of how each programmer would have liked to write his or her comments is dealt with by making the programmers stick to a standard for writing comments, the so-called Hungarian one. Another way of avoiding complexity is to take the major parts of a complex problem first, leaving the "fine-polishing" to the end. At Microsoft, the most important program features are programmed first, and this to a large extent takes the brunt out of the complexity of the problem to be solved. However, the everyday deliveries, while reducing the uncertainty, necessarily increase the complexity as the program increases in size.

Another aspect of complexity is the communication threshold, when the number of programmers gets so large that most of their time is spent communicating about the program. Microsoft dealt with this by hiring very efficient programmers and making large teams work like small ones. Parts of the program are broken down, such as into features, functions, subsystems and objects, and assigned to single or small groups of programmers. This approach is enhanced through empowerment, an empowerment that is worthwhile because the programmers are so competent. Gates' effective management of complexity could be an important reason for minimal staff turnover in Microsoft

6.1.1.3 Relationship of Uncertainty and Complexity in ICT Firms

Reducing uncertainty through experimentation or complexity by analysis can be in tension to one another. Experimentation adds details which must be analyzed, and analysis necessitates more experimentation. This was also the case at Microsoft. For example, letting the employees be empowered is a form of experimentation. The details of their work performance which emerge then increase complexity. However, these details are also dealt with, in terms of rewarding the employees based on an analysis of their accomplishments. This example shows how the trade-off between uncertainty and complexity is related to Microsoft: there was lots of work directed at

reducing the uncertainties as well as lots of work harnessed into analysis and dealing with the complexities. Thus the Microsoft case emphasizes that uncertainty and complexity are in a trade-off relationship; it supports this relationship, as Microsoft and Gates extensively dealt with both.

Cooperation, internal and external is emphasized. Internally, employees need to cooperate smoothly and honestly with each other, and externally customers need to be considered as partners. This does not deny the need for competition; however, it should be directed outwardly, only at the competing companies. Internal cooperation can reduce uncertainty in that one gets to know each other more closely. Examples of internal cooperation are political alliances, understanding which tasks others are capable of, and building and nurturing of supportive relationships. These processes reduce uncertainty in that one gets to know more about the work at the company and about one's colleagues. They also increase complexity, as they get to know more details about each other and other peoples' jobs. This complexity is dealt with by further analysis. As mentioned earlier, leaders in general have the largest pain as well as gain; leaders of ICT firms have the largest uncertainty as well as complexity.

6.1.2 Varying Situations

The situational conditions which will be considered here are life cycles of organizations; the impact of strategy on structure or the other way around; competing companies and employee characteristics; levels of leadership and management; and the nature of the organization, such as ICT or non-ICT.

The primary data from the interviews reinforced that leadership faces various situations and that good leadership depends on the characteristics of the situation and employee as well as the leader. The view that increased company size leads to inertia is emphasized in the case of Microsoft, where the inertia is avoided by keeping the corporation physically small. However, it is unclear whether strategy shapes structure, or whether both influence each other. For example, Gates changed the strategy of the corporation in direction of software security in the beginning of 2002. With a larger company, security may be a focus due to the existing size and structure of the company. The environment influences leadership, and Microsoft has been very wary of competitors. It has reached deeply into both its external and internal environments. Barkstedt and Borgman's distinction between levels of leadership remains plausible. Leadership in highly innovative organizations should also leave space for self-leadership and innovation. When teamwork entered Microsoft, there was slightly more need for consensus instead of confrontation, but it still emphasized the lack of top-down leadership.

The process view of leadership states that every organization finally faces a period of crisis, and more decision-making is expected of the boss. It is questionable whether the leadership at Enator lived up to this when the company met trouble, and the leadership was largely ignorant of the dangers. However, Enator has been generally successful, surviving the crisis. Microsoft's 2001 results were relatively low, although compensated to some extent in 2002. Their development of the .NET platform, which is to connect many kinds of electronic devices, may suggest that it is not yet in a real crisis, since this platform has a lot of future to it. Microsoft may manage to continue avoiding a crisis by making its products outdated before anybody else does so. "Timely

obsolescence prevents future crises" (Gaynor 2002, p. 197.) Crisis periods are not clear from the other cases, except that Iacocca entered in such a period, which nearly was a prerequisite for his charismatic leadership to blossom.

Keeping a flat structure and avoiding bureaucracy was the basis for Microsoft's strategy. Enator also had little bureaucracy. The same is more unclear with the other cases. This lends support to the view that bureaucracy should be avoided to the extent possible in ICT companies. However, there are different kinds of bureaucracy, suitable for different purposes, and looser structures, such as a web or network of inclusion which might be useful in certain organizations (Bolman and Deal 1997.) The looser forms might be more applicable to ICT companies as they allow for a freer flow between leader and employees.

6.1.3 Approaches to Leadership

Lippa (1994) mentions the importance of the leader characteristics relating to experience and skill. Experience seems relevant for Microsoft; Gates had lots of it, being the technician and the businessman. However, Microsoft managers hired talented people right out of college, before these employees had acquired experience. Maybe they were not being groomed immediately into leadership positions. Experience also seems relevant in the case of Visma Software, where Boasson knew the topic of his business well. Experience was not described in the case of Enator.

The high-performance or empowerment variety of leadership is most apparent in the ICT cases, with more of the railroad view and the pyramid view in ServiceMaster and Chrysler. This may be one of the major differences between ICT and non-ICT companies.

6.1.4 Determinants of Leadership

Intelligence played an important role at Microsoft. Intelligence was also important at Visma Software. The importance of this at Enator appears lesser, but then this company also had more limited success than Microsoft and Visma Software. So intelligence appears to be related with company success in these cases. One form of intelligence is academic intelligence, which manifests in educational institutions (based on Atkinson et al. 1996.) ICT entrepreneurs have high levels of formal education as measured by university or college degrees (Amsden and Clark 1999.) An exception here is Gates, who left his studies at Harvard for what turned out to be a better option, but he still belonged to the social elite (ibid.) An interesting question is whether Gates did not like the form of bureaucracy which was present at Harvard, since his organization is based so much more on characteristics such as trust and playfulness. Leaders tend to be smart but not the smartest (Lippa (1994.) This is supported by the Microsoft case, where equally smart *or smarter* people were employed.

The view that intelligent leadership works best in calm low-stress settings does not appear to be supported. Gates is very smart acting in a high-stress setting. He may be excellent at coping with stress so that he in practice is creating a low-stress setting. Enator did not perform well when there was more stress, it simply downplayed the risks then, or maybe pretended they were not there.

Microsoft appears mostly task-oriented, supported with high levels of trust and motivation which are more socio-emotional factors. So Gates scores high on both dimensions. Boasson is not covered deeply enough to make a similar analysis, while Enator clearly was mainly socio-emotional. Task-oriented and socio-emotional leadership are on two independent dimensions. One can be high in both, low in both, low in one and high in the other, and so on. The interviewed leaders did not fit into the description of either task-oriented or socio-emotional; rather they appeared to show both characteristics to varying degrees.

6.1.5 Role of Leadership in Empowering Employees

It was stated that workers prefer smart and desirable leaders, and do not like coercive power, with mixed attitudes toward legitimate and reward power. As for reward power, Microsoft is a meritocracy, and the employees seem to like that form of reward. Some coercive power was used there when programmers had to pay fines for delivering erroneous code, or having to do extra work. It is also likely that they fired incompetent people which they would not have employed if they knew them well enough. On legitimate power, the strong, religious work ethic at Microsoft may have been a form of that power. Microsoft employees liked their work. It appears that they were not negative about legitimate and reward power or even some coercive power. This phenomenon may describe the high level of motivation at Microsoft rather than necessarily go against Lippa's (1994) distinction into forms of power and their likeability. Power assertion at Microsoft was closely tied up with its meritocratic culture. That workers prefer desirable leaders is nearly a tautology but strengthens Sørhaug's (1996) view of leaders as appearing erotic to their employees.

Empowerment seems to be used a lot at Microsoft, and is likely to have been present at Visma Software and Enator as well. Microsoft has trust, and Visma Software is likely to be similar in this respect. Enator had a leadership style which was low in power assertion. The interviews reinforced the sense that empowerment is important in ICT companies; however, there was a concern that there possibly could be too much empowerment, as when an employee got too personally involved in the work to be done.

6.1.6 Role of Leadership in Shaping Vision and Focus

Is the vision of leadership as important as Weinzimer (1998) suggests? Microsoft has high task and technology uncertainty, and is led with a vision view of leadership, supporting Weinzimer's view. ServiceMaster, a non-ICT company, also has a clear vision or mission. These are the two greatest success cases in this thesis, and lend support to the importance of having a vision and communicating it. The interviews of the five leaders in Norway suggest that operating on a vision is fairly important in ICT firms.

Maintaining a focus through specialization is clear in the case of Microsoft. Although they have a wide range of software products, they do not construct hardware, with the exception of a mouse version and the recently developed game station called x-box. They are likely to have cooperated with hardware companies to produce the box. Visma Software has also focused on a special kind of software in the Norwegian market. Enator specialized in consulting services, and Iacocca in

cars. Since this topic of market targeting applies to so many cases, the issue needs refinement. What does it mean to specialize? Given a concept, one can always find a more general and also more specific one (Atkinson et al. 1996,) just like the chase for smaller and smaller particles in physics. Specialization implies the emphasis on the strongest parts of the company. Gates has used his strengths and not his weaknesses (Lowe 1998, p. 39,) which applies to Microsoft in general as well. This does not mean that one neglects bad news, ignores mistakes, or undervalues risks; it means that a focus builds on the strengths of the company and enhances them. Visma Software was similar to Microsoft. Enator was good at sociability. Sociability can be a strength as well as a weakness; if one is too nice to each other, real problems do not get confronted. Perhaps leadership at Enator should have focused more on the knowledge of the employees than only the atmosphere at the workplace. Iacocca enhanced his strengths in communication and will-power by using them for the gain of Chrysler and himself. At ServiceMaster, the strength of ethics was enhanced by applying them to all employees. Thus Ries' (1996) emphasis on having a company focus is in general supported by these cases, although the foci were not explicit in all cases.

6.1.7 Role of Leadership in Encouraging Entrepreneurial Behavior and Innovation

A love of the business is an important aspect of encouraging entrepreneurial behavior and innovation. Gates loved the personal computer. Visma Software's Boasson liked working hard. At Enator, there was socially charged motivation. Devotion may separate successful from unsuccessful entrepreneurs, or it may be a consequence of success or failure. It is a chicken-and-egg problem but to have devotion or motivation is clearly superior to not having it - because of how it is felt. The interviews also emphasized the importance of motivation; one interviewee used the term "joy." Gates was described as being "dependent on winning" and not becoming relaxed, rather staying restless. Many work hours seems to be a general rule for all start-ups, with social relationships usually at a loss (Nesheim 2000,) as emphasized by the history of Gates.

A series of factors were mentioned in chapter two as advice for encouraging entrepreneurial behavior and innovation. The following presents the cases where these pieces of advice are supported. Avoiding procrastination was done by Microsoft, Visma Software, Iacocca and with some certainty also ServiceMaster. Quick implementation of ideas is not shown clearly for any of the cases, but seems plausible in the successful ones. Having a goal higher than money is partly apparent in Microsoft - its vision - although Cusumano and Selby (1995) write that the corporation has money as its first goal. ServiceMaster is the best example of not just explicitly going for profits, while Enator emphasized social relationships. In the cases of failed ICT companies, there was often a chase for personal profits at the expense of the company, which easily brings downfall. An ethical approach is a necessary but not sufficient precondition for success.

When it comes to knowing details as a critical factor for leader, Boasson and Iacocca knew minute details of their respective businesses. They were not just administrators. Controlling one's own destiny is likely to be rewarding if one is capable of it, but whether the firms were capable of it has not been discussed at length in this thesis. Microsoft and Visma Software were quick-footed. The boss of the latter company claimed that Microsoft people were friendly, but then that

is also quite likely simply because it was a cooperative relationship, with Boasson basing his software on Microsoft operating systems. Gates can be unfriendly, he has a quick temper. However, he might have compensated with the very strong customer-focus at Microsoft. All the trust within Microsoft also suggests a good atmosphere there. Enator and ServiceMaster are the most outstanding examples when it comes to friendliness.

Fun has been an important part of life at Microsoft (Tsang 2000.) When the challenge factor declined for some people, they left, but most stayed very long. Fun also seems a key ingredient at Enator. Chrysler employees' devotion to Iacocca also suggest fun. Constant innovation applies to Microsoft, a company that uses lots of money on research and development. It also fits with Visma Software, Iacocca and ServiceMaster. Avoiding unnecessary costs has been central to Microsoft, and also in Visma Software. One of the interviewees emphasized the importance of "fun in whatever one is doing."

6.1.8 Role of Leadership in Developing and Promoting Company Image

Microsoft has attained a lot of media attention. Iacocca was a master of public relations (Gordon 1985.) Enator, Visma Software and ServiceMaster may have used this strategy to a lesser explicit degree.

Focused companies keep a watchful eye on the competition (Ries 1996.) This is precisely the case with Microsoft, and also with Visma Software. Boasson respects all his competitors. What counts is the market share one has, not the number of markets one is operative in (Ries 1996.) Microsoft has surely succeeded in getting a high share in the software market segment. With regard to the interviews, the attitudes toward competitors were mixed, with some being competitive and some rather neutral. Respecting lower level employees is evident in the case of Microsoft, Iacocca and ServiceMaster.

Gates' (1999) three pieces of advice, on using one's time well, watching competitors and having the company to be customer-driven, is useful for other ICT companies too. The critical factor of time relates to the basic factor of working a lot. Motivation is a common factor for the studied successful ICT cases. The role of watching the external environment and developing a customer-driven approach is emphasized in the cases of Microsoft, Visma Software and Harvey-Jones.

Robbins' (1986) keys to success are largely psychological - learning how to deal with frustration, rejection, economic pressure, conceit and giving more than one expects to receive in return. The factor of economic pressure fits with Microsoft, where expenses were cut to a minimum and luxury avoided. The strong learning factor there is described as a way to avoid conceit. Frustration and rejection are likely to have been apparent when the employees' ideas were ripped apart by honest confrontation, and they still settled for their mission of Microsoft success. Has Microsoft given more than it expects in return? How much is its software actually worth? These questions are not easily answered and any viewpoint may appear to be biased. However, one example of giving more initially is including the Internet Explorer in the Windows operating system for free. Still, they would get more in return from dominating the Internet market with

their browser. This may be an example of why Robbins advises to give more than one expects to return in the first place; the question is, what did Microsoft expect to get in return? It would be hard to ascertain. Robbins' (ibid) advice is not investigated for the other cases but based on Peck (1993,) solving problems requires the ability to tolerate pain, as in frustration and rejection.

Listening to customers is important (Weinzimer 1998.) Microsoft follows this rule, as well as Visma Software, Enator and ServiceMaster. Iacocca was also a good listener. The advice of smiling and watching one's tone has not any counterparts in the case descriptions above, except for the tendency at Enator to be sociable, and the emphasis of care at ServiceMaster. The ingredient of tact where one attacks issues and not people has been important at Microsoft, because there were so many instances of confrontation. Tramel and Reynolds (1981) also emphasize the importance of communication, and Iacocca is the most outstanding example of this from the cases.

Gates embodies a style of leadership which can be characterized as defensive. His success makes him feel vulnerable, and he takes the consequence of this vulnerability. As Boasson modeled his company on Microsoft, it is likely that he too led defensively. The defensiveness in the other cases is unclear.

6.1.9 Role of Leadership in Encouraging Ethical Considerations

Microsoft built up a meritocracy and encouraged diversity. They have also been charged with going across the law with regard to installing communications equipment in certain countries and allowing software piracy in China. The larger picture is that drawn by the antitrust case. At the least, Microsoft may appear to be opportunistic; at the worst, it has stifled both competition and innovation in the software industry. Microsoft may not suffer direct consequences from court action, but may do so in terms of image. Integrity was a recurrent topic in the interviews. The role of ethics may seem less important in the case of Iacocca, and higher in the case of ServiceMaster, where the above-all principle is to honor God, with profits being only a fourth priority.

The issue has not been raised for the other cases, except in the section on failed ICT companies. Cooperation with customers and cooperation internal to the company would involve not wasting money. Wasting money was a common cause of failure in the mentioned ICT crashes discussed in Glass (1999.) Not wasting money is part of the context in which highly successful cooperation operates. Other unethical behaviors related to ICT failures are stealing, cheating, lying, misreporting, spying, and intensive quarreling (ibid.)

6.2 A Model of Leadership Style

In this section, I develop a model as a result of the analysis. It relates uncertainty and complexity to four contextual conditions of leadership in ICT firms. The model also covers eight dimensions relevant to leadership in general, four of which are related to leadership in ICT firms. This section is divided into four subsections. Uncertainty, complexity and the four types of context in the model are covered in subsection 6.2.1. The inner eight dimensions of leadership are discussed in subsection 6.2.2., followed by a discussion in 6.2.3 on the relevance of these eight dimensions of

wherein the employees and leaders dwell; their office solutions; the infrastructure available; available technology related to infrastructure such as servers and copying machines; how the offices are organized in relation to each other; how each room is organized in terms of inventory; which availability and pricing food and drink has; what kind of recreational facilities exist at the site; and so on. Some examples of dangers related to the physical context are ineffective ventilation; contracting SARS when traveling; providing the employees with popular but unhealthy food and drinks; having an impractical arrangement of offices; having a malfunctioning copying machine; and so on. While it is unlikely that all physical aspects of the workplace will be hampered simultaneously, it can occur that single difficulties make it necessary to restructure the timing or procedure of the work to be done.

In conditions of extreme uncertainty, blind faith emerges to a larger degree than in more secure times (Giddens 1990, p. 111 and 133.) As trust helps to build companies, faith is a very related concept which also may be of relevance in dealing with market uncertainties. Another concept which is related to trust is confidence. Being confident in one's ability to perform is necessary for performance to be possible (Atkinson et al., 1996.) While faith may deal with more spiritual matters, confidence has to do with practical possibilities of behavior. All three – faith, trust and confidence – may be important to deal with uncertainty in general. This reinforces the statement in chapter two that self-confidence appears to a high degree in many leaders.

Leadership is influenced by the four contextual conditions of markets, technology, politics and the physical environment. The market context influences motivation; in order to sell a product, one must like the product, and the process of selling it. In addition, the customer must be motivated to buy it. Markets and future customer needs and wants are uncertain and require substantial effort to become clarified and implemented, reinforcing the closeness of the market context to the aspect of motivation. Motivation is necessary to go into assessing all the customer needs. The technological context influences intelligence, which is a precondition to develop new technology.

The political context relates to authority, as emphasized by Iacocca. Bush has a lot of authority which he has used in waging his war. The physical context relates to the notion of risk. Aspects of the physical environment have been mentioned. When these are hampered, uncertainty enters. For example, sitting in an open office landscape can be stressful as there is a lot of potential for distraction and too little privacy (Sommerville 2001). The model emphasizes the contextual issues of leadership. Worsening relationships with customers requires the development of employee motivation to sell and cooperate more effectively with customers. If the technological opportunities are too complex to evaluate, bringing in intelligence from elsewhere, such as through consultants, might help. An impact on the political context requires appropriate authority. Dealing with physical dangers of the environment requires a risk assessment, whether implicit or explicit.

6.2.2 The Eight Dimensions of Leadership

The model presents eight dimensions in terms of which leaders can vary. The model includes straight lines connecting opposite concepts (such as trust and power.) The opposing concepts are

dialectically related implying that with more of one concept there is less of the other. For example, more trust implies less power. Trust is very closely related to empowerment, and giving power away as in empowerment leaves the leader with less power. The fact that trust is at the bottom, or basis, is parallel to psychologist Erikson (Atkinson et al., 1996) naming the first stage of human development as basic trust versus mistrust. It is also no coincidence that power is at the other end; leadership is in a continuous interplay between trust and power (Sørhaug 1996.) In order to be able to trust a boss, he or she must have the ability and willingness to exercise power. The saying that "money is power" also bears on the relationship between trust and power.

More motivation means less authority; if one motivates employees highly, one is less likely to appear as an authority figure. The dialectics of motivation and authority relates to ambivalence which most people face between what authorities say that one should do and what one wants to do oneself. The issue of choosing between ethical and gratifying behavior is one of four areas of human ambivalence and conflict, which can lead to stress (Atkinson et al. 1996, p. 483 and 455.) Both intrinsic and extrinsic motivation are included in the model, as they both contribute to pursuing the company goal. Extrinsic motivation is more important at a basic level, making sure that salary conditions and so on are met. When basic needs are met, intrinsic motivation can add to the motivation and make one work many hours. The meritocracy of Microsoft illustrates how intrinsic and extrinsic motivation relate to each other; there was lots of passion for the business but also profit-sharing according to one's personal performance. Giving all employees the same payment would have undermined the effort to do one's best there.

Higher intelligence means less risk, as it helps to predict dangers and take steps to avoid them. Dealing with risk may feel risky but reduces the actual risks. The more intelligent one is, the more one thinks of dangers in beforehand, thus reducing the actual risks before they have a chance to materialize. Examples are Gates and Boasson monitoring potential competitors or the chess world champion pondering threats from the opponent so that they usually do not happen. This reinforces the importance of defensive leadership.

More playfulness means less bureaucracy, as engaging in work in terms of joy, fun and play is very dissimilar from engaging in formally defined tasks according to existing rules and procedures, which can be more boring. Bureaucracy and playfulness are clearly different from each other, which makes it easy to see why they oppose each other in the model. One might find these two related to specialization and universalism, respectively. In bureaucracies, it is more clearly defined who does a particular task; with playfulness, a more inclusive work division is possible. At Microsoft, playful Gates did many different tasks, related to his three talents, and another key employee also had several different areas of responsibility (Tsang 2000.)

6.2.3 Arguing for These Eight Dimensions

The model emerged as a result of the analysis. I now discuss why the eight dimensions in the interior of the model are relevant to leadership. Trust is clearly important where leadership is not a dictatorship. The employees must be trusted to do and be able to do their work. Trust is particularly important in ICT firms, as has been seen with the ICT cases. Empowerment is intimately linked to trust. Sørhaug (1996) made it very plausible to use power as an opposing

dimension to trust, as he describes leadership as being in interplay between trust and power. The work of Erikson (Atkinson et al. 1996) makes it plausible to place trust at the bottom of the model, as it provides the basis for human development. It is also plausible to place power at the top of the model, as leaders are often associated with being “at the top.”

Motivation is critical in leadership; the motivation must come from the top or it tends to die out, with the employees not being particularly motivated either. Motivation was a central issue in the ICT cases, being at the foreground of the focus. However, it is also relevant in non-ICT firms, as low motivation would lead to more turnover and absenteeism. This was seen in ServiceMaster where the employees needed to be motivated by caring managers. Authority is relevant because leadership is not only relating to power and trust but also exercises authority (Sørhaug 1996.) It is natural to place authority as the opposite of motivation as there often is a trade-off between wanting (motivation) and having to (authority) do something.

The relevance of playfulness emerged from the analysis of the Microsoft case. At Microsoft, the leadership and the employees were playful, learning as they go along, and emphasizing creativity. In the interviews in Norway, with a less competitive and playful culture than the United States, playfulness was seen as useful when held within limits. It is also natural to have bureaucracy as an opposite to playfulness. Bureaucracy as a topic emerged from the study of Microsoft in Tsang (2000,) where it was seen as important to avoid bureaucracy as much as possible, as it stifles innovation within the own company. Where non-ICT firms may be fit for a certain kind of bureaucracy, in ICT firms looser structures of leadership are more suitable, and these also open up for more playfulness. Playfulness and bureaucracy is a natural pair of opposites on the basis of the analysis.

Intelligence also emerged as a topic of vital importance to the success of Microsoft, however ignorant one may want to be of it due to envy. Intelligence is also important in other ICT firms as they deal with technology and the employees tend to be quite competent. Companies focusing on learning need the ability to learn, as indicated by intelligence. Gates says that work is more important than intelligence, but that is because he already has a lot of intelligence; what can make a difference to his life is how much he works. The work aspect at Microsoft reinforces the importance of motivation, another of the model’s dimensions. Dealing with risk is also relevant to leadership; defensive leadership, for example, takes care of many dangers before they occur. The topic of risk was also emphasized in the case of Microsoft, where Gates was shown to be good at risk assessment. One of the greatest risks is inaction, he holds. The risk aspect of inaction is also mentioned by Giddens (1990, p. 32.) It seems natural to have intelligence as an opposite to risk as the key to Western civilization is to prepare for tomorrow (Voigt 2001, conversation); the more intelligent one is, the more one can prepare for tomorrow and avoid dangers by risk assessment.

It is also relevant to discuss which dimensions do not appear in the model. Communication was a topic in the Microsoft case, with all the honest confrontations and feedback loops between employees and customers and so on. However, the aspect of communication is covered by the dimension of trust. Honest confrontations trust the opponent to be able to take the criticism, and reiterate the importance of truth, which also makes the communication more trustworthy. Another dimension which occurred, this time in the Enator case, was sociability. However, this is covered

by the combination of trust, motivation and playfulness, with a focus on trust. Social relations are usually motivating, they operate on trust, and at Enator some acts of sociability were rather playful, such as the trips to Greece. Other factors which one might consider for the model are faith and confidence which have similarities with trust.

The eight dimensions in the model are clearly different from each other, and discussed separately. There are other linkages like trust and empowerment can contribute to employee motivation; and playfulness can increase motivation, as play is more enjoyable than the mode of work. Power is related to authority, in that the source of power usually has authority, but this is not always the case (Bolman and Deal 1997.) The model thus provides an overview of relationships between various determinants of leadership. These are both opposing and also contributing to each other.

6.2.4 ICT-Firms, non-ICT Firms and Earlier Leadership Practice

Trust, motivation, playfulness and intelligence seem more relevant for ICT than non-ICT firms. In ICT firms, the leader needs to trust the employees in order to empower them to do their best. The employees also need to trust the leader to provide appropriate rewards for their various degrees of accomplishment. The leader needs to be motivated in order to enhance the motivation of the employees. Playfulness is an ability that will provide advantages in leading ICT firms, as it provides avenues for creativity, joyful problem solving and experimentation. An experimenting approach is also the primary way to reduce uncertainty. However, employees or those who do the accounting should not use their playfulness to attempt to escape from tax laws. Intelligence is necessary to be able to grasp the intellectually demanding aspects of technology which are drawn upon in ICT firms, and this concerns both leaders as well as employees. Making sure that the company includes smart people is a way of safeguarding its growth, as long as the ethical approach also is sufficient.

Gates' leadership style is characterized by these factors. Visma Software was led with motivation, trust and intelligence. The four Swedish ICT firms had leadership emphasizing trust (empowerment) and motivation. The leadership sociability at Enator can be classified in terms of trust, motivation, and playfulness; the family culture there implies trust; the trip to Greece and similar events of celebration and connecting the group indicate playfulness; and these factors increase motivation. The primary data from the interviews also emphasize factors of trust, motivation, and playfulness to a certain extent. Iacocca had a leadership style emphasizing power and authority. Playfulness was not an important issue in any of the non-ICT cases, neither was intelligence, except for the minor indicator of analytic approaches among the successful export companies. Motivation was not seen to appear as an issue, neither was trust, with the exception of Harvey-Jones having an inclusive style indicating empowerment and therefore trust. Thus trust, motivation, playfulness and intelligence seem more important for the success of ICT than non-ICT firms. This makes these four dimensions more important for ICT firms than their opposites in the model. For leadership of non-ICT firms, the importance of the eight dimensions is more equal than in the case of ICT firms. Having an ethical approach is a necessary but not a sufficient condition for success.

The model is intended in a descriptive sense, describing a series of interesting constructs, their relationship to each other and the differences between ICT and non-ICT firms. It is not intended as a normative model, although the model implies that ICT entrepreneurs need to be motivated, trusting, playful, and intelligent if they are to achieve greater success, financial or otherwise.

Parts of the model emphasize the leadership practice in the twentieth century; for example, authority relates to technocratic leadership, and motivation to the human relations movement, whilst bureaucracy implies the leadership focus of administration. Playfulness is reflected in outstanding or charismatic leadership. The four main directions of the model of power, bureaucracy, trust and playfulness relate to Bolman and Deal's (1997) four perspectives of political, structural, human resources and the symbolic frames, respectively. These correspond with the metaphors of jungle, factory, family and temple or theater, respectively.

7 CONCLUSION

The conclusion consists of three parts. The first section summarizes the thesis by answering the research questions guiding the thesis. Section 7.2 then gives concluding remarks by answering the main research question, reiterating the model and discussing implications of the thesis for information systems. Section 7.3 is devoted to questions of further research.

7.1 Summary

At the beginning of chapter two, the question was raised of how managing the trade-off between uncertainty and complexity relates to theories of leadership. The tendency of leaders being intelligent probably derives from their need to be able to deal with complexity by analysis. The contemporary leadership topic of empowerment also relates to complexity, as it reduces it by the employees being able to use more of their own knowledge in analysis about how to do their tasks. Trust in itself is necessary to deal with uncertainty. This can be trust in oneself as in confidence, trust in God as in faith, and/or trust in other people which all can contribute to dealing with the felt pain of risks. The question was also asked of whether adaptive cultures are more suitable to ICT firms than non-ICT firms. The answer appears to be yes. Adaptive cultures have a high emphasis on trust and dealing with risk. Leaders of ICT firms face more uncertainty than leaders of non-ICT firms, and the importance of trust in ICT firms is emphasized.

A series of questions were asked at the end of chapter two; they will be considered here. How does leadership in ICT firms differ from that in non-ICT firms? The ICT firms surveyed display a larger emphasis on traits and behavior related to trust, motivation, playfulness and intelligence, whilst leadership in non-ICT firms was more variable. Empowerment and trust, which can nearly be considered synonyms, are more important in ICT than in non-ICT firms. The same goes for motivation; without any kind of motivation, doing work is impossible, but the topic of motivation as an explicit issue surfaces to a larger extent in ICT firms. Leadership in ICT firms is more inclusive than that of non-ICT firms, and employees in ICT firms need to be involved more in decision-making due to their higher competence. However, leadership of ICT firms still gives guidance, such as by communicating a vision and being inspired by it, and providing guidelines for work. Also, empowerment should not be exercised to the extent that objective issues related to the work to be done become a personal issue. An obvious difference between the two sectors is that in ICT firms, ICT-specific knowledge is necessary. Leadership in ICT firms differs from leadership in non-ICT firms also in terms of uncertainty and complexity, which is encountered more in ICT than in non-ICT environments. In Norway, the difference between ICT and non-ICT firms may be lesser than elsewhere, because most people in Norway are quite competent. However, also here, the mobility in the ICT sector can make an important difference, such as in cases where the employees use most of their time dealing with customers or working from home.

What impact does mobility have on leadership in ICT firms? Gates has dealt with the mobility of the current ICT work environment in terms of building a strong base, an attractive corporation that has held on to its employees, experiencing little turnover due to high motivation throughout the corporation, which was fueled by trust and playfulness. Keys to motivation at Microsoft were

Gates leading by example and being passionate about technology, rewards following accomplishments such as through stock options, honest facial feedback regarding one's work plus letting each programmer sit in an own office. At Enator, facial contact was also important, as the motivation was enhanced by having the employees experience the company as a big family. Leading by setting a good example was also seen as important in the four Swedish ICT firms. Barkstedt and Borgman emphasize that employees in ICT firms should have an influence on decisions made for the firm, which can create a positive cycle of motivation and acceptance, making the employees stay. One of the interviewed leaders in Norway stated that the topic of mobility is one of the main differences between ICT and non-ICT firms, leaving the leader with less time to speak with employees.

How do leaders of ICT firms integrate the implications of new knowledge into their organizations? This topic seems most clearly related to intelligence, which lets one see implications in the first place. Gates is very intelligent and this helped him translate new knowledge into actionable implications, such as standards and documentation of important corporate knowledge which is made accessible to newcomers. Thus concealing information to one's own employees is not a good idea. Gates' brightness inspired the strategy of checking the latest versions of programmed features by testing them the same day or week, thus breaking a potentially large problem into many small and more manageable pieces. His intelligence also inspired implementing implications of customer feedback as soon as possible into the relevant programs, both current and future ones. Also, it inspired employees to implement the implications of ideas concerning better ways to do the work while the work was going on.

How do ICT firms deal with empowerment, finances and seeking market intelligence? Gates dealt with empowerment by trusting his employees and letting them learn from their own mistakes. The empowerment was also nourished by large amounts of honest confrontation. When the truth is spoken and it brings bad news, it may hurt at first, but builds trust, in that it applies honesty. The leader of Visma Software also empowered his employees. At Enator, employees were empowered in the sense that they were trusted and close to each other. On finances, Gates has said that it is a quite an easy topic, just dealing with counting (Lowe 1998.) One leader of an ICT firm in Norway knew the importance of empowerment but also that it can be exaggerated; the work should not become a personal matter. Seeking market intelligence was vital to Microsoft, taking care of the competition before it becomes a problem. Sometimes competing companies were bought. Also at Visma software, services which could not be delivered from the own company were bought from elsewhere. At Microsoft, it was seen as important to build on own strengths, on promising projects, and as soon as a promising project becomes less promising, less resources are used on it. Less successful leaders often accept using resources on less fruitful projects because they seem interesting in other ways (Cohan 1997, p. xv and 16.)

How do leaders of ICT firms deal with the speed of new knowledge and motivating their employees? Gates is quite quick himself, being very restless, which makes his personality fit into the age of the computer. Together with his intelligence, these traits let him succeed in building a strong corporation. The factor of motivation has been covered above in the paragraph on mobility. Although information moves quickly, a vision and direction to the ICT company is important. It is even more important to have a vision than to have the right one.

A further question was to understand what kind of leadership style in ICT firms makes a difference between success and failure. A series of failed ICT companies suggests that unethical action, mergers between incompatible cultures and insufficient market intelligence can lead to failure. An ethical approach plus a leadership style characterized by trusting relations, motivated work, a playful way of being, and intelligent behavior is very likely to bring greater financial success.

It was also asked how existing leadership research relates to understanding leadership in ICT companies. The importance of empowerment arose during the 1990s, and this is reinforced by this thesis' focus on trust among leaders in ICT firms. The human relations movement's emphasis on keeping employees motivated is also very relevant to leadership in ICT firms. The leadership is the basis for the motivation of the entire company. If the leader is not motivated, soon the employees will not be either. The importance of playfulness is touched upon by Bolman and Deal (1997) in their symbolic frame, having the metaphor of a theatre, but its enhanced importance to leadership in ICT firms is new. The same goes for motivation; it was touched upon earlier, but becomes a vital focus in leadership in ICT firms. While an earlier general leadership finding was about the need for leaders to be intelligent (Lippa 1994,) the drive for intelligent employees in ICT firms has been more pronounced than in non-ICT firms. This clearly relates to the knowledge intensive nature of ICT work.

Another question which arose was, how do ethical considerations relate to leadership specifically in current ICT firms? The failed ICT cases suggest that unethical behavior such as wastefulness, spying and personal quarreling can lead to failure (Glass 1999.) Ethical behavior is necessary to avoid failure, and at Microsoft there was also an extremely strong work ethic. Entrepreneurs in general have very long work hours. Gates could have been unethical in allowing software piracy in China just to increase dependency on Microsoft products. In addition, the anti-trust case against Microsoft displays the monopolistic role the corporation has been playing with regard to competitors. It may boil down to Gates' approach to work: is it for the work itself, that is, genuinely motivating, or is it to earn money. Both perspectives were offered in this thesis. The personal computer may have been the prime motivator to begin with, but with all the success at Microsoft, money may have replaced it. In the interviews, the importance of integrity was reflected in some cases.

It was asked whether successful leaders of ICT firms are typically people- or task-oriented, or both, or even neither. Gates was very task-oriented. Boasson was both. The leaders of the four Swedish ICT firms seemed to be quite people-oriented, but also to have some task-orientation. At Enator, the style was dominated by focusing on the people. Regarding the leaders interviewed in Norway, they had mixed approaches. Thus successful leaders of ICT firms can have both styles in various combinations. Do successful leaders of ICT firms have a higher need for power than their employees, it was asked. This was not investigated in the cases; based on McClelland (Andersen 1995) it seems likely. Which of the four frames of leadership - structural, human resources, political, and symbolic - applies the best to leadership in ICT companies, if one can generalize? The human resources and symbolic frames apply the closest, as they center on trust and playfulness. And what is the role of administration in successful ICT companies - does it create a

lot of overhead, or is it minimized? At Microsoft, administrative costs are minimized while still maintaining a meritocracy rewarding the most successful employees for their additional accomplishments and demanding extra work from employees which cause unacceptable bugs. The topic of administration was not a major issue in the other ICT cases.

On whether the high performance view of organizational structuring and leadership is the most prevalent in ICT firms, it is clearly yes compared to the pyramid and railroad views. Since Microsoft has fifteen leadership levels, one could say that there is a pyramid structure there. However, the topic of empowerment dominates the picture so much that the pyramid view is not in the foreground there. Does leadership in successful ICT firms exercise outstanding leadership at the expense of technocratic, administrative, and human relations leadership? There is clearly not much administrative leadership in successful ICT firms, and not much technocratic either. Outstanding and human relations leadership dominates in ICT firms. The correspondence to these in the model are playfulness and trust, respectively.

On which leadership patterns emerge in successful ICT firms, in unsuccessful ICT firms, and in successful non-ICT companies, the case for the former has been described as one of trust, motivation, playfulness and intelligence. Unsuccessful ICT firms had leadership with relatively unethical behavior, too little market intelligence, or mergers with incompatible cultures. Successful non-ICT companies had different leadership patterns. ServiceMaster and Imperial Chemical Industries have the approaches of honoring God and including all employees, respectively. Iacocca had power and authority and was good at communicating. The successful Norwegian export companies were customer-focused, analytic, ethical and competitive. Thus the themes of a customer focus and an ethical approach can be taken to concern both successful ICT and non-ICT firms.

7.2 Concluding Remarks

At the beginning of chapter two, leadership in this thesis was defined as potential to lead, guide and inspire. Having gone through the thesis, what new meanings does leadership attain? The potential to lead can be reflected in intelligence; the potential to guide can be manifested in trust; and the potential to inspire can be considered in terms of playfulness and motivation. As this thesis focuses on leadership in ICT firms, the meaning of leadership which emerges at the end of this thesis is attuned to the particular needs of ICT firms.

The main research question was what is the role of leadership in ICT companies? Leadership plays a key role in ICT companies, but not in terms of being a hard ruler, rather one dealing with “soft” aspects such as motivating employees to do their best and to stay in that company. Another aspect involved is building and maintaining trust, where trust is nearly the same thing as empowerment. In knowledge-intensive environments such as the ICT ones, it is important to make the employees use the knowledge they actually have, and in order to do that they must be trusted and empowered. However, it was said by one interviewee that there can at times be too much empowerment, such as when the task to be done becomes a personal matter. Creativity and playfulness are additional abilities of leaders in ICT firms that can lead to great results; however, this does not include “creative number counting,” as one interviewed leader said. In addition to

The eight inner dimensions of leadership are ordered by opposites; for example, trust is opposite to power. These opposite dimensions are in a dialectical push-and-pull relationship so that more of one dimension means less of the other. In ICT firms, the leadership qualities of trust, motivation, playfulness and intelligence are the most important. This has been shown in the analysis and discussion. Non-ICT firms to a larger extent use all dimensions in their leadership to a more equal degree. Some variables are not included, such as communication, which can be described in terms of trust. Sociability also draws upon trust, and is also covered by playfulness. Faith and confidence are factors which are too similar to the dimension of trust to merit own dimensions in this model.

The introduction focused on uncertainty and complexity, and the key research question was to understand how leaders in ICT firms deal with complexity and uncertainty. This has been answered in section 6.1.1 and can be summarized as stating that while leaders in general have the largest pain and gain, leaders of ICT firms have the largest uncertainty and complexity. Faith and trust in the company as well as confidence in one's ability to perform are important preconditions to dealing with uncertainty. A practical implication of dealing with uncertainty is to give projects varying amounts of buffer times for completion, according to differential expectations, as was done in Microsoft.

Gates also dealt with uncertainty by closely aligning programming with testing. Thus also in other programming environments, programming and testing should be held closely together, with the testing ideally being done the same day each minor part of the program is completed. Thus leaders need to install procedures which reward error-free program pieces and slightly punish the creation of noticed bugs. The waterfall approach, with its separation between programming and testing, is not recommended. Gates also reduced uncertainty by basing the phases of the project on the features of the program to be developed. Thus another reason for avoiding the waterfall approach is to replace its distinction between phases to between features. With Gates' approach, one can be certain that the program is sufficiently error-free thus far and that into the project, a number of features have already been developed. Thus leaders also need to organize projects, buffer times and timelines according to estimations and expectations based on what the program is to do first, then next, and so on instead of focusing on separate specification, design, programming, and testing phases.

At Microsoft, complexity was amongst others avoided by dealing with the most important features of a problem first. In this way, the details contributing to complexity are left to the end. Well into a project, one can have a larger momentum for dealing with them or can avoid them because new market intelligence might suggest that they are not so relevant to customers after all. This approach is recommended for other software development; the features should be assigned different priorities and programmed/tested according to the various priorities. Gates also avoided complexity by reducing the detailed documentation for the various programs to comments in the code. It may be good advice to reduce documentation to comments, but if this is done, the comments must be understandable. The idea of documentation is to make programs translucent to programmers who change it after a longer period of time, where there is a larger knowledge gap between the initial and the later programmers. At Microsoft, the knowledge gap is significantly

reduced, since all belong to the same corporation; share the same standard for writing comments; and so on. Under normal circumstances, it may be advisable to use separate documentation, as this bridges the knowledge gap. The case of Microsoft illustrates that this is not necessary in cases where this gap is small. Managing this gap effectively is the task of the leader.

7.3 Topics for Further Research

This thesis is limited in that the sample of cases studied is small, mainly secondary data is used and the interviews are few and only done at one point in time for each firm. Also, during interviewing I based myself on hand-writing notes of the responses, which diverted attention away from more subtle data such as the body language of the interviewees. The questions were also fixed from the outset, and this limited the range of information accessed during interviewing. In some cases several questions needed clarification. I even attained a suggestion for better questions from one interviewee, but this was in the last interview conducted and the implication of this suggestion was not explored in further interviews. The suggestion was to split most of the questions into two separate questions, one relating to ICT and the other to non-ICT firms. As can be seen in Appendix 1, only one question in the original interviews relates to this difference. Further studies could exploit the suggestion and ask questions about differences between ICT and non-ICT firms, both with regard to the four key factors and other issues which might appear interesting. For example, one could differentiate between ICT and non-ICT companies with regard to complexity and uncertainty in further interviews.

It was difficult to use the quantitative study by Solberg on the 114 Norwegian export companies, as this research was not within the interpretivist tradition. However, the critical variables which Solberg identified were presented. Compared to the successful ICT cases, which could be summarized by the four variables and the addition of the necessity of an ethical approach, the export companies were harder to summarize. This might also be due to the large number of firms studied by Solberg. A large number of firms can be a strength, but a very large data base also contributes to making the approach more quantitative. The strength of the interpretivist approach is its consideration of qualities and there was a slight “culture crash” in introducing Solberg’s study. Further research might attempt to more firmly base itself on a purely interpretivist approach, to a larger extent avoiding to draw upon positivistic literature.

The thesis focuses on leadership and thus I did not attempt to access the knowledge of followers by interviewing them. It is necessary to focus the research question, but this must not preclude asking how or to what extent data from followers might have shed additional light on the topic. Further research may look more closely into the relation between leaders’ and followers’ views and experiences with regard to important topics in ICT firms, in particular trust, motivation, playfulness and intelligence.

Which rich insights and implications emerge in this thesis? The model itself is the richest insight, and the concluding remarks on implications for information systems and leadership in ICT firms confirm that some important implications have been found. Further research could look into how or how much the model can summarize important characteristics of ICT firms, taking other firms as a way to explore these issues. Further research could also look at the relationship between

programming and testing and whether one should always place these two activities in close temporal contiguity when developing software. It could be that there are relevant moderator (mediating) variables which influence when it is more or less suitable to conjoin programming and testing.

Leadership is also a process and should not be seen in a static way. Leadership both in ICT and non-ICT firms varies across situations. Uncertainty and complexity are dealt with in different ways in various settings, which also differ across time. For example, during the tradition of technocratic leadership, uncertainty was dealt with in terms of how to exploit the employees to a larger extent, whilst now it is done by estimating which actions will exploit the customers' wallets to a larger extent. Leadership goes through both high and low times, and one will expect leadership styles to change. Further analysis of leadership in ICT firms through additional studies is needed.

The interviews lend considerable support to the factors of motivation and trust but more moderate support to creativity. Further research into playfulness could attempt to use that word instead of creativity when asking interviewees about it, and see which results arise from that. The interviews were conducted in Norway, and most of the firms are located in Norway, but one of the firms was a UK division of a company based in India. Playfulness may fit better into US companies than companies in other nations, since the US provides the most competitive and win-or-lose culture. "Playing the game" is a cultural tendency most pronounced in the United States. Perhaps playfulness was more important in Microsoft due to this cultural difference. The role of playfulness in leadership of successful ICT companies is an important topic, and the cultural differences are not studied enough in this thesis. Further research could compare various cultures with regard to playfulness.

Another question is the relationship of religion to national success. The protestant work ethic is a particular topic in mind. The Bible is also popular reading among business leaders (Skre 2002.) It would be an interesting research question to ask to what extent the New Testament and Christianity have contributed to economic success in the West. Not having to believe in the harshness of the Old Testament or in Islam, instead, in the safety of God's loyalty, assures that there is a plan B. If something goes wrong, it will still end well (Banks 2000, p. 17.) It is here interesting to note that current US President Bush feels he has a life mission ordained from God, to fight evil in the world. Before the September 11 attacks his faith in God had let him escape alcoholism and motivated him in the direction of becoming President (Carver 2003.) Since trust is self-fulfilling, a religion that generates it may lead to economic returns. However, one might argue that one can only perpetuate trust to the extent one has it from beforehand, as in one's first year of life. If one does not have trust to begin with, one can not get more of it either (Sørhaug 1996.) This might question the view that religion can generate trust. Contrary to the New Testament bringing success, Jews have had a lot of success, too, and their religion is based on the Old Testament. On the other hand, they are "God's chosen people" (Paulsrud 2002) which may give encouragement. Also, their religious duties are so hard to do that they are virtually impossible to practice perfectly (ibid.,) which might inspire to do hard work elsewhere, too. A study of religion and accomplishment must also open its perspective to successful Asian countries

and the religions present there, in particular Japan. It is a drawback of the Norwegian compulsory university entry courses that they only focus on the philosophy of the West, not the East.

The aspect of gender is also relevant. All leaders studied in this thesis except one interviewee are males. This is probably no coincidence, but why is there such a strong tradition for males and leadership in general? Is it an implication and practice of patriarchy, or which other psychological factors determine it? In particular, in the ICT sector the percentage of male leaders might be even higher than in other sectors, because ICT is dominated so much by males anyway. For example, at Microsoft in 2002, nearly three quarters of the employees were males. Which factors underlie these tendencies? A study of these odd tendencies would provide a more holistic picture of leadership in ICT firms.

In addition, a further study of leadership could focus more on behavior and processes of leadership than has been done in this thesis. The thesis mainly emphasizes abilities of successful leaders of ICT firms, and this could be complemented with a closer look at what particular leaders in fact do. Some light has been shed on this in the Microsoft case, but it has not been as large a focus as the focus on traits. However, it can be argued that trust, motivation, playfulness and intelligence are not entirely traits. Trust can be considered as a behavioral process; motivation inevitably varies from time to time and across situations, and is a process amidst a host of other variables. Playfulness is a trait, but certain situations are more conducive of it than others, such as having encouraging parents, and all traits feed into behavior. The picture of the unity of traits and behavior (as external and internal relativity mentioned earlier) has not been implicitly spelled out enough, only explicitly.

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APPENDIX 1

Here follows the series of questions asked in each of the five interviews. The first eight questions are from Barkstedt and Borgman (2000, appendix 1.) In questions 13 and 14, creativity is used instead of playfulness because it was assumed that the concept of playfulness would necessitate explanation.

- 1) Do you want to remain anonymous?
- 2) What is your background?
- 3) How much profits has your company made in recent years?
- 4) What signifies a good leader? Which personality traits should a good leader have?
- 5) How would you describe your leadership style?
- 6) How did the company's environment and competing companies influence your leadership?
- 7) How did the employees' competence and personality influence your leadership?
- 8) What distinguishes ICT-leadership from other leadership?
- 9) How is the leader's level of motivation relevant for success?
- 10) How is the employees' level of motivation relevant for success?
- 11) How is the leader's trust to the employees relevant for success?
- 12) How is the employee's trust to the leader relevant for success?
- 13) How is the leader's creativity relevant for success?
- 14) How is the employee's creativity relevant for success?
- 15) How is having a vision or mission relevant for success?
- 16) How is letting the employees make decisions by themselves relevant for success?