

A systemic perspective of a customer relationship management solution for businesses

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by

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Study leaders:

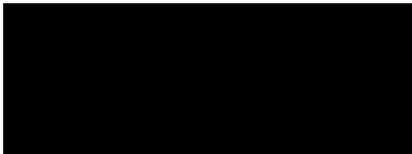
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April 2006

Declaration

Hereby I, Sebastian Bosse, declare that this dissertation is my own original work and that all sources have been accurately reported and acknowledged, and that this document has not previously in its entirety or in part been submitted at any other university in order to obtain an academic qualification.



Sebastian Bosse

30 January 2006

Abstract

Customer Relationship Management (CRM) is not a new topic, but the advent of technology based CRM solutions has enabled companies to deal better on an individual level and more efficiently with their large customer base. Seeing the benefits of this competitive advantage many companies have implemented a CRM solution but with the result that many of them have failed to be successful. The problem is that these companies often do not know why they were not successful and other companies will make the same mistakes if these failures are not recognized.

There is a great deal of literature and research analysing this phenomenon but they all focus mainly on detailed CRM issues and how they could be performed better. They do not take into account that CRM is a complex topic and that many reasons for failure interact with each other. Based on the need of many companies to implement CRM, the goal of this research is to provide a CRM insight perspective and a strategy to implement CRM more successfully.

In contrast to existing CRM research, this study investigates twenty-one reasons for CRM failure in three knowledge areas and explains why each one could threaten the success of a CRM implementation. The first area determines the danger of every risk based on the likelihood of appearance and its potential to fail the complete CRM solution. The second area identifies when these risks are most likely to appear for the first time during a CRM project life cycle. The third area examines all relationships between the twenty-one CRM risks and how they influence each other.

It is concluded that every CRM implementation approach will fail to be successful when problems are only addressed once they become visible. It is not possible to solve every CRM problem at the moment it appears. Many issues during the implementation of CRM have to be met before they become a problem because they influence each other and lead to barriers that could result in a complete CRM failure.

Based on this perception and the research findings, which included 106 of the top 500 companies worldwide, this study develops a CRM strategy framework including a systemic CRM perspective for businesses.

Opsomming

Klante-verhoudingsbestuur (CRM) is nie 'n nuwe onderwerp nie, maar aangaande tegnologie gedrewe CRM oplossings beskikbaar geraak het, is ondernemings in staat gestel om meer doeltreffend op beide individuele- en groepsvlak met klante te werk. Soos ondernemings die mededingende voordeel van hierdie benadering gesien het, het hulle dit aangegryp, maar nie almal was suksesvol hiermee nie. Die probleem is dat ondernemings nie altyd weet hoekom hulle nie suksesvol is nie en ander ondernemings gaan voort om dieselfde foute te maak.

Daar is alreeds heelwat literatuur en navorsing beskikbaar oor spesifieke aspekte van CRM wat tot mislukking kan lei en baie indikasies word voorgestel hoe dit aangespreek kan word. Dit neem egter nie in ag dat CRM 'n komplekse onderwerp is nie en ook nie die feit dat faktore wat tot mislukking kan lei onderling met mekaar te doen het nie. Gebaseer op die behoefte wat baie ondernemings het om CRM suksesvol te implementeer, het hierdie navorsing ten doel om 'n geïntegreerde CRM perspektief te gee sowel as 'n strategie wat tot sukses kan lei.

In kontras met huidige CRM navorsing, ondersoek hierdie navorsing een-en-twintig redes, in drie kennisareas, hoekom CRM implementerings dikwels faal en bepaal hoe elkeen tot totale mislukking kan bydra. Die eerste area bepaal die gevaar van elke risiko gebaseer op die waarskynlikheid dat dit wel sal voorkom en die totale CRM oplossing kan laat faal. Die tweede area identifiseer wanneer risikos waarskynlik sal voorkom vir die eerste keer tydens 'n CRM projek lewenssiklus. Die derde area ontleed alle verhoudings tussen die een-en-twintig risikos en hoe hulle mekaar beïnvloed.

Daar word tot die gevolgtrekking gekom dat enige CRM benadering sal faal indien probleme eers aangespreek word wanneer dit sigbaar raak. Dit is nie moontlik om elke probleem op te los die oomblik wanneer die sigbaar raak nie. Baie faktore wat voorkom tydens die implementering van CRM moet aangespreek word voordat dit later 'n probleem raak aangesien faktore mekaar beïnvloed en lei tot struikelblokke wat tot mislukking kan lei.

Gebaseer op hierdie vertrekpunt, sowel as die navorsingsresultate wat 106 van die 500 grootste maatskappye in die wêreld insluit, word 'n CRM strategie voorgestel wat 'n sistemiese perspektief van CRM vir ondernemings voorstel.

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CHAPTER 1

Research problem and its setting

1.1 Introduction

Customers expect good service and fair treatment of the businesses they deal with. Most of them reward a company, based on their experience, with a continuous spending behaviour. Since these are the revenues of a firm, they are the basis of its existence. Therefore, businesses are willing to invest in everything which can improve these relationships to their customers.

Customer Relationship Management (CRM) is not a new topic¹, but new technologies enable large companies to become more customer oriented, because they have faster access to the data of their clients. CRM is becoming more important since globalisation makes the markets more competitive. However, the new CRM advance, based on this technology is not just software that when implemented guarantees growth of sales and revenues. Instead, CRM is a comprehensive approach, which provides seamless integration of every area of business that touches the customer. It is a business philosophy focusing on the customers, backed up by people, business processes and technology (Koerner, 1999). A Customer Relationship Management system consists of three single words, representing one concept.

- **Customer:** Most of today's businesses have realized that a change in dealing with their customers is needed. The times when a company knew all customers individually including their life history, earnings and future plans are over. The customer's buying behaviour has changed and the small stores "around the corner" that have personal relationships between the owner and the consumers are getting fewer and fewer. As the companies get larger and more complex, they become more inward looking as they try to cope with their internal issues. Often, the customers are neglected. With CRM, one goal is to make the individual customer become more important at an acceptable cost to the company.

¹ Appendix 1: Perfect CRM – A CRM story without technology.

- **Relationship:** Without the CRM technology it is nearly impossible for large enterprises to build, form and keep relationships with their customers. Businesses with a large client base were often unable to access the right information at the right time. Therefore, many companies view the implementation of a CRM system as an opportunity to serve their customers more individually and increase their earnings potential at the same time.
- **Management:** Companies are trying to expand their consumer bases and focus on keeping and growing their best customers. Since the costs of retaining customers are significantly lower than those of acquiring new ones, it is essential to manage customers and customer relationships. This is thus an incentive for business to control the relationship with their customers actively to create loyalty.

Seeing this competitive advantage, many firms are investing in new CRM solutions. Despite the fact that a recessionary economy is slowing down the growth of the CRM market currently, it is expected that CRM will have a compound annual growth rate of up to 19.9%. The projected global spending on CRM is estimated to increase from USD 13.45 billion to USD 27.76 billion with total anticipated CRM revenues more than doubling from USD 7.46 billion to USD 17.57 billion in the next five years (Pombriant & Bishop, 2002). It is also estimated that the CRM implementation market will grow to \$31 billion in 2007 (Ovum, 2002).

Especially the CRM software segment for small and medium sized businesses is expected to increase worldwide from \$1.72 billion in 2003 to \$2.9 billion in 2008, with a compound annual growth rate of 11.1%, compared with a 2.4% decrease in the large business segment (Close, et al., 2004)^{2, 3, 4}.

1.2 Relevance of this study

With all the hype about CRM, different researchers estimate that between 30% and 80% of all CRM projects fail to meet customer expectations (Nelson, 2002). These results vary depending on how the research analysts measure failure. These measurements are

² Appendix 2: Customer management total revenue forecast, share and growth rate by revenue type, 2003- 2008.

³ Appendix 3: Customer management total revenue forecast, share and growth rate by application segment, 2003- 2008

⁴ Appendix 4: Customer management license revenue and share by vertical industry, 2002–2003

often arbitrary depending on the initiator. The following two examples demonstrate a conflict of options of many people dealing with CRM troubles:

- Analysts said it would be easy to blame the software providers for the failure rates, but there is plenty of blame to go around. Companies are spending money on CRM software without thinking about their own business processes (Dignan, 2002).
- CRM projects are often more difficult than originally expected. And as with Enterprise Resource Planning (ERP) implementations, implementing a CRM system does not differentiate a company or make it more competitive. It is a company's CRM strategy and how this is implemented that drives a company's competitiveness (Bruyns, 2001).

Consequently, most CRM implementations are very risky because often the responsible CRM managers do not have enough information to be prepared for all failure opportunities. This issue can be critical not only to the CRM success, but even to the complete business future, having in mind that CRM is an ongoing process with major impact on all business departments with high financial and personnel effort.

Therefore, it is important to get an objective perspective to understand the reasons why so many customers are not pleased with their CRM solutions. It is less important how many CRM projects fail; it is more essential to know how to avoid a failure.

Since CRM implementations have a high priority in most companies, this problem will be addressed in order to deliver a successful strategy.

1.3 Research problem

The specific research problem that will be investigated in this study concentrates on the contradiction that the main problems for the failure of a CRM project are not always visible. Many reasons for failure appear but the main explanation for breakdown is often unknown⁵. CRM is such a complex topic that the interaction processes of many reasons for failure are not predictable.

⁵ I started my career as a CRM application consultant and witnessed many CRM implementations that were technical perfect but the customer considered the complete CRM solution as a failure. These different perceptions of success and failure were the reason to undertake this research.

The goal of this research will be to analyse all major reasons for failure as well as the interaction of these problems. This knowledge will be used to create a framework including a timeline that leads to a successful CRM system. For this purpose two postulations will be investigated in this study.

1. The first one states that every CRM implementation approach will fail when problems are only addressed when they become visible. This indicates that it is not possible to solve every problem separately when it appears. Many issues during the implementation of CRM have to be met before they become a problem because they could lead to barriers that could result in a complete CRM failure.
2. The second postulation is based on the first postulation and states that it is possible to develop a winning strategy to a successful CRM implementation knowing the following information:
 - How threatening to a CRM project is every single problem by itself?
 - When does each problem appear during a CRM implementation?
 - What is the probability that a certain problem will appear at all?
 - How strong are CRM problems related with each other?

These four influencing factors are illustrated in Figure 1.1.

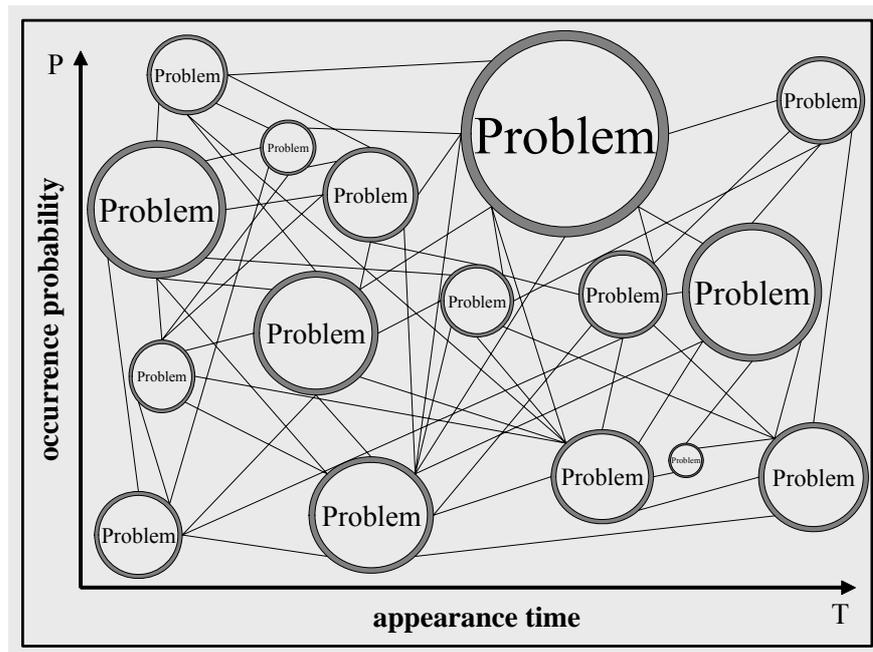


Figure 1.1: Influencing CRM factors

The size of the circle symbolises the possible impact of one problem towards the complete CRM solution. The T-axis demonstrates when a problem can appear for the first time during a CRM implementation. The P-axis shows the probability of occurrence for every single problem and the connection lines between the different problems show the correlation of different reasons for failure.

1.4 Research methodology

This study includes three consecutive phases of research. The first phase collects information to provide a basis for a questionnaire, which will be applied in the second phase. The purpose of the third phase is to validate the outcomes of the questionnaire. Figure 1.2 summarises the research methodology of the study.

Phase 1 includes the following three ways to collect input to get an understanding of different problems that could cause a CRM solution to fail:

- Personal interviews with CRM managers, project team members and end users.
- Case studies of different companies that implemented CRM.
- A literature review of books, magazines, newspapers, Internet and research reports.

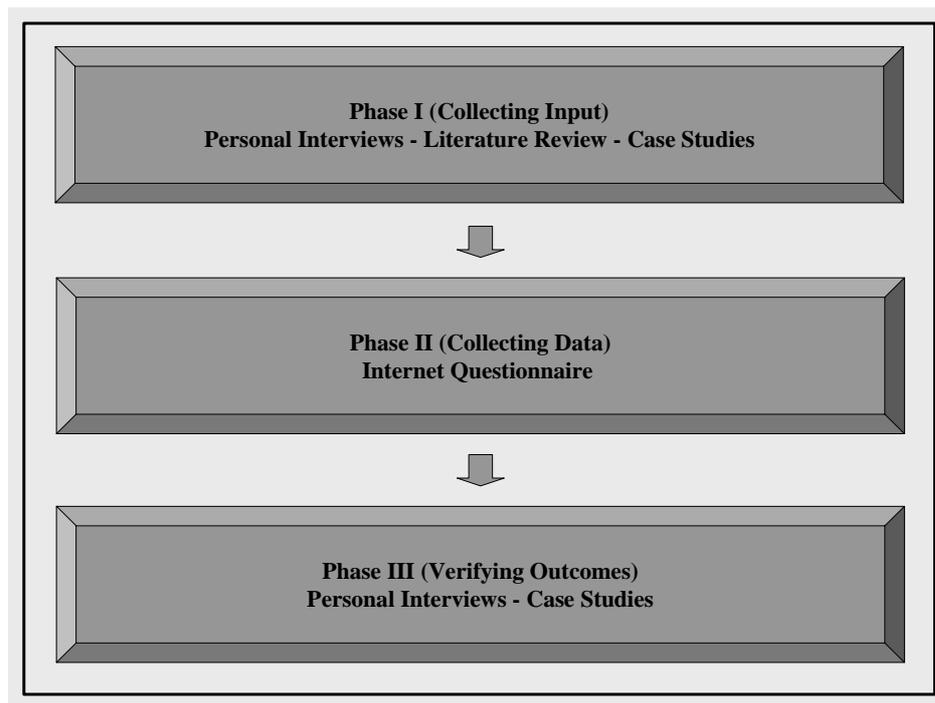


Figure 1.2: Research methodology

Phase 2 will be an online survey to collect data that is based on the findings of the previous phase. The goal will be to get information on how negative a certain problem can be to a CRM solution, in what timely order it appears and how it is influenced by others.

The target group of this survey is the "Global Fortune 500 companies" of the year 2003⁶. The e-mail addresses will be taken from the companies' WebPages. These companies will be asked via e-mail to let a CRM expert fill out an online questionnaire on the Webpage "www.crm-success.net". As a reward the interviewees who filled out the survey completely, will receive the results via e-mail.

Phase 3 will double-check the outcomes of the survey. This time the interviewees will not be asked to give input, instead they will be confronted with the results of the research to find out if they can relate to the outcomes. In addition, case studies will be done at companies that implemented CRM to round off the new findings.

The interview partners were randomly selected from consultants, partners and customers. The case studies were randomly selected from literature.

⁶ Appendix 5: The complete list of the target group "Global Fortune 500 companies".

1.5 Delimitations and assumptions

It was decided to restrict this study to the top 500 companies worldwide to ensure a high affinity towards CRM. This does not mean that the methodology followed in this study does not apply to smaller companies, but they were not included in the research.

The study is conducted from a company point of view. Only their interests were considered in ensuring a successful CRM implementation. Other perspectives from customers, suppliers, software vendors or consulting companies were only taken into account to analyse how they influence the company's viewpoint.

This study was not restricted to any specific CRM vendor, since it does not focus on detailed technical problems. The decision to choose the right vendor is very important but it varies from company to company. Therefore it is handled as one of many possible CRM problems.

Industry specific CRM issues are also not part of this study. There are many industries that have special requirements for a CRM solution, but they are not part of this research. However, the results of this research will provide a good foundation for adding industry specific problems.

It has been assumed that the top 500 companies worldwide are too large to know all customers and contact persons without the help of a software based CRM solution. Therefore they have a strong need to have a working CRM system in place supported by CRM technology.

1.6 Structure of this research

Chapter 2 gives a number of general success definitions and more specifically CRM success definitions. The purpose is to construct one single definition for this research to determine when CRM is successful and when is it a failure.

Chapter 3 presents a list of potential reasons for CRM failure. The purpose of this chapter is to create awareness that there are many different problems that could lead even well prepared CRM implementation approaches to a disaster. In addition these reasons for failure will be used as foundation for further research.

Chapter 4 introduces a questionnaire that was set up in the Internet. Different CRM risks will be investigated focussing on their danger potential to a CRM project. The goal is to deliver new research findings on participants' project set up and on their dependencies among each other. These outcomes will be presented at this point with no interpretation in order to give an overview of the results. The findings will be analysed in the next chapter.

Chapter 5 will give a systemic perspective of a customer relationship management solution for businesses based on the analyses and interpretation of research findings. This chapter is structured in two parts. The first one focuses on the complex structure of a CRM project; it determines how risks behave in isolation and in combination depending on each other. It will be shown how these dependencies could change the perspective of a successful CRM solution. The second part evaluates every CRM risk in detail and provides an approach to a solution for every potential problem.

Chapter 6 is the conclusion of this research. It provides a summary, findings and recommendations.

1.7 Conclusion

This chapter defines the meaning of CRM and explains the high failure potential of CRM implementations, which shows the relevance of this study.

In order to find a solution for this risk the chapter outlined the research problem and a methodology to deliver a systemic perspective of a CRM solution for businesses. In addition the structure of this research was presented based on the delimitations and assumptions.

CHAPTER 2

CRM success: Definitions

2.1 Introduction

Different success definitions (Success quotes, 2005):

The line between failure and success is so fine that we scarcely know when we pass it: so fine that we are often on the line and do not know it (Elbert Hubbard).

Failure is success if we learn from it (Malcolm S. Forbes).

Develop success from failures. Discouragement and failure are two of the surest stepping stones to success (Dale Carnegie).

Success is going from failure to failure without a loss of enthusiasm (Sir Winston Churchill).

If A equals success, then the formula is: $A = X + Y + Z$, X is work. Y is play. Z is keep your mouth shut (Albert Einstein).

The definition of success varies depending on the person who is defining it. The same happens with the definition of CRM success.

What is CRM success and how does a business know that they have achieved it? One of the most difficult parts of launching a CRM program is defining success metrics (Dyche, 2001). Every business faces this question at one point during their CRM implementation. However, there is no clarity on this issue. The reply is different from user to user, from vendor to vendor, from consultant to consultant. In addition, the answer differs depending on the department and the role of everybody involved.

This ambiguity creates an obstacle for clear standards to define the success criteria of a CRM solution. The result is that only 16% of companies who implemented CRM can say that they succeeded and that their business performance is measurably influenced by

CRM (Johnson, 2003). Figure 2.1 shows that only 12% fail to go live but 72% go live without knowing if they will ever be successful.

On the other hand, there are many proven cases of positive return on investments (ROI) with more than a 95% success rate (Meltzer, 2002). In case these facts are true where do the numbers for CRM failures come from? Could it be that the seed planted by a small inexperienced group of consultants has created a storm or is the definition of success and failure at fault?

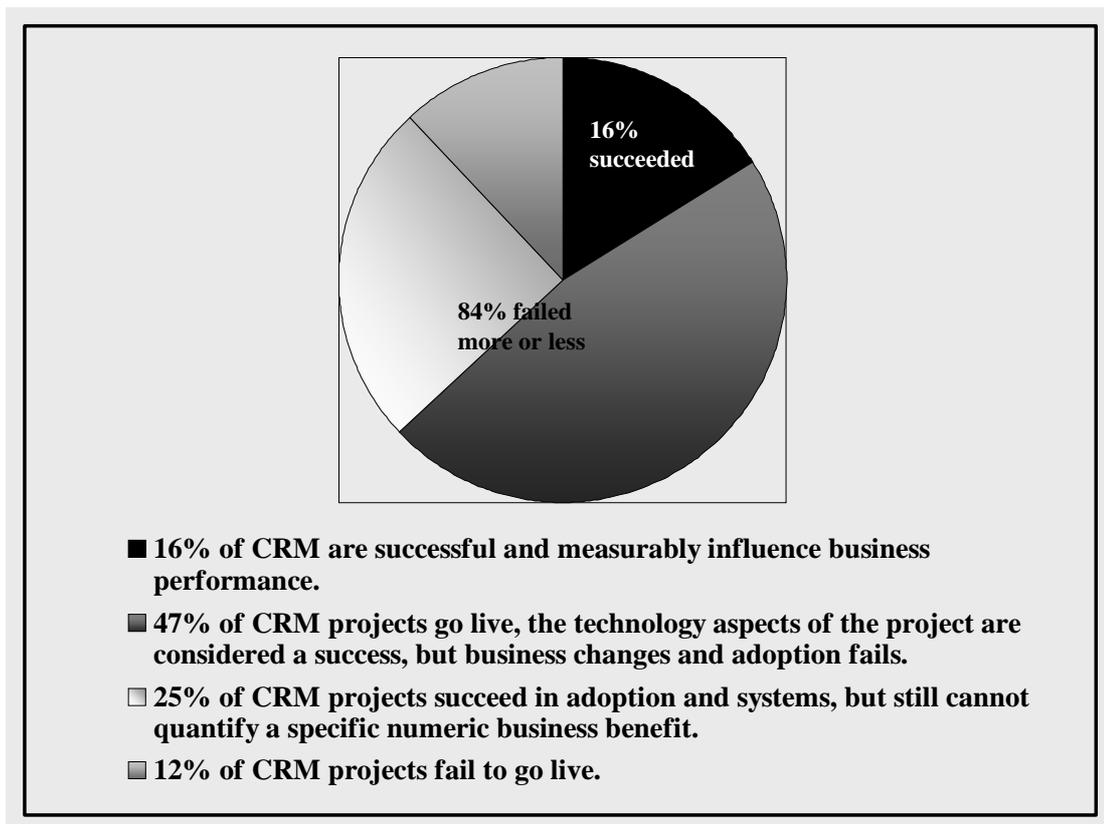


Figure 2.1: Unclear definition of success

Source: (Johnson, 2003)

Therefore, the goal of this chapter is to define when CRM is successful and when is it a failure.

2.2 Ways to measure CRM success

There are different possibilities to evaluate how successful a CRM solution is. Depending on the company's preference and their internal decision making process, diverse success metrics are used. To get a better understanding of CRM success, different ways to measure it are presented.

2.2.1 Customer success

This approach measures economic value delivered to and/or derived from a customer. The following measurement options focus directly on the customer relationship to the company:

2.2.1.1 Customer lifetime value

Customer lifetime value (CLV) can be one measurement to be considered. Lifetime Value is a function of frequency of purchase multiplied by the gross margin multiplied by the duration of brand loyalty (Hackert, 1998).

The value is calculated as the revenues the customer will generate over the life of the relationship to the company minus the variable costs of achieving those sales. These are the costs of goods sold, and the costs to serve. Over the customer's life span, the acquisition costs decline and revenues and margins increase.

$$\text{CLV} = \text{Present Value of future profits from customer in N years}$$

Investing too little on customer acquisition and retention therefore could cause the company to decline in productivity and future worth. Spending too much on customer acquisition and retention wastes capital needlessly without sufficient payback (McAllister, 2004).

Few companies calculate lifetime value, most notably because they do not know how (Patros & McConaghy, 2002). This is the point where CRM can bring a real benefit. The included database in the CRM software tracks all interactions with a customer and this can be analysed with the analytical features of a CRM solution.

2.2.1.2 Customer satisfaction

Customer satisfaction rating can be another measurement. But this leads to the question: When is a customer satisfied? The following definitions show the wide range of possible outcomes (Bleuel, 2001):

1. Customer satisfaction is equivalent to making sure that product and service performance meets customer expectations.
2. Customer satisfaction is the perception of the customer that the outcome of a business transaction is equal to or greater than his/her expectation.

3. Customer satisfaction occurs when the acquisition of products and/or services provides a minimum negative departure from expectations when compared with other acquisitions.
4. Customer satisfaction occurs when the marginal utility of a transaction is equal to or greater than preceding acquisitions.
5. Customer satisfaction occurs when the perception of the reward from the purchase of goods or services by the customer meets or exceeds his/her perceived sacrifice. The perception is a consequence of matching past purchase and consumption experience with the current purchase.

Customer satisfaction is very difficult to measure. This depends on the definition of satisfaction (Robinson, 1997). Many companies capture the data by surveys and not with a CRM system.

2.2.1.3 Customer loyalty

Customer loyalty means that the company understands and anticipates what customers' value about their product or service. It means that the customers recognize that the company interacts with them uniquely. This measurement of loyalty is return on relationship. It reflects a company's level of preparedness to deal with the new CRM dynamics to drive mutual loyalty. Loyalty outcomes are the business practices driven by loyalty conditions, such as whether the customer acquisition costs are going down or whether the company is interacting with customers at the right time to maximize profit (Zingale, 1999).

The first problem about this customer loyalty definition is that most loyal customers defined in the customer loyalty practice are actually not loyal at all (Eisenberg, 2002). Most companies consider customers loyal as long as they do not leave the company. However, are these customers by this definition really loyal to a company? Unfortunately, most loyal customers are not loyal in the sense of the original "loyalty" definition. There are many different definitions about customer loyalty mentioned in the literature (Griffin, 1995):

- The customer has no other choice, because switching to another company is too costly.
- The customer makes a rational evaluation of competing companies and finally decides to stay with his current company.

- The customer buys from other companies at the same time.
- The customer believes his current company provides the best products or services and never considers other companies.

Only the last buying motivation could be called loyal because here is an emotional connection between a customer and the company. CRM can be very helpful to support this emotional connection but it is difficult to say how much loyalty is based on CRM and how much is not.

2.2.1.4 Customer interactions and dynamics

Some companies measure success metrics based on customer interactions. These can be metrics about the CRM system itself, or about specific elements of the sales, marketing and customer service process like account penetration, number of inquiries, number of qualified leads, or the percentage of completely populated profiles in the database. Consumer activities could be sales cycle time, turnaround time on reporting, or the percentage of address updates (Smith, 2001). Other dynamics can include customer acquisition, customer growth and development, customer retention, and customer reactivation. Most of these measures are the goals of many sales, service and marketing efforts (Nykamp, 2001):

- Customer acquisition improvements may relate to increasing the targeting and related response rates or conversion rates of acquisition efforts or acquiring more value or more loyal customers.
- Customer growth and development improvements may relate to increased cross-sell of specific products, increased profitability of sales to existing accounts or improved up sell ratios.
- Customer retention improvements may relate to increased customer satisfaction.
- Customer reactivation improvements may relate to increased performance of any win-back marketing campaigns or direct sales efforts.

All this information can be captured with a CRM system and it can be very useful to analyse the customers. However, this knowledge alone does not allow estimating the success rate of CRM.

2.2.2 Financial success

Many companies are not content with their CRM implementations. They do not have a good understanding of the true value of their CRM system. Companies often do not ask themselves whether they measure the true value of their customers and whether their systems provide them with a basis to do so. They do not know how much the CRM system exactly has cost and how profits and revenues have changed (Thomas, 2003).

There are different methods to measure the success of CRM financially. The most common ones are return on investment (ROI) and total cost of ownership (TCO).

2.2.2.1 Return on investment (ROI)

The return-on-investment model seeks to deliver actual cash benefits to the company. This approach identifies costs savings, provable productivity improvements or well-tested revenue generation opportunities.

During the e-commerce excitement at the end of the last century, many companies neglected to recognize that every investment should at least break even within a calculated timeframe. The investment in new technologies was handled as a strategic expense. Every business wanted to keep the chance to enter new market segments to gain first-mover profits and to stay competitive, but this business view has changed. Today four out of five IT decision makers consider the significance of the return on investment as high or even very high (Nonnast, 2002). The purpose of CRM is to increase profits by increasing sales by more than the CRM costs.

The formula to calculate the return on an investment is $(\text{Profits} \times 100) / (\text{Investment in CRM}) = \text{ROI} (\%)$ (Woehe, 1993).

In theory, this formula seems to be very simple but in practice it is very difficult to use for many companies because it includes a lot of unknown information:

1. The company has to analyse what is considered as an investment. Most investments can be divided into one of three categories (Buttle & Ang, 2002):
 - IT costs (infrastructure, database development, software, etc.).
 - Personnel costs (recruitment, redeployment, training, etc.).
 - Process costs (reengineering of working practises and workflows, etc.).
2. The company has to evaluate what is the return on this investment. Compared to the cost analysis this is the difficult part to measure. The business has to identify

the new profit based on CRM minus the old profit that they would have earned without the use of a CRM solution. Possible returns could be (Hughes, 2003):

- Increased customer retention (less defections each year).
 - Increased visits or orders per customer per year.
 - Increased average spending per order or visit.
 - Increased cross sales – customers buy in more categories.
 - Increased up sales – customers buy higher priced items.
 - Increased reactivation of previous customers.
 - Increased referrals of new customers by existing customers.
 - Doing all of the above while keeping increased costs (required to make them happen) from exceeding the increased sales.
3. The company has to decide what period should be measured. CRM is an investment that is expected to pay off over a period of up to 5 years. Timeframe predictions of analysts vary on a wide range depending on whom they work for.

The ROI formula for CRM projects includes many uncertainties, because it depends, not just on numbers, but also on dealing with politics and people. CRM returns are difficult to quantify. ROI is an accounting concept which likes hard numbers, such as cost savings. It can be a stretch to account for the softer returns, such as increased customer loyalty. A typical CRM investment will yield both types of return. For example, a project to consolidate several call centres could reduce operating costs, system support costs, and yet provide longer opening hours to customers. The consolidation could also enable customers to be served more effectively by staff who have greater knowledge of the customer's needs. While everyone can intuitively buy into these benefits, it is difficult to get to a precise number. Only 25% of enterprises will define the benefits, develop a business case, and measure the benefits of their CRM initiatives (Picarille, 2003). Figure 2.2 illustrates a possible ROI scenario of a CRM solution.

To calculate the future return on a CRM investment it is necessary to predict customer behaviour. This can be a very risky prediction because forecasting the behaviours of unpredictable customers is a very difficult task. Often the ROI of a CRM project pivots on the expectation that the customer will spend 5% more in future, or consume 10% less than before.

Enterprises that focus on delivering functionality that increases effectiveness rather than efficiency will be more successful in business transformation and delivering long-term ROI. Many companies forget in this context that the ROI measurement procedure needs to be an ongoing process during the CRM project (Couper, 2000).

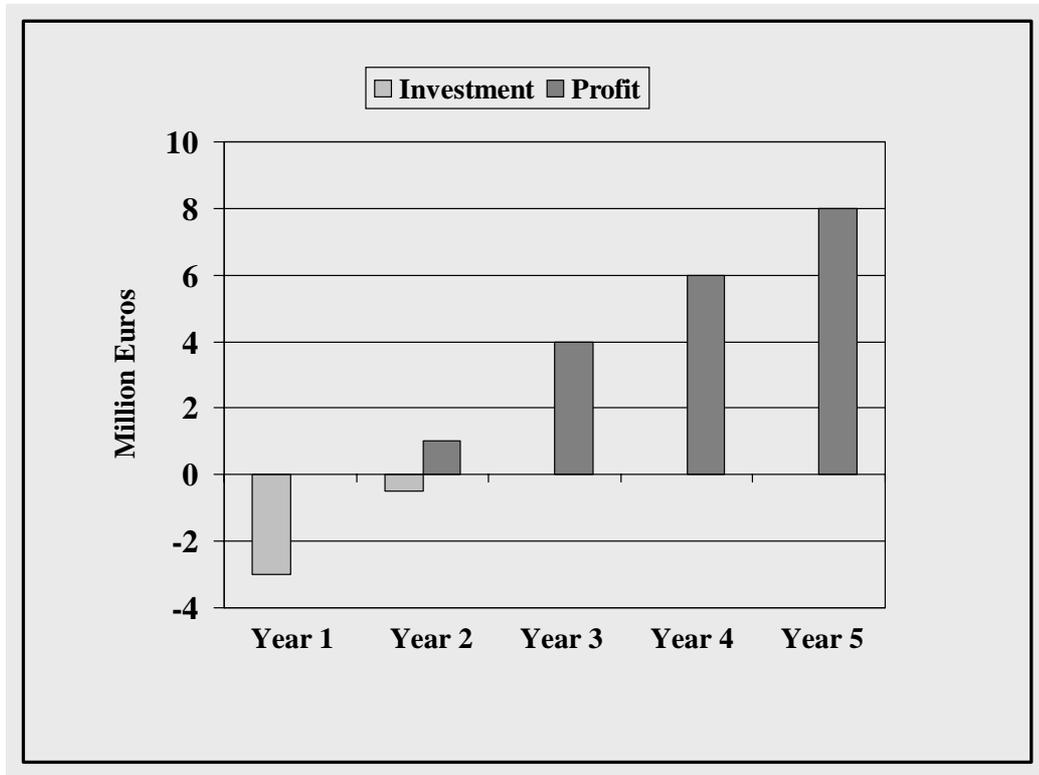


Figure 2.2: ROI example of a CRM solution

2.2.2.2 Total cost of ownership (TCO)

Another approach to ensure long-term success of a CRM solution is to monitor continuous returns based on CRM in comparison to the total cost of ownership. TCO is used to describe not only the costs of purchasing IT products and service but all the hidden costs associated with using it as well. Many businesses forget to calculate the hidden costs of a CRM project (O'Leary, 2001). This includes planning, design, installation, configuration, maintenance and support from both the administrative and technical perspectives.

This is important since a positive ROI can get negative after a while when the hidden costs get bigger. Therefore, a constant focus on ROI and TCO is necessary to ensure long-term success.

Figure 2.3 illustrates these circumstances. Until the date of going live, CRM only generates costs. After that point, costs of running the system, training new employees, adding new features, etc. have to be added. From a financial perspective CRM can be called successful, when the returns of CRM are higher than the TCO.

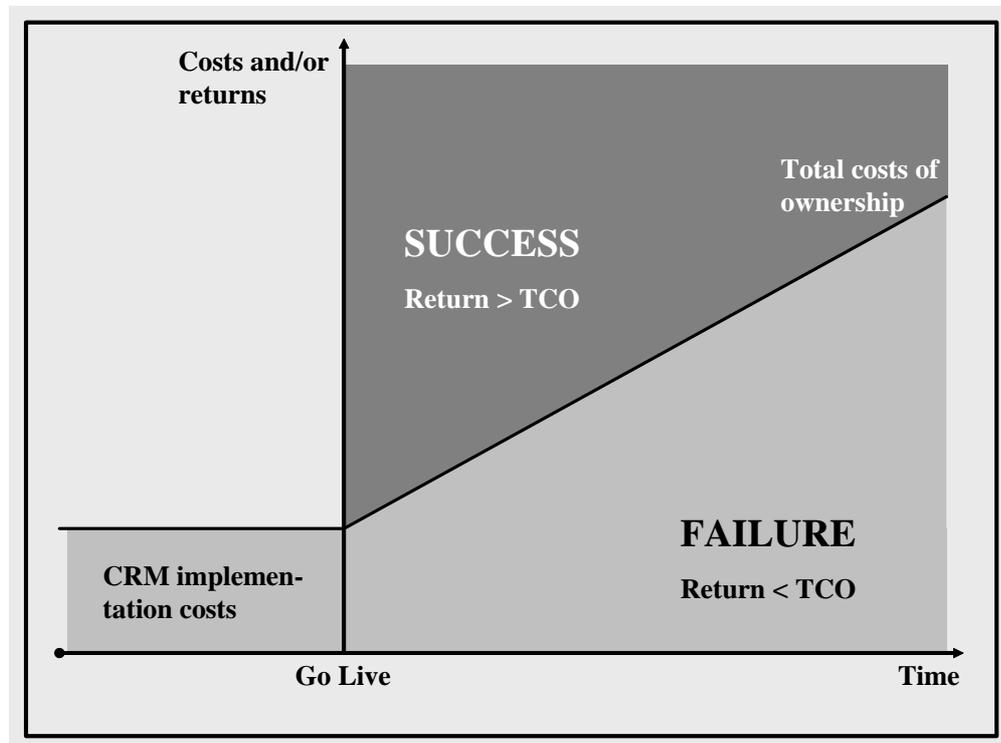


Figure 2.3: Total cost of ownership – success vs. failure

This may sound very simple but only 35% of companies define the total cost of ownership of their CRM initiatives (Forsyth, 2002).

Only a few organisations have sufficient analytical capability to correlate project-level CRM value to overall company performance (Pal, 2002). These problems measuring the financial success become very visible when understanding the following facts (Johnson, 2003; Stock, 2001):

- 25% of CRM projects that succeeded in adoption and systems are not able to quantify a specific numeric business benefit.
- 25% of financial returns from CRM programmes are lost because there is no enterprise wide CRM strategic plan.
- 41,9% of the CRM licenses companies purchased are not being used, the major reason being confusion between calculating benefits and return on investments.

- 45% of enterprises will attempt CRM through technology initiatives alone and will fail to achieve measurable ROI because they fail to address metrics, behaviours and processes.
- 55% of CRM initiatives will fail to meet measurable benefit objectives or positively affect ROI, due to a lack of business processes for conducting ongoing measurements.
- 57% of businesses that have implemented a CRM system do not know whether profitability has gone up or down and 45% do not know whether cross selling has gone up or down.
- 70% of CRM projects will have to be re-evaluated due to project managers overlooking personnel and process issues in favour of solely technological implementations.

These results are very disappointing for any company trying to measure their success financially. As a result, many companies plan to monitor their success of a CRM system, but they are too busy implementing CRM and consequently they neglect any financial success metrics.

2.2.3 Other success factors

In addition to customer and financial measurements, many more factors can indicate the overall success of a CRM solution. The following ones are an overview of alternative ways to capture CRM success.

- **Intangible success** - In this approach, so-called softer benefits or intangible assets are identified and quantified. For example, brand equity or knowledge capital are two forms of intangible assets that companies do try to measure and quantify and correlate to future company performance (Kellen, 2002).
- **Competitive success** - This approach measures how competitors are interacting with customers and decisions are made to either seek parity or exceed a competitor's capabilities (Sabri, 2003).
- **Instinct and experience success** - This approach uses managers' individual experiences and intuitions about what CRM solutions to execute that may or may not be supported by additional facts (Dyche, 2001).

- **Internal success** – This approach focuses on internal diagnostics to provide an immediate and ongoing means of measuring the extent to which the organisation is changing and the internal capabilities are improving, which may be required for archiving any external measures of success (Massey, 2002).

2.3 CRM success definition used in this research

Taking all these different success measurement methods into account it becomes very clear that there are many ways to measure the success of a CRM solution. Depending on the company's definition of success, this can vary on a wide scale. There is no pre-defined list that includes all goals that have to be accomplished in order to call a CRM implementation successful.

Every single criterion can be more or less important to a business. This means that the same performance of a CRM system is in some cases a success and sometimes it is not.

Many companies have no clear definition of a CRM system. In general, the definition of success is the achievement of the company's objective in a reasonable time for a reasonable cost with a minimum of difficulty. This is in contrast to CRM project managers who define the implementation as a success when the software is installed, did not crash and the CRM head still has a job (Rohrbacher, 2001).

In case a business has only one or two success criteria, which are easier to accomplish than ten or more, how can the business be sure that they did not miss something? If a business has more than ten success criteria, how can they be sure that they have chosen the right ones and if one is not accomplished will the complete CRM be a failure? In addition, even if all targets are reached and CRM is considered successful, there is still a big chance that the CRM solution could have been even more successful.

However, all CRM success measurement methods like customer, financial or any other success measurement have one thing in common. They can only be successful under one prerequisite; a good working CRM solution. There cannot be any kind of success if the CRM solution is not effective. A company cannot go live with a non-working CRM system and if they do, failure is pre-determined.

Figure 2.4 demonstrates this relationship. A working and accepted CRM system is the bases for all other success definitions. If it is not possible to measure customer, financial or any other success, the CRM solution is not working. Only once the foundation of a working CRM solution is in place can other success methods be used to determine over-all success.

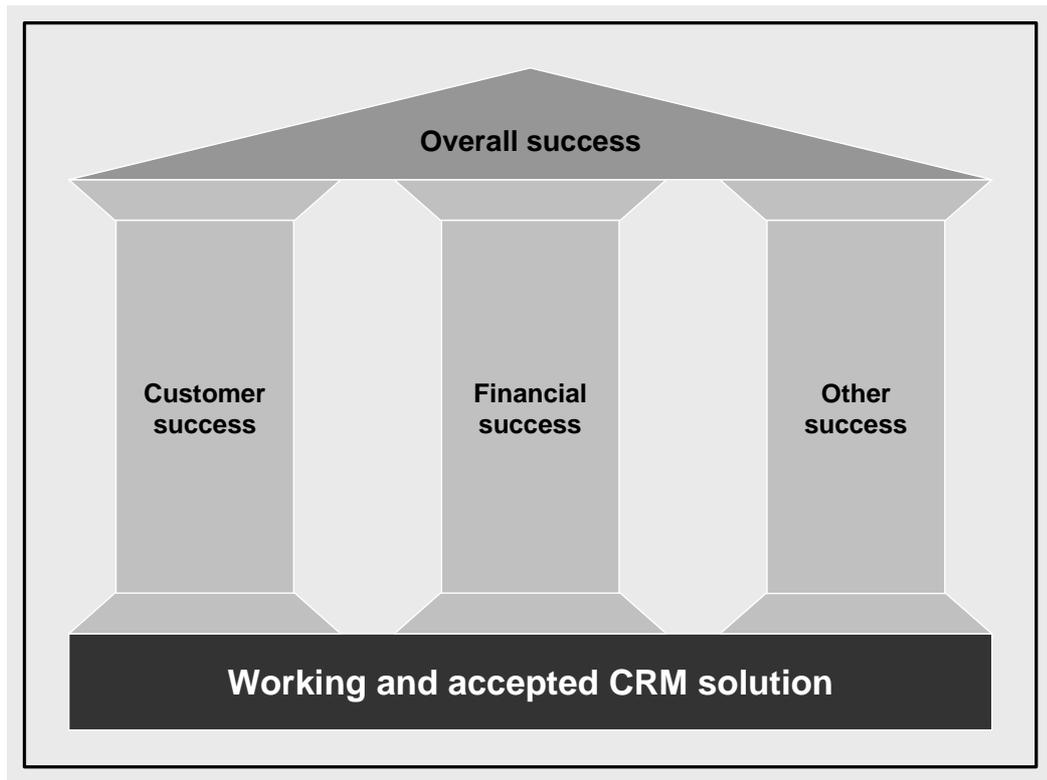


Figure 2.4: Definition of CRM success

Therefore, this study defines CRM as a success when a company has implemented a working CRM solution that is internally accepted. This is the case when all failure risks that could stop the CRM approach can be avoided.

Based on this definition this research will analyse potential risks that could lead to CRM failure. The following postulations will be investigated:

1. Every CRM implementation approach will fail to be successful when problems are only addressed when they become visible. This indicates that it is not possible to solve every problem in isolation when it appears. Many issues during the implementation of CRM have to be met before they become a problem because they include follow up barriers that could lead to a complete CRM failure.
2. Based on the first postulation it is possible to develop a winning strategy for a working and internally acceptable CRM solution knowing the following information:
 - What is the probability that a certain problem will appear during a CRM project?

- How threatening to a CRM project is every single problem by itself?
- When does a problem usually appear during a CRM implementation?
- How strong are CRM problems related with each other?

2.4 Conclusion

This chapter presented different CRM success measurement methods like customer, financial and others. It can be concluded that there is no generally agreed CRM success definition because depending on the company's perception, the definition of CRM success varies. As a result this paper defines CRM as a success when a company has implemented a working CRM solution that is internally acceptable because all CRM success definitions can only be measured when a working CRM system is in place.

The goal of this research is to analyse CRM risks to develop a winning strategy for the implementation of a working CRM solution.

CHAPTER 3

Reasons for CRM failure

3.1 Introduction

This chapter examines previous research on reasons that led to CRM failure. This research contains studies of literature and personal interviews with people who work daily with a CRM system.

The interviewed target group included CRM consultants and CRM key users from different companies. They were randomly selected depending on their CRM involvement and willingness to get interviewed. Around 30 interviews with CRM experts took place during the year 2003 with the purpose to identify different perceptions of "CRM pain points". These were informal, conversational interviews that allowed quick response to individual differences and situational changes. The interview partners were randomly selected from different CRM customers and consulting companies, mostly in Germany and England. Since all these outcomes were very subjective they were verified or dismissed by additional literature studies.

The goal of this chapter is to present a variety of CRM problems and problem areas as well as to demonstrate that they had a negative effect in the past and contain a steady disadvantage for any new project. Each of these problems or problem areas could influence the success of a CRM solution.

To get a better overview of all identified reasons for CRM failure they are divided by their origin of first time appearance into three categories. Figure 3.1 illustrates how these categories are connected.

1. The first one includes issues that have their starting point within the company itself.
2. The second category includes project issues that are faced during the implementation process.
3. The third category includes issues that can have their origin within the business as well as in the project.

The studies of literature and personal interviews identified the following twenty-one reasons for failure to be very critical during any CRM implementation. All reasons are not software or industry specific and are viewed from the company's perspective that purchases a CRM solution.

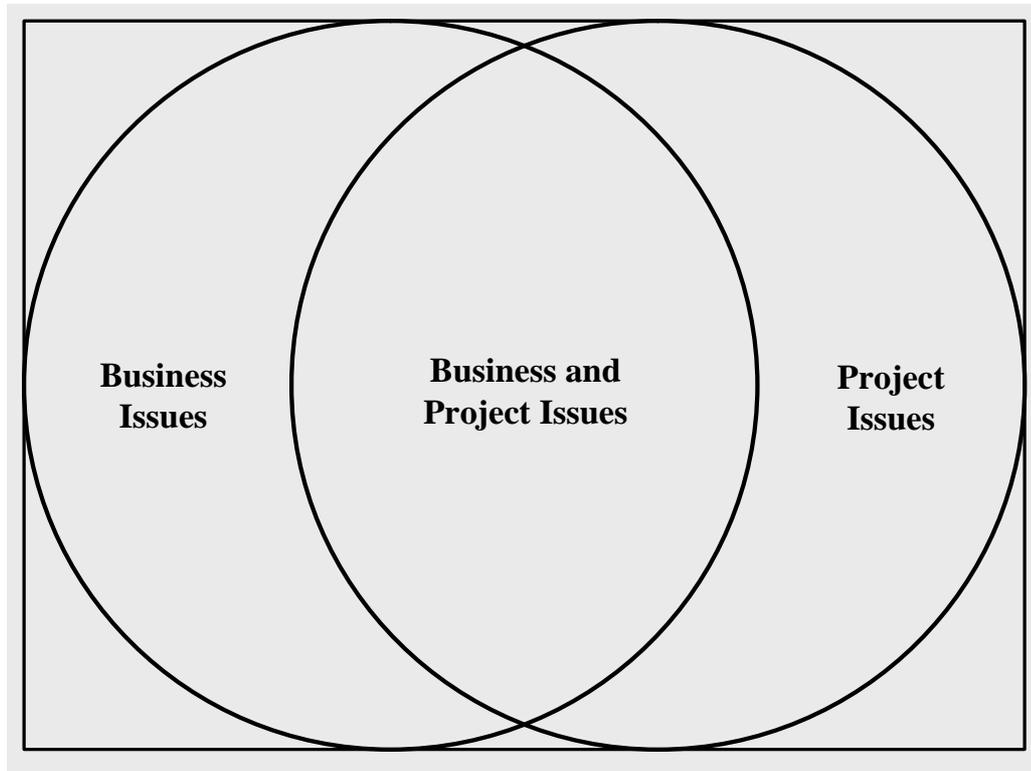


Figure 3.1: CRM problem areas

3.2 Business issues

3.2.1 Nonexistent CRM vision

Even if vision is often emphasized as the starting point of an organizational transformation, little research has been published on what constitutes an "effective" vision. Vision components refer to attributes and content presuming to make a vision effective. The vision attributes refer to brevity, clarity, abstractness, challenge, future orientation, stability and desirability or ability to inspire. The vision content is determined by the strategy of the management for the organisation. There are different factors necessary to realise a vision like strategy and planning, acquiring support, communication, organizational alignment, empowerment and motivation (Kantabutra & Avery, 2002). This general description of vision is also true for the vision to become a CRM oriented company.

The CRM vision is a picture of what a customer-oriented company should look like. It is a foresight showing what the business wants to reach by using CRM in many years. A vision can be compared with a compass, it points out the direction where a company wants to move and identifies when corrections have to be done to stay on track.

Many businesses do not have a clearly defined CRM vision. They see the possible benefits of CRM without having an idea what they want to accomplish by using it.

This is often an underestimated risk because the business tries to proceed in a customer-oriented way without knowing where to go to. In addition, employees, customers and stakeholders do not have a clear idea what CRM should accomplish. For instance what value proposition the company wants to offer or what aspect of the customer's experience should be delivered (Radcliffe, et al., 2001).

Many CRM projects which did not meet management expectations because they focused on the mechanism of specific tools and channels rather than its ultimate goal, which was expressed within the CRM vision (Freeland, 2002).

Another critical issue is that some companies create a new CRM vision with goals they want to achieve, start the project and realize later that their CRM dream does not match the overall vision of the business. Consequently, they adjusted their CRM vision and realized they wasted a lot of time and money because they were going in the wrong direction. Managers do not operate in isolation; the organisational issues concerning the adoption of CRM are played out at the institutional level (Firth, 2004).

Creating a solid CRM vision without communicating it to the business can put a business in the same position as not having one at all. This is the purpose of the mission statement, which is a self-determined action that describes the overall goal of the business to everybody in the company and tries to motivate all employees to work hard to make the CRM project successful. In case the vision is not communicated by the business and how the CRM solution supports it, there is a big risk of uncooperative employees who will be directly affected by the CRM project. Unrealistic expectations to achieve all aspects of a vision can destroy the project because all business levels contribute towards the CRM vision (Tanoury & Ireland, 2002).

Some experts say that vision without an action is a daydream but an action without a vision is a nightmare (Prisma, 2001).

3.2.2 Underestimating the impact of CRM

Two-thirds of executives believe that more than half of their important business decisions are based on a good feeling and experience, in comparison to a sound and verifiable information. A study identified the following facts (MicroTelligence, 2004):

- 77 % of bad management decisions are made within organisations because of no access to accurate information.
- A gap exists between low-level, day-to-day tactical decisions and high-value decision making, with a majority of time spent on routine, rather than on strategic decisions with the greatest impact on business success.
- There are more critical and complex business decisions that need to be made compared to years ago and it is becoming more challenging to make important business decisions.

CRM is one of those important strategic business decisions. Many managers do not spend much time on evaluating the impact of CRM on their businesses. One of the fundamental misunderstandings about CRM is that the term relates to a new development of IT applications and systems, but it does not, it is merely a necessary condition. One of our most robust findings in previous research is that the information component, comprising databases and customer information systems, is a necessary condition for CRM, but otherwise contributes little to either relational advantage or performance (Day, van den Bulte, C., 2002). CRM is a business philosophy describing a strategy, which places the customer at the heart of an organisation's processes, activities and culture. IT applications are the tools that allow organisations to implement that strategy to a certain extent, but the fundamental starting point is always the business philosophy (Rodgers & Howlett, 2000).

Understanding the meaning and dimensions of CRM is a very complex topic. Three-quarters of businesses do not know what CRM is and many embark on CRM implementations without any clear idea of the business objectives (Ward, 2002). They believe CRM is a set of technologies that is as easy to implement as a word processing program with a set-up button to make it work.

These companies assume that it is possible to buy a CRM solution and do not know about all the consequences involved. A reason for this misunderstanding is that only 45% of the top managers in a company initiate and control the implementation and monitoring of the CRM project. This is a common beginner's mistake of many compa-

nies trying to implement CRM not to involve top management. In more than half of all CRM implementations other management levels take the lead (Petrisans, 1999).

If the managers of the same company have a different understanding of CRM they will have no universal base for their discussions and decisions. This is a prevalent problem in starting a CRM project (Boon, et al., 2002).

Managing Directors seldom have the in-depth knowledge they need to judge the time required and scope of implementing a CRM solution into their company. Merely superficial knowledge is not enough to determine the significant changes that have to be made within the company. This is not a day-to-day operation that can be handled as a part time project with the responsibilities delegated to a lower management level. Twenty-one percent of all CRM stakeholders believe the main reason why CRM projects do not achieve their expected outcome is a lack of CRM knowledge to begin with (Hart, et al., 2002).

3.2.3 Immeasurable CRM goals

Goals or objectives provide the overall context for what the project is trying to accomplish. The goal references the project benefits in terms of cost, speed or quality. They are concrete statements describing what the project is trying to achieve (Mochal, 2003).

The definition of goals at the beginning of an implementation states all objectives that a business wants to reach with CRM. These goals are the milestones to evaluate if the CRM solution is finally successful.

A key driver of most CRM failures is not measuring the progress to reach a certain goal. In case a business is not able to define or measure benefits, they do not know if they achieve them; more than 80% do not have a well-defined measurement strategy for CRM goals (Kinikin, 2001).

Every business has its own goals and objectives that they want to reach with the use of CRM. Depending on their priority the goals are weighted differently. The problem many companies face is the gap between the relevance of different goals and how they were achieved.

Figure 3.2 shows the most common business goals for CRM in context of relevance and satisfaction on a scale from 0 to 5 (0=No relevance/ no satisfaction, 5= High relevance/ high satisfaction). The relevance of a CRM goal indicates how important it is to achieve it and the satisfaction of a CRM goal indicates how well it was achieved.

Figure 3.2 indicates that especially the CRM goals with a high relevance were not accomplished with the same level of satisfaction. This means the most important goals were not achieved successfully.

A reason for this gap is that only 12% of all businesses measure CRM initiatives based on external metrics (Botwinik, 2001). In many cases, the operative and strategic objectives are not attainable and quantifiable. It is difficult for a company to meet their goals if they do not know how to measure progress of their CRM implementation.

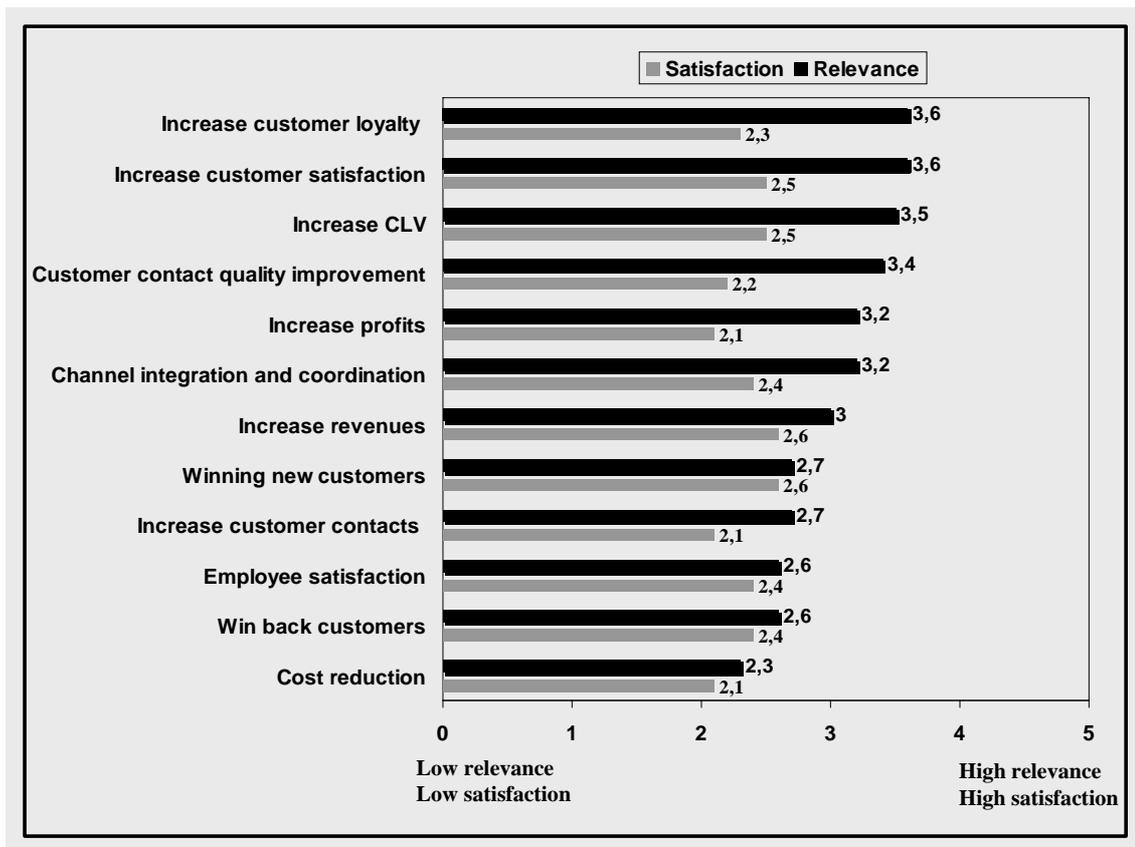


Figure 3.2: Relevance of CRM goals vs. satisfaction of obtained results

Source: (Oversohl, et al., 2002)

Another problem many businesses face is dealing with too many goals. They do not separate the "must have" from the "nice to have" ones and want to accomplish all of them. This creates an overload of measurable goals that cannot be handled by the responsible people at one time. In case a goal cannot be reached, the consequences to the business are not clear from the outset and most employees do not see the need to achieve the target in time. In addition, many measurement processes are not specific enough and create misunderstandings after a while.

3.2.4 Missing CRM strategy

The literature on strategic alignment of an overall business strategy and an IT strategy suggest to integrate IT as one source of discontinuity in their complex organisational and business setting (Henderson & Venkatraman, 1992; Boynton, et al., 1992). Even if CRM is more than just an IT project it still is a part of the business strategy (Chin, et al., 2004).

A CRM strategy describes what a company wants to accomplish by using a CRM solution in a certain timeframe. The strategy is based on the business' competencies to create value propositions for customers and market segments that offer the most value potential. This includes a statement on how to turn the existing customer base into benefits by building their value (Fadia, et al., 2003).

There are opportunities for many organisations to improve customer service by delivering a systemic and integrated relationship between an organisation and individual customers at various customer contact points (Spencer-Matthews, 2004). Every successful company would like to capture and retain the right customers. The customer strategy is now the enabler to define who the right customers are and what is necessary to retain and capture more of them. The company has customers with different expectations and needs but not all of them have the same value to the company. These facts are revealed in Table 3.1.

Most managers have realised the importance to rank the customer first. The problem is that building a real customer centred business has proven to be exceedingly difficult. It involves many strategic issues. The global business environment gets more complex every day. Customers have more alternatives and higher expectations. Companies need to do everything right to get profitable customers and keep them coming back (Frei, 2002). Figure 3.3 shows five obstacles to implement a CRM strategy and how significant they can be.

One of the biggest sources of failure arises when companies put CRM tools in place before having a clear customer strategy. Many businesses that implemented CRM failed to develop a uniform CRM strategy to build up customer benefits. 85% of the companies do not understand how CRM creates value in their customer base. Instead, CRM has been implemented as a piecemeal function to concentrate on building up capabilities from which presumably valuable customers will arise. A CRM strategy is required to have a coherent and structured approach to deliver more value to the business from its customers. It was estimated that until the year 2004 up to 80% of all companies will not have a CRM strategy in place that delivers details how to turn customers into assets.

This will result in 90 % of the cases in wasted investments and disappointing levels of customer retention (Kirkby, 2002).

Table 3.1: Ten customer facts

- 1. The top 20% of the customers can deliver 80% of returns.**
- 2. The top 20% of the customers can deliver more than 100% of profits.**
- 3. Existing customers can deliver up to 90% of revenues.**
- 4. The bulk of marketing budgets are often spent on non-customers.**
- 5. Between 5% and 30% of all customers have a potential for growth.**
- 6. Customer satisfaction is critical to “growing” customers.**
- 7. Reasonably satisfied customers often defect to the competition.**
- 8. Marketing and Sales are responsible for customer behaviour.**
- 9. Other departments and people (for better or worse) also influence customer behaviour.**
- 10. A 2% upward migration in the customer pyramid (i.e. medium to large customer) can mean 10% more revenues and 50% more profit.**

Source: (Curry & Curry, 2000)

Most CRM implementations begin without any strategy or any other concept. This makes CRM initiatives more and more a high-risk investment (Oggenfuss, 2002). Without a well-defined CRM strategy it is very difficult to set up a successful CRM system, because it will be the guideline of the subsequent implementation process. The strategy will serve as a reference point for thousands of decisions required in the course of a CRM selection, development and implementation process (Rosenbleeth, et al., 2002).

On the other hand, some companies that develop a new customer oriented strategy ignore the overall business strategy. This can be a crucial mistake because the business strategy is the dominant one. In case both strategies do not work interactively, the failure of CRM will be very likely. The new customer orientation would then be contra productive to the entire business. In addition, some companies have a separate IT strategy which is not incorporated and complicates the harmonisation of all existing strategies (Mello, 2002).

Reasons for CRM failure

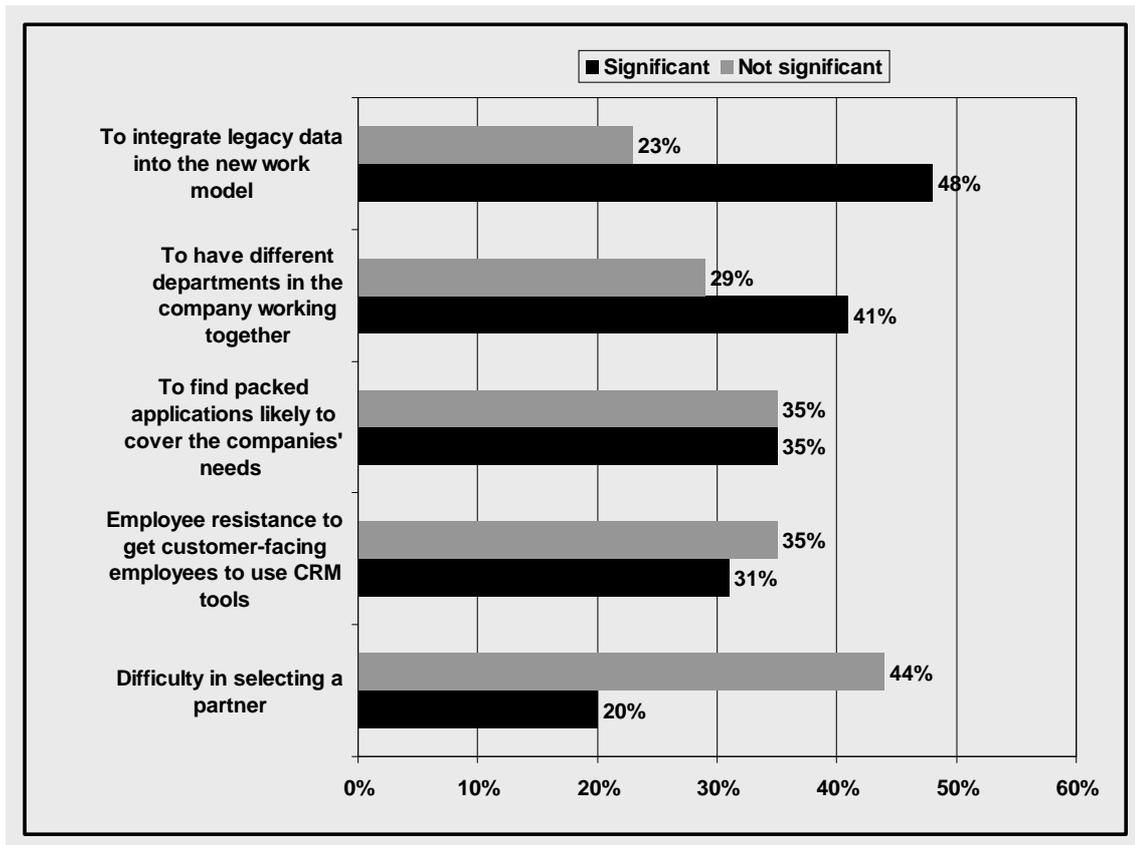


Figure 3.3: Major obstacles in the implementation of a CRM strategy

Source: (Petrisans, 1999)

Most companies believe that they have a well-fitted strategy otherwise they would not be successful within the market they operate. This can be a mistake. Before implementing a CRM system, the strategy should be revised and questioned because only 40% of the companies know about a problem before a customer does, only 43% of the companies' after-services are based on a customer's profitability and only 37% know if they share a customer with another division (Eechambadi, 2002).

The strategy should be up to date and not historically grown. Subsequent changes of an old strategy involve many problems and high costs. There is not one suggestion for the ideal business strategy because of the variety of business philosophies. Instead, it is a very difficult task for every company to develop their optimum customer centric tactic. This crucial step serves as a basis to a successful CRM system.

However, a good strategy is at all times not only cognizant of the needs of the upper management, but of all users because business processes have to be changed, added or eliminated many times.

Managers who believe that CRM delivers a customer strategy do not understand the philosophy behind CRM. This misunderstanding can cause major problems, because the CRM technology only supports the fulfilment of a customer strategy, it does not replace it (Almquist, et al., 2001). Deploying technologies with a different strategic direction can be detrimental to the company. Another critical issue is that organisations do not focus on company wide CRM requirements when they try to develop a CRM strategy. This creates in many companies long-term problems because they have mistaken CRM for a single technology, marketing, sales or service initiative and assigned the CRM implementation project to one of these divisions (Kossin, 2002). They do not take into consideration that all their departments are needed and should be involved in order to implement CRM. All departments play an important role, but company-wide CRM should be treated as a combined solution approach with the focus on the customer to deliver good buying experience.

The research depicted in Figure 3.4 demonstrates the importance that good customer experience encourages loyalty, while poor experience can cause reduced wallet share and defection. In this case study (Berg, et al., 2003) a retail store with USD 200 million in annual sales had customers that each spent USD 100 per year on average. The research study established that 78% of the customers were having positive experiences with the company and 22% were not. Only 2% of the customers with a bad experience complained. In this case, the retail store could solve 38% of the problems and retained the customers. In contrast to those 98% that did not complain, 45% defected and 55% reduced their business. Since there were no complains, none of these issues could be resolved.

To create a better customer experience, many companies fail to adapt all processes, attitudes, behaviours and technologies that support customer interactions throughout the business. Customers often receive a different treatment depending on how they contact a company - via e-mail, phone, fax, Internet or direct sales. Different departments treat customers differently and cause discontent to some of them.

Most companies are far away from the goal that all departments of the business need to have "one face to the customer" and engage the "Customer Engagement Life Cycle" (Bitterer, 2002).

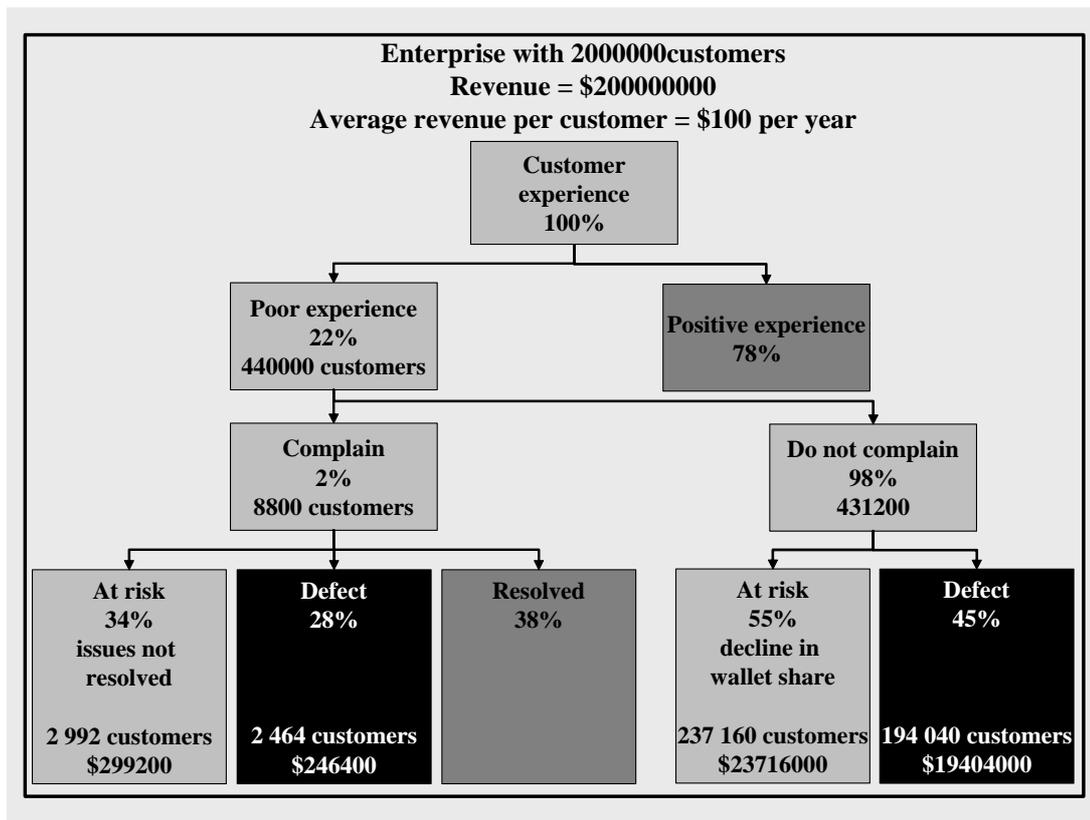


Figure 3.4: Customer experience is a business issue
Source: (Berg, et al., 2003)

3.2.5 Ineffective organisational processes

Business Process Reengineering (BPR) is the restructuring of processes in an organization with the goal to use IT optimally. In the nineties it was considered as a radical clean sheet approach to business transformation. Today these methods and tools are usually applied as aspects in more extensive organisational change projects (Dietz, et al., 1995).

BPR has been approached mainly from two angles. The first one is the strategic top-down approach from the management literature. It tries to improve certain aspects of performance by offering procedures and guidelines. The second one is the technical bottom-up approach from the information systems field that offers formal modeling structures to represent and analyze existing and future processes (Dietz & Mulder, 1996). In the literature there is mostly no cohesion between these two approaches. The management literature does little to carefully define and delineate the process aspect of organisations, while the literature on modeling structures often neglects economic dimensions. It is often considered too expensive and too time consuming (Peppard & Rowland 1995).

Every company has a certain way of doing their daily business. Existing structures and processes have developed over a long period of time because they seemed to be working fine for their organisational needs. With the implementation of CRM in order to be more customer oriented, the business needs to check if these processes and structures are still up to date.

Many organisations try to attach a CRM solution to their existing business structures. This can create major problems since many companies have deficient customer-based processes. Companies usually defined these processes many years ago with only minor corrections and failed to adjust them to changing customer demands.

A CRM showstopper can be to integrate a flawed process into a CRM system because when automation is added the negative effects of the flawed process are augmented and the company can unwillingly annoy its customers (Bergey, et al., 1999). Organisations that just replace an existing system with a new one without checking and adjusting the old business processes will not improve their customer relationship satisfaction ratings.

Companies pursuing a CRM initiative often make the dangerous mistake of trying to correct their own "customer-facing" process deficiencies not by agreeing on them internally on how users would like the process to be done. They rather purchase CRM software that contains one or more business processes that have been pre-built by CRM vendors and then force the "not-built-here" process on the system users (Goldenberg, 2002).

Many companies do not plan or involve the end-users in the optimisation of all customer processes. This can be a dangerous mistake because they have the most important contact with their customers and know what they want and need (Sparger, 2001).

3.2.6 Insufficient CRM budget

Every CRM project costs money. Therefore, the business needs to provide financing but those costs can vary on a large scale depending on the size of a CRM solution. Table 3.2 shows the wide range of CRM budgets. Nearly two-thirds of businesses in the world have a CRM budget less than USD 1 million.

Realistic funding for CRM projects is often not included in the budget when companies kick-off their initiative. Therefore, many companies take a low cost approach in order not to cause any disruption to the current fiscal year plan. This approach can be very risky (Lawrenson, 2002). Thirty-seven and a half percent of companies that imple-

mented CRM ended up over budget or failed to deliver the benefits promised (Dickie, 2002).

Table 3.2: Distribution of CRM Budgets

\$10+ million	13%
\$2,5 million to \$10 million	16%
\$1 million to \$2,5 million	14%
\$500 000 to \$1 million	17%
\$100 000 to \$500 000	24%
Less than \$100 000	16%

Source: (Eckerson & Watson, 2000)

Many companies underestimate the total costs of ownership of a CRM implementation and hence have an insufficient budget that is not able to cover all expenses. They believe they only have to buy the software and forget to include hardware, customisation, training and support. In addition, the costs of lost productivity of employees that have to be trained to use the system are often not included.

Besides internal business policy, a lack of funding is one of the largest impediments to organisations (Gustavson, 2001). Software expenses are not always the bulk of the budget. This is a crucial mistake many companies face when they plan to implement CRM.

It is possible that software expenses represent a main percentage, depending on what product is chosen for implementation, but it is only one component of the entire budget. Depending on the company's exact needs, plans and requirements, software expenses can vary on a wide range of the total costs. Figure 3.5 shows five major costs factors and software is only one of them.

Trying to implement a CRM solution as cheaply as possible is another mistake companies come to regret. Funding for CRM projects is often not included in the budget when companies kick-off their initiative. Therefore, it is tempting to take a low-cost approach in order not to cause any alteration to the current fiscal year plan. This approach is extremely prone to failure. Slow hardware response time can turn users off to the point where they refuse to use the system. Part-time programming projects typically never get done. Buying the cheapest technology may work in a mature market like spreadsheet software, but it rarely results in the right choice in a developing market like CRM where there are 500 and more vendors each approaching the problem from a different perspective (Lawrenson, 2002).

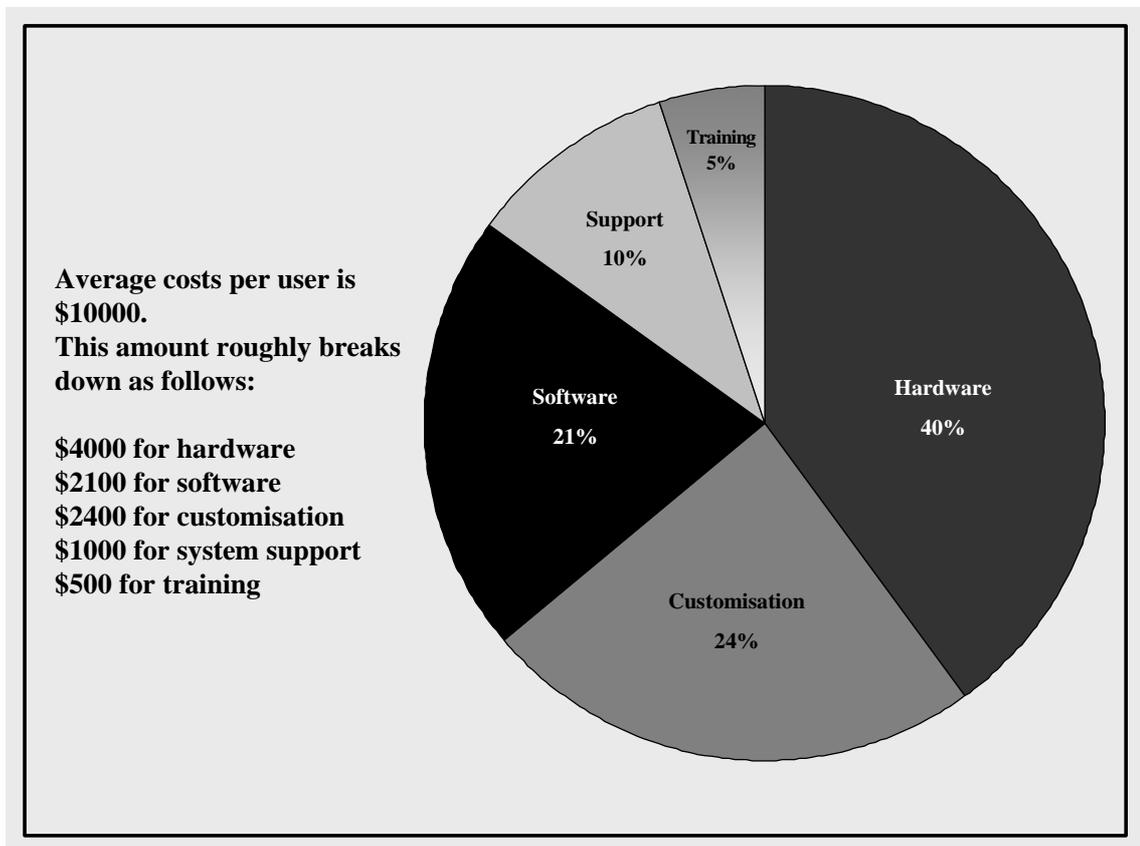


Figure 3.5: CRM project cost breakdown

Source: (Dickie, 2002)

3.2.7 Falsely selected CRM solution

There are many CRM vendors in the market with a wide variety of CRM products like SAP, Siebel, Oracle, Microsoft and others. Next to these vendors there are many companies with non-standard CRM software products. The selection of the right CRM software can therefore be a very difficult task.

Some companies base their CRM strategy on a vendor's vision and reputation. This can be an essential mistake because business processes and people achieve benefits, not software (Johnson & Higgs 2003).

A CRM solution is a long-term asset and the CRM vendor will become a partner to the business. Many companies underestimate this lasting cooperation. It is a crucial mistake to select a vendor only by price and ignore the reputation, industry experience and future CRM development plans. There are too many issues that require a good relationship to a CRM vendor than to select the first one that comes across, especially when it comes to future support and upgrades (Cotteleer & Frei, 2002).

Many CRM vendors have paid little attention to the usability and the overall look and feel of their product, investing the vast majority of their development resources into winning the race of CRM features and functions. Only 16% of CRM users can quantify the value of CRM tools because they are difficult to handle (Johnson, 2003). Figure 3.6 ranks the most often used criteria to select software from a CRM vendor.

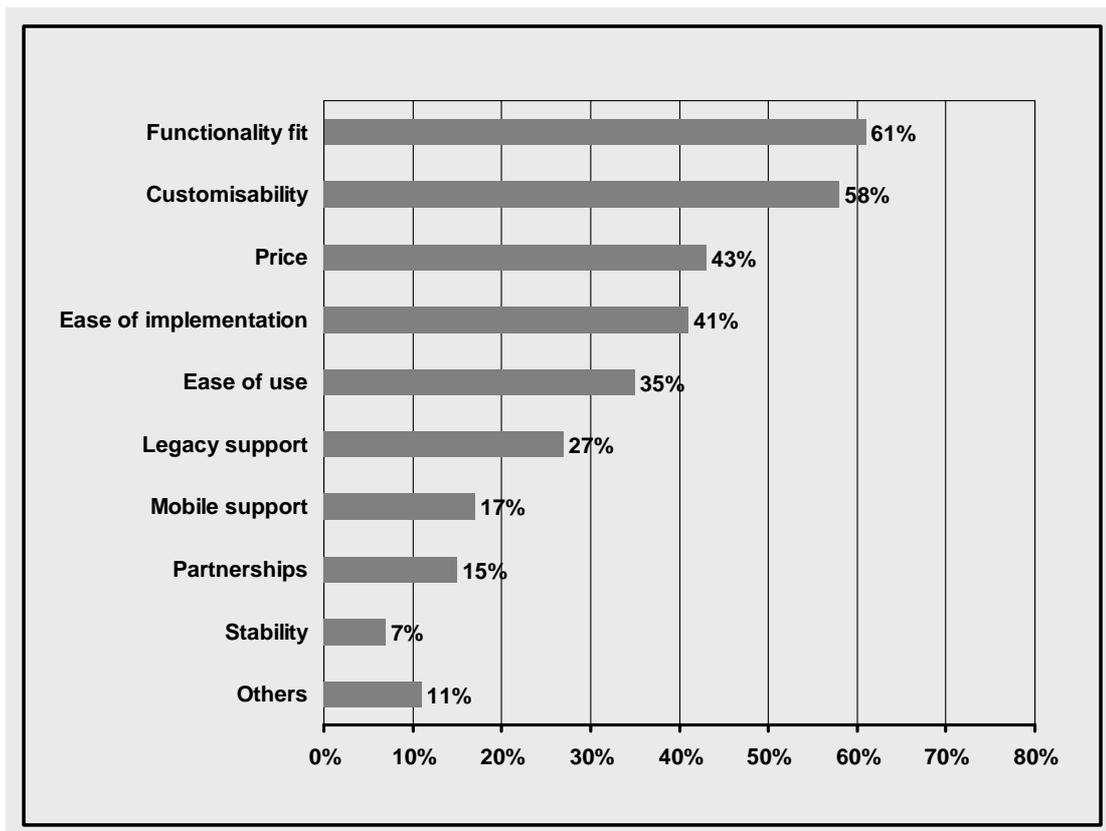


Figure 3.6: Final-choice criteria to buy a CRM product

Source: (Dickie, 2002)

Therefore, it is important to select the future CRM partner carefully with an application that matches the business' needs. However, many businesses do not know these needs because they have never done a feasibility study before to find the best way to implement its business requirements within the system.

Figure 3.6 shows two criteria that are more important than the price. The leading one is that the application has the functionality required to deal with specific operational issues. The second criterion is the customisability of the application to the business needs. This indicates that the software should be able to match the business' processes. If these two criteria are not met, it is very likely that they will create difficult problems during a CRM implementation.

Especially with company or industry specific requirements, it is difficult to find the right CRM vendor. Therefore, 63% of active CRM sales deployments involve a best-of-breed vendor. Figure 3.7 shows that these percentages vary substantially depending on the CRM sales application category.

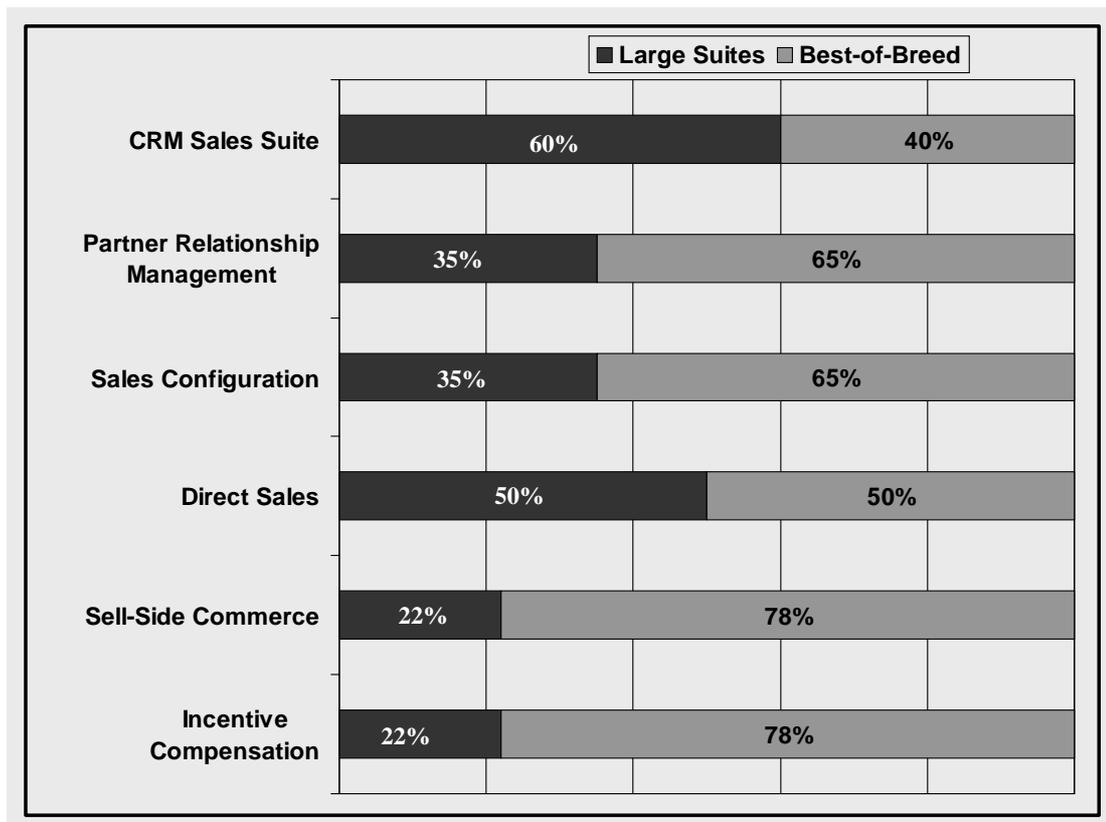


Figure 3.7: Large suites vs. best-of-breed CRM sales deployments

Source: (DeSisto, 2003)

Many companies are too credulous to believe the vendor to deliver the required functionality. Especially the sales force of those CRM vendors' promises sometimes features that they know they cannot provide. Therefore, it can be a crucial mistake not to specify the requirements and the promised solution in a contract including conventional fees in case of a failure to deliver.

In addition, some companies make the mistake of relying on a single consulting firm because they believe the consulting partner is independent. A fair number of small and large CRM consulting firms have direct financial ties to the CRM vendors they are recommending. This bias can be fatal because the business buys CRM software not depending on their requirements but instead on the financial benefit of a third party (Rasmusson, 2003).

Nevertheless, choosing the right CRM vendor with the right software is only the first step. After a company selected its preferred software, it needs to decide on the matching hardware. The right hardware sizing is crucial to the software performance.

3.2.8 Lack of management commitment

Management commitment makes a significant contribution to the outcome of any software process improvement. Studies have shown that nearly two-thirds of all efforts have failed or fall short of expectations. Literature and practice have claimed that commitment by all organizational levels is an important factor determining whether a project turns out to be a success or a failure (Abrahamsson, 2002).

The commitment of the upper management towards CRM demonstrates the importance to the business to everybody within the company. This clear statement is a message that the executive board is in favour of CRM and willing to support it wherever necessary to make it a success (Gray & Byun, 2001).

The executive board's support is one of the most critical issues during the implementation process of CRM. Research conducted recently stated that this support has the highest relevance to create a successful CRM system. However, instead of giving this commitment the satisfaction rating from all the involved people towards this important aspect is low (Oversohl, et al., 2002). This gap demonstrates that management's commitment and support in difficult situations is crucial, but often neglected. This can restrain any CRM effort. Fifty-five percent of business executives say that CRM shortfalls can be attributed to inadequate support from top management (Freeland, 2002).

In some businesses CRM implementation is a decision of a single department like sales, marketing or information technology. If the overall executive board commitment is missing, the leading department is generally facing internal conflicts and disagreements. The support of other involved parties is then lacking.

Figure 3.8 shows that in only 59% of all CRM implementations the executive board is involved in the CRM decision process. This leads to the conclusion that 41% does not include management's buy-in, which can be an implementation impediment when departments have different interests.

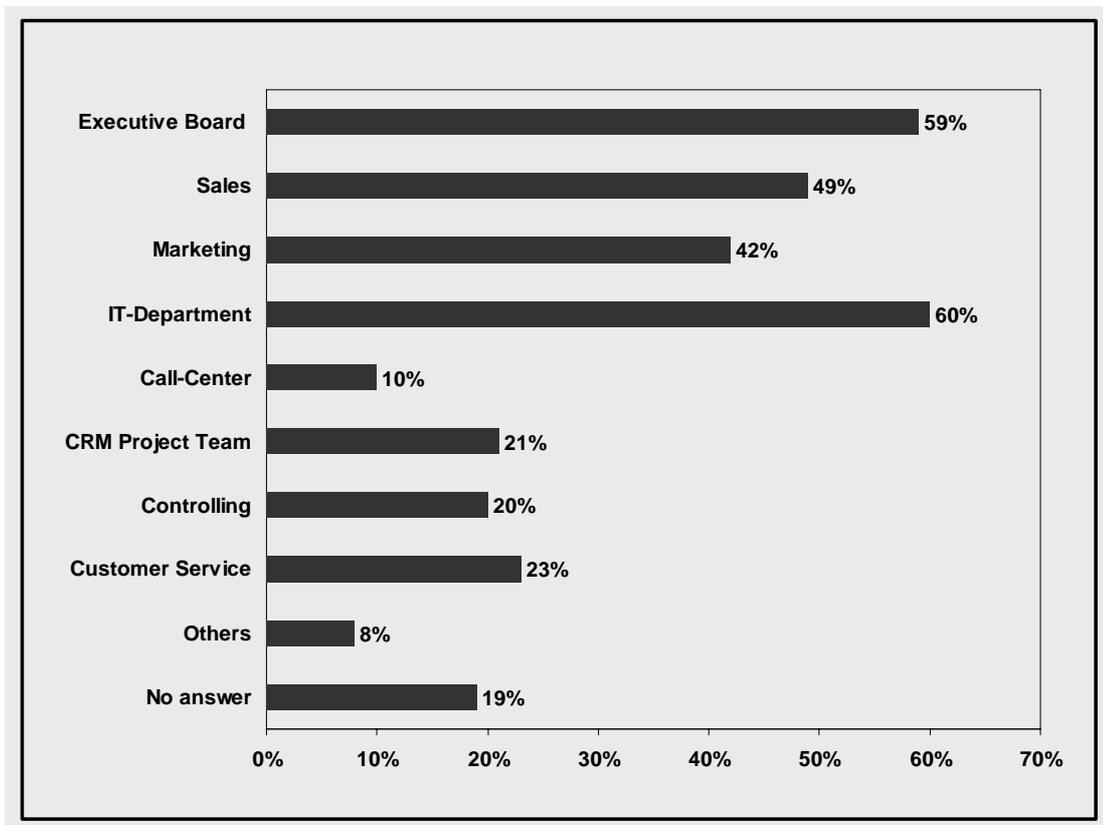


Figure 3.8: Departments involved in the CRM decision process

Source: (Krzyowski, 2002)

To guarantee management's commitment and support, the executive board often announces executive sponsors to the CRM project. This action allows the board to focus on their daily business to run the company and be represented in the project. This practice can create another problem in the CRM project if sponsors do not get full support cover from the board and deliver feedback and status reports to them.

The role of an executive sponsor in a CRM project is to present a conceptual model of what the outcome of the implementation should accomplish. The job is to send out a

clear message throughout the entire business that demonstrates the importance of CRM. Executive sponsorship ensures that the project has high visibility and influence across all ranks of users. Without an executive sponsorship in place, nobody would be in charge to distribute the CRM mission statement and no employee would understand how the CRM project matches the vision and goals of the business. The lack of executive sponsorship leads to the same percentage of CRM failure like all technology problems together (Stock, 2001).

For many project managers the lack of executive sponsorship is the biggest risk factor in any CRM project (Bordoloi, 2000). The project management usually does not have the power and influence to carry the message of CRM objectives into the company. Especially in larger companies some projects are run simultaneously. This includes the risk that CRM is not the number one priority and is neglected.

Another issue is the support and commitment of key executives within the organisation. All business departments have a strong belief that they are the most important ones within the company.

Since CRM is an application used by different departments, it is difficult to convince all of them especially when the department heads realise that CRM takes away more or less of their responsibility. The black area in Figure 3.9 visualizes the possible loss of power for different departments. These interfaces are taken over by a CRM department to guarantee an ideal customer orientation.

In the case that a CRM initiative is sponsored by one business sector or by one functional area, problems often occur. These initiatives often fail to consider key requirements of other lines of business and other functional areas. Moreover, these projects typically do not support the integrated business or marketing initiatives. Especially internal resistance of salespeople leads to CRM problems because they are not willing to share their knowledge that makes them unique to the business with others.

Therefore, the executive sponsor has to ensure the best interest of the entire company and its customers and has to supervise that the CRM project stays on track and intervene when problems appear. Without a strong executive sponsor taking responsibility for the final sign-off of a completed CRM system, the inevitable result will be that strong-minded committee members will influence the final implementation to reflect their desires in favour of their department or division.

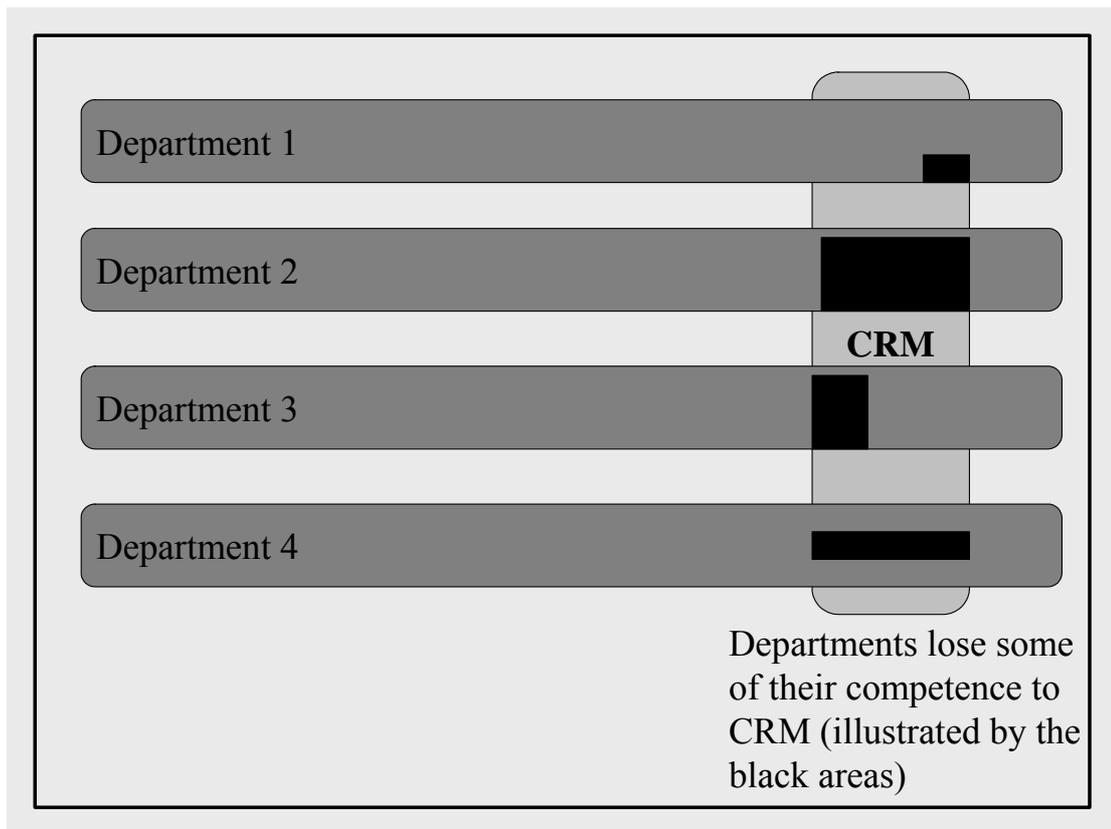


Figure 3.9: CRM application across departments

Besides the executive sponsorship on a management level, different local sponsors are required too. Process redesign inevitably crosses functional business areas within a company, but without executive sponsorship no mid-level manager will have the influence necessary to ensure that changes will be made (Dickie, 2002). Without local sponsorship, it can be very difficult to reach every employee necessary. Large companies in particular face problems to achieve the commitment and participation from all company levels to support CRM initiatives.

Many departments face the problem that they cannot change their behaviour towards CRM because their financial rewards and incentives are tied to old customer objectives. In this case, any kind of good working executive sponsorship is destroyed.

Another problem is that employees lose sight of CRM when the new CRM philosophy is not always present. Executive commitment, support and sponsorship often start with a lot of courage, but disappear after a while. This can easily get a well started project off track and causes it to fail.

3.3 Project issues

3.3.1 Incompetent steering committee

A steering committee is a group of decision makers from all involved parties within the project. The business usually has management representatives from all major departments or areas of the company that will be influenced by the CRM solution. Third parties like consulting firms bring in their supervisors to guarantee a higher decision level.

Any issues concerning the progress of a CRM project that cannot be solved by the project management will be brought up at the next steering committee meeting. Then they have to come to an agreement on these issues to ensure an ongoing implementation.

Therefore, an inappropriately staffed steering committee with conflicting agendas can lead to the failure of the CRM project. Day-to-day decisions can and should be made by the project manager but often problems require top management decisions. These kinds of issues can affect the project scope, budget or implementation time scale. They need to be solved quickly and competently. An inappropriately staffed steering committee is not able to legitimate such decisions (Smith, 2003).

Some companies do not believe that for cross-functional or enterprise CRM initiatives implementation must be prioritized. If there is no steering committee or there is only a committee of decision-makers that is not familiar with the "pain points", it will be difficult to provide new requirements, prioritize proposed improvements, and communicate key corporate initiatives (Dyche, 2002).

The best working steering committee will be ineffective for CRM's success if it does not meet on a regular basis to resolve any issues which could affect the success of the project. This increases the probability that a project will head in the wrong direction. Attempting to redirect the project, after a tremendous amount of work has been completed can harm the project so much that it is almost impossible to recover it (Tanoury & Ireland, 2002).

In case the steering committee does not supervise progress, CRM projects can easily lose focus. The members start to lose control and become dependent on the project manager. They have no possibility to ensure that the project stays in line with the vision that has been adopted and that the project continues to deliver according to the plan and objectives.

In addition, an incompetent steering committee misses its main task to assure that top management continues to support the project and communicates this support to their line management.

3.3.2 Poor project management

The literature shows no explicit theory of project management. In most cases it is a practical approach which often does not perform satisfactorily (Koskela & Howell, 2002).

Project management is the general framework of a practical professional capability to deliver a project, meeting a given mission by organizing a dedicated project team that is aware of due diligence, effectively combining the most appropriate technical and managerial methods and techniques and devising the most efficient and effective work breakdown and implementation routes (PMCC, 2002).

The project manager's main task is to fight the every-day problems that could affect the project's progress and to ensure that no issues influence the scope and the timeline. The project manager is in charge of all project team members and ensures that they can focus on their key competence. To find the right person for this job is an often underestimated challenge to the company. Many people claim to know how to manage projects and they may even do extremely well in a specific area of project management, but still they do not have the skills to deliver a project under today's requirements. Especially CRM and the integration with other systems are new to many project managers.

A poor project leader with no support increases the likelihood of project failure and major unforeseen issues such as poor quality, a project team unclear about their tasks, staff resources not properly allocated and productivity will consequently be poor. However, the biggest project management problem facing organisations today is inconsistent approaches to manage projects. Figure 3.10 shows the most common project management problems.

With 17% the problem that too many projects run at the same time in a company, is often neglected. In that case even a strong project manager can lose focus. On the other hand, if the members of the project management group have a holistic view, they will not pay attention to their daily business and will not be prepared for subsequent issues. Businesses that do not realise this problem face a conflict which can only be resolved with a program management approach that controls all ongoing projects. In program management, the main elements are planning, estimating, budgeting, controlling and

reporting. In project management, the main elements are executing, managing, measuring, controlling and reporting (Iyengar, 2003).

Another problem is the lack of a business case or poor understanding of the business needs, requirements not managed properly, undermined motivation and lack of positive action (Leitao, 2002). The business case includes all necessary tasks and activities to a successful CRM implementation. Any disturbances can affect the project negatively because it has an effect on all follow up actions.

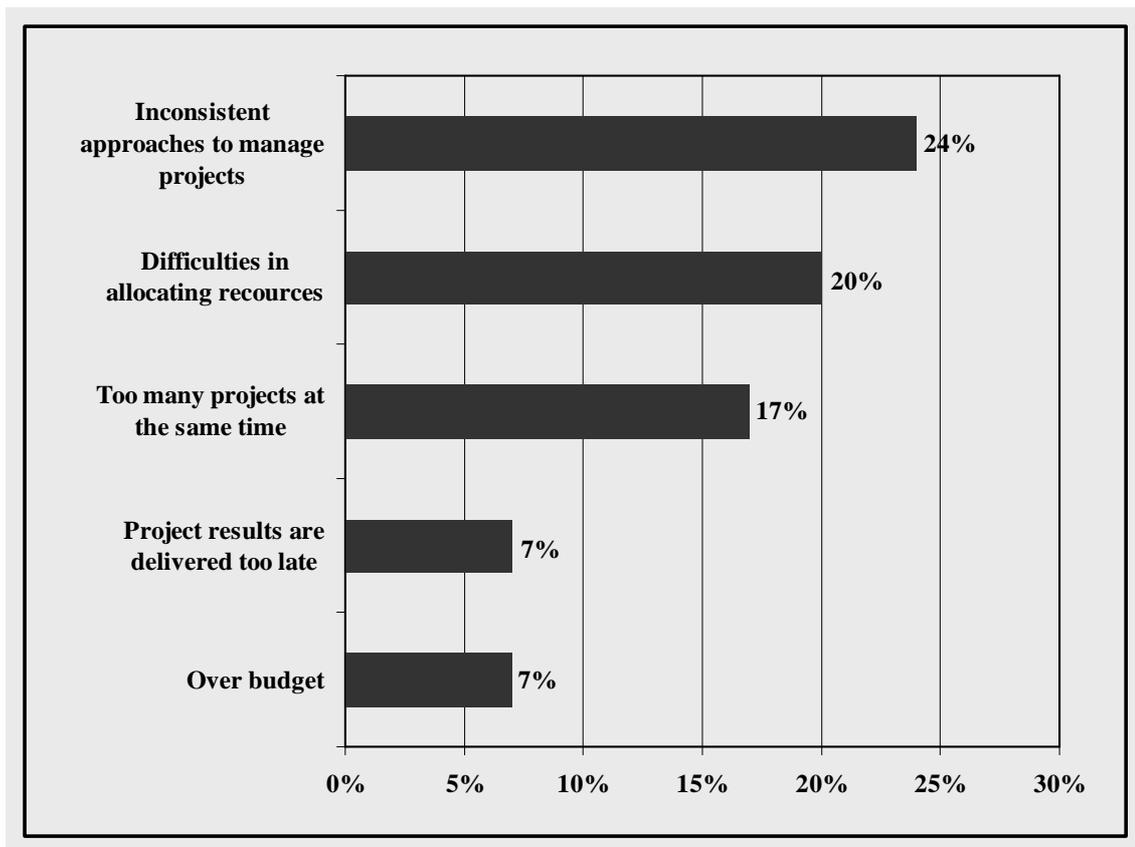


Figure 3.10: Project management problems

Source: (Pennypacker, 2003)

The project management is sometimes not aware what has to be done and when the results have to be delivered. This lack of strategic planning creates new problems while the old ones are forgotten to be solved. Steps to turn the project around will be likely to occur too late in the life cycle because there will be no warning system that it has gone off track until a correction is unlikely to be successful. If the project team fails to meet critical deliverables and milestones, valuable time will be spent explaining how to correct the current situation and planning action. This widespread mistake is based on an imprecise or too optimistic schedule. Activities and tasks are taking longer to be com-

pleted than predicted, the project team is missing target completion dates for deliverables, hours required to complete tasks exceed the estimates, large amounts of overtime are required, basic project assumptions do not seem to be true and deliverables do not meet quality standards. This is usually a result of changing business requirements in combination with an overcharged project manager who is not qualified enough to adjust his business case to a changed request.

A common problem for project management is the business culture. In case a project leader does not know the culture of the company, it is very difficult to understand the processes. A project manager can be technically brilliant, but a lack of sensitivity to organisational culture can stop the process changes associated with CRM. Especially for global CRM projects where different cultures come together any project management can despair. International projects are inherently risky and present an entirely new set of challenges to the project manager (Gentle, 2002).

Project managers with extensive technical training and expertise are often less familiar with the social side of project management. While this circumstance can be tempting to ignore, it does not minimize its importance. There are three dimensions to be considered: personal, team and collaborative. The results of neglecting any one of them are familiar but undesirable (Kessler, 2002).

Uncertainty, fear to lose the job and de-motivation are common influencers of the project team during an internal project, especially in a difficult business environment. Nearly 80% of the skills of a project manager are psychological and only 20% are business expertise (Koeniges, 2003). The psychological aspect in selecting the right project leader is often underestimated.

3.3.3 Incapable project team

The CRM project team usually consists of employees and consultants. They are experts, functional and technical team leaders, functional and technical analysts, developers, technical architects, database administrators, trainers and support personnel. Each one of these experts will come on board at different phases during the CRM implementation. Depending on the availability and skills of the resources within the company, the ratio between internal and external project members varies.

Many companies face the challenge to decide on the ratio and balance of the implementation team. Some believe they have all the expertise in house while others let consulting firms do all the work and think they will get a ready-to-use system. Both approaches failed to work in the past. Most companies do not have the knowledge and qualified

workforce to implement a complex CRM solution next to their daily work routine. In the case that a consulting team does all the work, the business cannot be sure if all requirements will be met. In addition, the knowledge transfer on how to operate the system to internal departments like IT and subsequent key users is more difficult.

Another risk factor is the selection of the right implementation partner. The business expects engaged consultants to provide implementation expertise and unbiased recommendations, but sometimes they receive unqualified and too costly external resources. This problem often occurs when the company trusts their implementation partners without checking their skills.

Staffing is another reason for failure. Insufficient staff is often allocated to CRM projects, because project team members lack experience and do not have the required qualifications (Pattison & Stanton, 2000).

Outsiders can often offer substantial benefits to a CRM project for a number of reasons, such as understanding the domain, technical expertise, objectivity or simply the ability to bring extra personnel quickly to a project. However, if this ability is used unwisely, they can also contribute to the failure of reengineering projects. Since outsiders rarely know the business compared to insiders, their role needs to be carefully defined and monitored. Organisations and outside contractors often have conflicting interests. The former obviously wants to minimize the cost of external resources while the latter wants to maximize it. The contracting organisation sometimes assigns all control functions to the contractor. However, it is important for the contracting organisation to retain sufficient insight into the work of the contractor in order to know if the project is running fine or heading for trouble (Bergey, et al., 1999).

Missing factors like trust and cultural fit between internal and external resources can lead to a complete failure of the CRM project. Without working closely together and understanding all aspects of a problem, this issue can have a devastating impact on the overall timeline of the project and quality of project deliverables.

Another issue is that many project managers have to deal with the availability of qualified project members. The company faces a difficult situation; on the one hand the top key users gain revenue with their daily work, while on the other hand if they do not deliver input for an internal project, the CRM solution is not as useful as it could be (Koeniges, 2003). Many hiring and staffing decisions are not based on the decision of which candidate is the best needed specialist, but who is available at that time. Decisions based on who has the best skill set or who will be the most appropriate match of-

ten do not enter into the equation. This all too common staffing method has negative implications in the project. As a result, the quality of deliverables can be negatively influenced as well as the project schedule and the relationship with customers and end users will adversely be effected (Tanoury & Ireland, 2002).

Some CRM implementations face the problem that the role and responsibilities of the project team are not clearly defined. As a result some work is done twice and some is not done at all. This is an outcome of no concise description of the role and responsibilities of the project team. This is common for inexperienced team members because they sometimes do not understand where they fit in the project team.

Another significant reason for CRM failure is inconsistent and long-term involvement in the project. The project team turnover of large CRM implementations can be a significant risk. If the turnover occurs early in the project, new team members can be added with minimal effort.

However, as the project progresses, the impact of the team turnover will increase. Departing team members take valuable information with them about how the new system works and why decisions were made regarding process design and system set up. Staff members who are not directly associated with the project may also call the overall project credibility in question. The team member replacing another team member is often confronted with a steep learning curve and can have difficulties in taking ownership of deliverables. All of these factors can have a negative impact on the CRM implementation. In addition, many project managers believe that the more staff they have the better they do. This is often the case with development teams. They rather prefer many developers than just a few selected ones that can be supervised by the appropriate technical lead.

3.3.4 Technical CRM software problems

During a CRM implementation there is a large variety of technical problems that could occur. Some occur because the software is not used the way it was designed to and others happen because the software has inefficiencies.

For CRM a large technical issue is the integration to the existing IT landscape. CRM can be a "stand-alone" solution, but in most cases it needs to be connected to other business software to create the most valuable output. The connection between these systems is done via interfaces, which define the communication processes between different software components.

Based on a CRM suite or a "best-of-breed" portfolio of applications, the integration process is one of the most significant hurdles of a successful CRM project because no company can replace all applications all at once. Figure 3.11 shows different components that can add value to a CRM solution.

Scalability embodies assessment of all elements of size, efficiency and platform compatibility. The primary definition of size is user count, customer count, product count and volume. Performance measuring, sizing and tuning are increasingly moving away from the transaction core of the company's application towards other components surrounding and connected to it that makes it an extended company application. Benchmarks are now starting to examine complex transaction mixes that cross system integration connections. Applications are increasingly part of a chain of transactions that cross many systems and even companies (Comport, 2001).

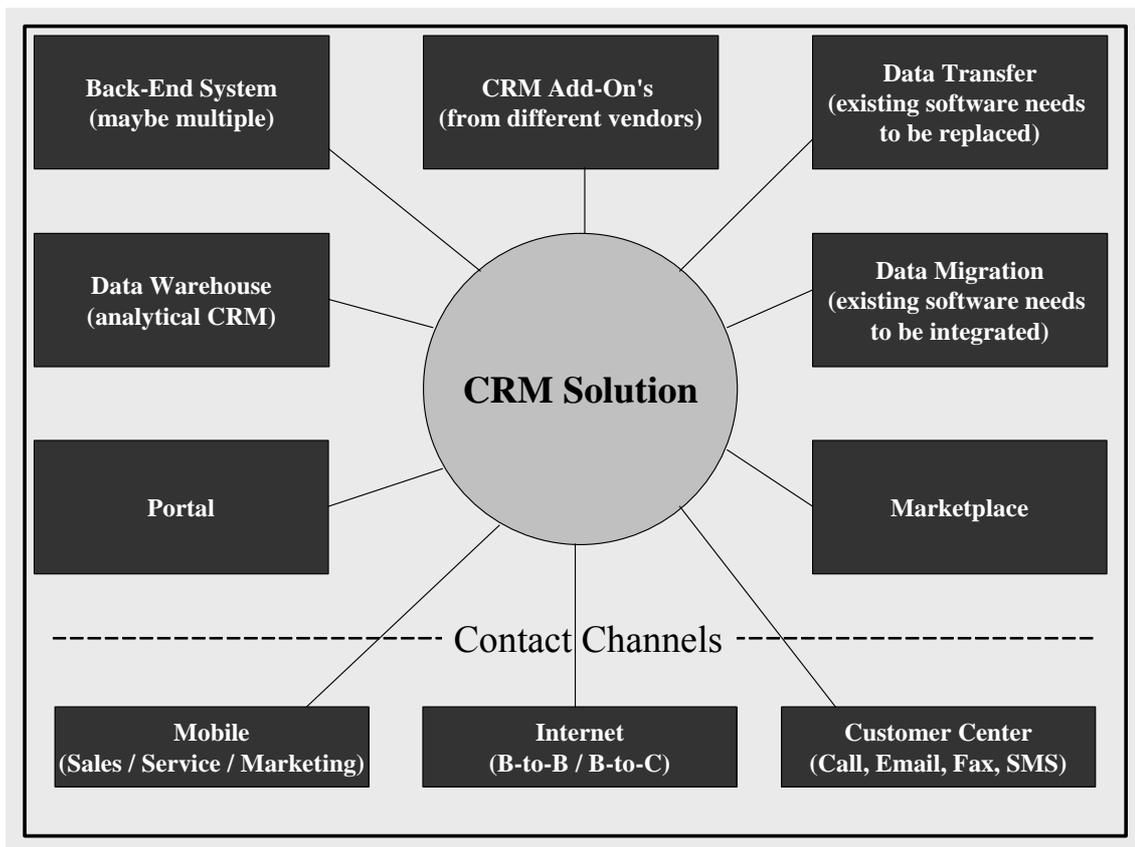


Figure 3.11: CRM interfaces towards other software components

Some companies plan to keep their existing infrastructure without taking into account that the old software may not be able to apply to new business processes. In addition, the interface programming to connect the existing and the new application can be very costly (Stengel, et al., 2001). With the wrong CRM system, integration could be a time

bomb waiting to explode. Depending on the architecture of the CRM software and other information processing systems, a business could end up spending more on integrating the CRM package than on buying it (Stengel, et al., 2001).

CRM is supposed to present a company with a complete view of individual customers and endeavours to offer greatly improved customer service. Integration of data from both front and back-office systems, and from all of a company's separate channels, is vital because the whole concept of CRM is based on understanding the customer at any point of interaction. CRM initiatives that lack integration between internal systems often leave customers with a confused impression of the organisation. Cross-channel integration and the integration of front-and back-office systems were among the thorniest issues facing companies trying to implement CRM initiatives (Kelly, 2003).

Survey results show that only 18% of respondents had entirely integrated their front-and back-office systems, despite the fact that nearly 75% of all respondents cited this level of integration as their top priority. Integration across separate channels was also a key concern with about 60% admitting that their cross-channel integration needed to be improved. Over the past 12 months integration has been the top budget priority for customer-facing initiatives, with 17% of the overall CRM budget devoted to call centre integration and 12% spent on cross-channel integration. Projections show expenditures levelling out, with both types of integration making up 14% of the budget. However, the failure to integrate contact channels can destroy well-intentioned initiatives (Ward, 2001).

3.3.5 Insufficient testing before going live

Testing is a checking process to verify if the system runs correctly. The testing time after development, configuration and modification of the CRM software is the last phase to find mistakes before the system is released to all users.

All types of software continue to grow steadily in complexity and size. The business demands for shorter development cycles have forced software development organizations to struggle to find a compromise among functionality, time to market and quality. Lack of skills, schedule pressures, limited resources and the highly manual nature of software development have led to problems for both large and small organizations alike. These problems include incomplete design, inefficient testing, poor quality, high development and maintenance costs and poor customer satisfaction (Butscher, et al., 2002).

CRM developers and consultants do a great deal of testing during the development and implementation period. If the program is vulnerable to overflows, lack of input checks,

or even lack of encryption, it will quickly become known for its instability (Andrews, 2000). However, testing CRM software, processes and workflows before going live with the system are often neglected by companies. One reason for this behaviour is the tight project schedule. The project manager has to meet the promised deadline. Therefore, programmers are encouraged to conduct sufficient testing on their own. But programmers have often other deadlines to meet and do not have time to test their software. In addition, most programmers usually know how to avoid problems, but the end users do not.

This can be a crucial mistake because the costs of finding and fixing a single bug within software programs grow enormously. If a problem is detected early during the requirements phase, it costs about USD 139 to fix. By the time the coding begins, costs rise to nearly USD 1000 per bug. If the bug is not detected until after the project is completed, costs rise significantly. For example, many companies have testing teams whose focus is on detecting problems after the coding phase is completed. In this case, to find bugs and to fix them, the average cost is over USD 7000 per bug. If bugs are not detected and fixed until the software is deployed, costs rise to over USD 14000 per bug. This is 100 times more money per bug than if a bug is detected during the initial phase of the development period (Viega & McManus, 2000).

Especially potent postproduction bugs can create more work for the project team in the end than testing and finding mistakes when they occur. Figure 3.12 underlines that the greatest risk associated with not testing CRM software is the cost to the company. This risk is closely followed by customer dissatisfaction and damage to the company or product's reputation.

Since nobody, except testers, makes any money from testing, many companies spend rather time programming new codes than wasting time to test completed software. This behaviour creates new mistakes instead of solving them. A CRM project can easily slip into a "code-and-fix" mode without necessary control mechanisms to catch problems in the early state when they can be most easily fixed.

Putting a system into production without adequate testing is like diving into a swimming pool without checking to see if there is water in it. No system was ever created completely bug-free. The time spent to thoroughly test any system before placing it into production can save much more time in the long run (Dorsey, 2000).

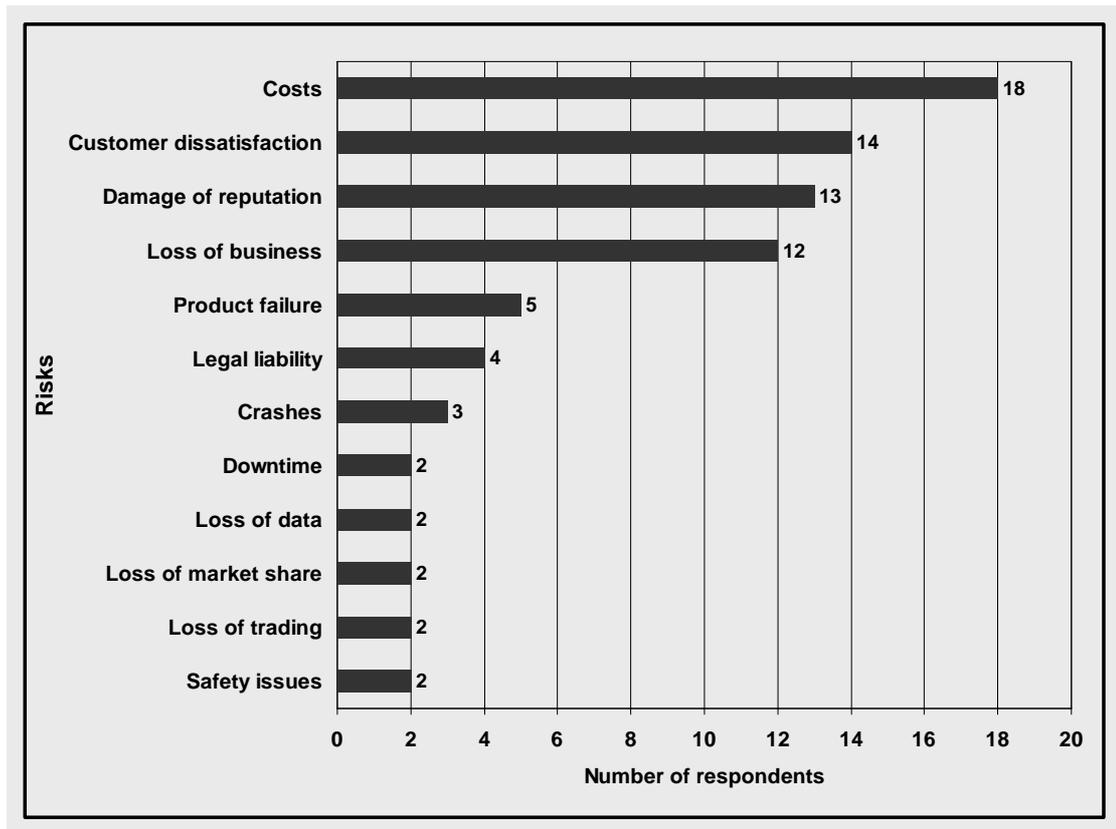


Figure 3.12: Risks associated with not testing software

Source: (Bartlett, 2001)

3.3.6 Poorly planned and executed roll out

At the end of the implementation phase, the CRM system will be rolled out to all users. The way this happens is determined in the rollout strategy.

Industry experts cite failure rates for CRM rollouts of up to 70%. This is a disastrous high figure for initiatives that typically cost thousands or millions of dollars. For smaller businesses or departments within large companies even a successful implementation at that cost is out of the question (Desmond, 2001). All the money in the world cannot save a CRM project if employees are under skilled and under trained. By doing so, companies reveal that they believe their employees are unimportant. This can be a big mistake because most trigger points for system rollout failures are internal issues (Anderson, et al., 2002).

In the past, many CRM solutions were rolled out at once. This "Big Bang" approach created many areas of additional problems that had a negative influence on the employee's acceptance (Kra, 2003). The danger of a "Big Bang" approach is that there is no time available to carry out essential fixes (Jones, 2001). On the other hand, com-

pared to a "Big Bang" approach a step-by step approach can take longer and can often cost more to deliver all of the requirements.

The CRM system is a complex portfolio of technologies and applications that needs to be available for use at any time. Many risk factors like power failure, wrong temperature, redundant servers, faulty backups, complex user interface, misleading navigation, missing performance and others can be detrimental to an otherwise fine working system.

Some businesses focus mainly on the technology aspects of CRM. They do not ensure that the entire workforce can use these tools effectively (Nelson, 2002). Training is the process by which for example end users of help desk technology learn how to efficiently operate the software application. Training is typically required and can run for days to weeks in duration.

A lack of a well-defined training plan can have a negative influence on a CRM deployment. Failure to accurately estimate training needs and modify the plan as dictated by the project status is a mistake that can cause immense damage to an organisation. However, determining who needs to participate in initial training, the curriculum to be covered and the lead-time required to complete the training, is no simple task. Identifying all employees who require training sounds like an easy task, but this is a fundamental requirement that is often handled the wrong way. A common mistake is to assume that if an employee has no need to input or access information in the current system, no training will be required on the new tool. Training schedules need to be adjusted to minimize lag-time between training completion and system deployment (Tanoury & Ireland, 2002).

If users are unable to understand and use the system, the project is a failure even if everything else is executed perfectly. Therefore, it is extremely important that adequate time is allocated to end-user training. Any new software, whether it is an upgrade or an entirely new tool, requires that a certain degree of training to users is provided. Users have different ways of learning. Some users like to learn on their own web based training, videos, or printed materials, while others feel only comfortable if taught by an instructor. This requires internal or external resources that specialize in training and development (Daly, 2003). In addition, users should have access to non-technical user guides and should be shown how to access and use the new system. It is also useful to have telephone support for a few months after the initial rollout of the system.

Training and performance support must reflect the learning needs critical to meet stated business objectives. Organisations should realize that if those objectives involve using a new application, the proficiency and skill with which people can perform their jobs using that technology can mean the difference between organisational success and a wasted investment (Anderson, et al., 2002).

3.4 Business and project issues

3.4.1 Corrupt data quality

A CRM solution only allows a company to have a comprehensive view of its customers and activities if the data is reliable and available. Customer-centricity can only be as good as the quality of the customer information upon which it is based, it is critical to assure the highest quality, consistency and flexibility when managing customer information (Talbert & Wang., 2004).

Companies are often unable to handle current service problems because the details of all customer interactions are not stored or are dispensed in multiple databases. This leads to an incomplete customer picture and this partial knowledge often leads to incorrect inferences with the customer. The company has no indication of current or future customer needs (College, 2004).

Data quality is the foundation of any working CRM system. There are different attributes that characterise data quality (Rudra & Yeo, 1999; Wang, et al., 1995). These data quality attributes can be found in many companies. Figure 3.13 illustrates a ranking of these data quality issues.

- Accuracy – Inaccurate data can be a result of entering wrong customer data or by merging data from multiple sources.
- Completeness – Missing or incomplete data can be a result of merging systems where data fields do not exist in some sources or where blank fields in a prioritised source overwrite good data from other sources.
- Redundancy – The same business partner is entered several times within the system. These duplications can be a result of entering wrong customer data or of merging data from multiple sources.

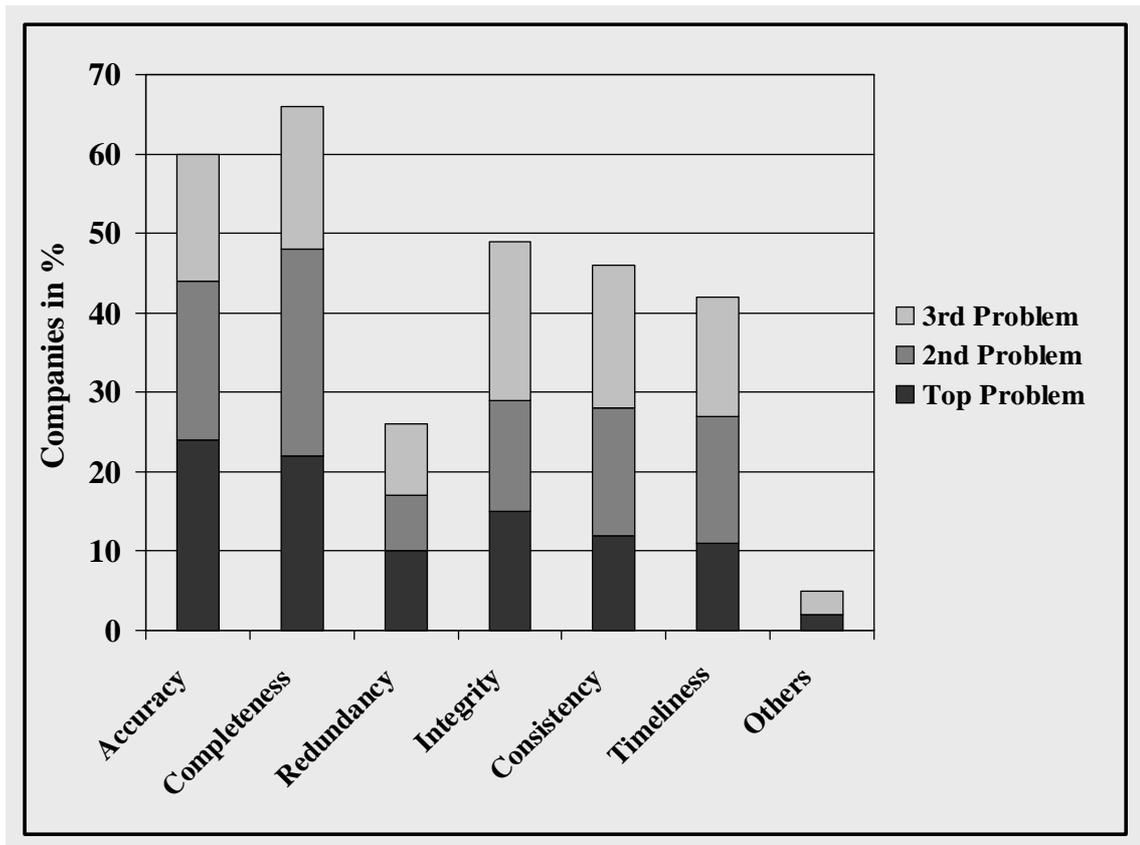


Figure 3.13: Data quality issues

Source: (Laney, 2002)

- Integrity – Non-integer data has not been verified for a certain period and is most likely not valid anymore.
- Consistency – Inconsistent data can be a result of conflicting sources. This occurs when two or more systems have different values for a single piece of data.
- Timeliness – The best data quality has no use if it is not available in time. This can be a result of performance issues.
- Others – Any other reason why data is not accessible, understandable or usable.

Another perspective on data quality problems is a more precise view on tangible problems. The most common mistake is human failure where users enter wrong data into the system. Figure 3.14 shows a selection of various sources that could lead to bad data quality.

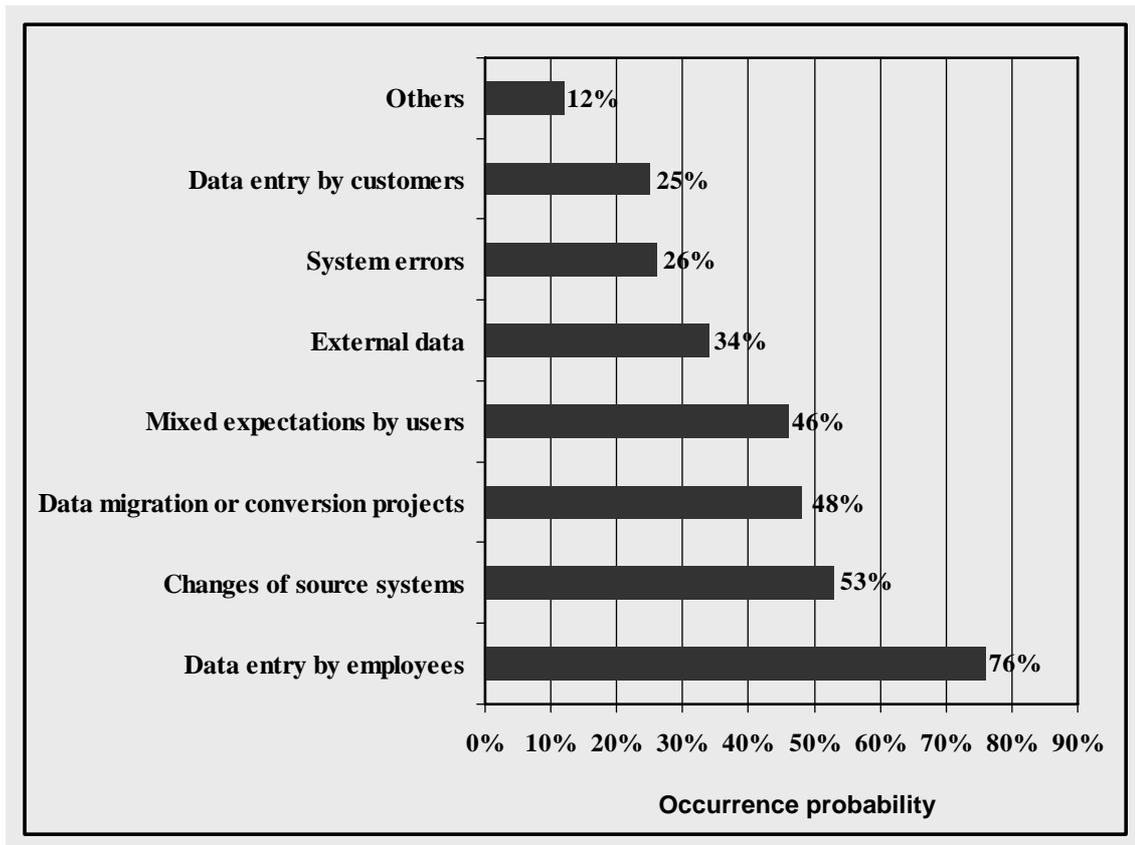


Figure 3.14: Sources of data quality problems
(Eckerson, 2002)

Without a data quality solution in place, it is impossible to get a complete and accurate customer view. Practically every CRM function is more precise, more efficient and less costly with the support from a unified customer view across accounts and across the company (Trillium, 2002).

There is a significant gap between perception and reality regarding data quality in many organisations. Current data quality problems cost U.S. companies more than USD 600 billion a year (Eckerson, 2002). Without correct data, organisations are not able to make good decisions because they have no accurate understanding of their business issues.

3.4.2 Nonexistent end user support

Support is an ongoing service for CRM end-users. The support staff helps with questions and with small system changes. Their job is to abolish every upcoming issue that could interfere with the every day CRM business.

The help desk of a business is the standard bearer for information services. It is a strategic tool for the way a company positions itself towards their employees and customers

(Greenberg, 1998). One time efforts and incentives do not create lasting change management elements. Although they may be good initial motivators, a successful implementation only comes from true employee support (Ganeshram, 2003).

Who will support the new tool? This is a common question after the CRM solution is implemented. Often businesses need to hire specialists because they do not have the knowledge to host the system. Therefore, nobody feels responsible to take care of the new CRM solution, because it is often an ungrateful job. However, without a competent support team it is very difficult to get acceptance by people who use the system for the first time. It is important to make it clear to everybody that they need to direct their support requests to the correct group of people from the beginning. Otherwise, it will be difficult to change their behaviour later on. If support and services requests are not handled correctly and consistently, additional obstacles can occur (Daly, 2003).

Another typical support issue is that the team is too small to handle all incoming problems. Therefore, some IT organisations select a standardized end-user reporting tool and assume that users can take care of themselves. This can be a fatal mistake, because this can mean too much work for employees and then they rather stop using the system completely.

For major issues that cannot be handled by key-users, IT departments or other service units outside the company provide their services to help. If no service contracts were signed with these external services units, high additional costs could arise. This is an often underestimated matter of fact. The worst case is a breakdown of a productive CRM system, which can be avoided with an ongoing support function provided by system experts. Many companies undervalue the risk of small modifications towards the complete system.

Most CRM failures are not due to technical issues, but are caused by resistance from employees or customers to use the system. End-user foot dragging has driven up costs by 300% to 400% in some projects (Cooper, 2003). This is due to the fact that many organisations are unable to plan their training activities. Surveys indicate that just 18% of companies accurately estimate their end-user training and support requirements (Hall, 2003).

3.4.3 Insufficient stakeholder analysis

There are many interest groups who are affected by a company's performance and who have claims on its performance. These people are the stakeholders; they are persons,

groups or institutions with interests in the project. Figure 3.15 shows that stakeholders can be separated into many parties that are involved in a company's operation.

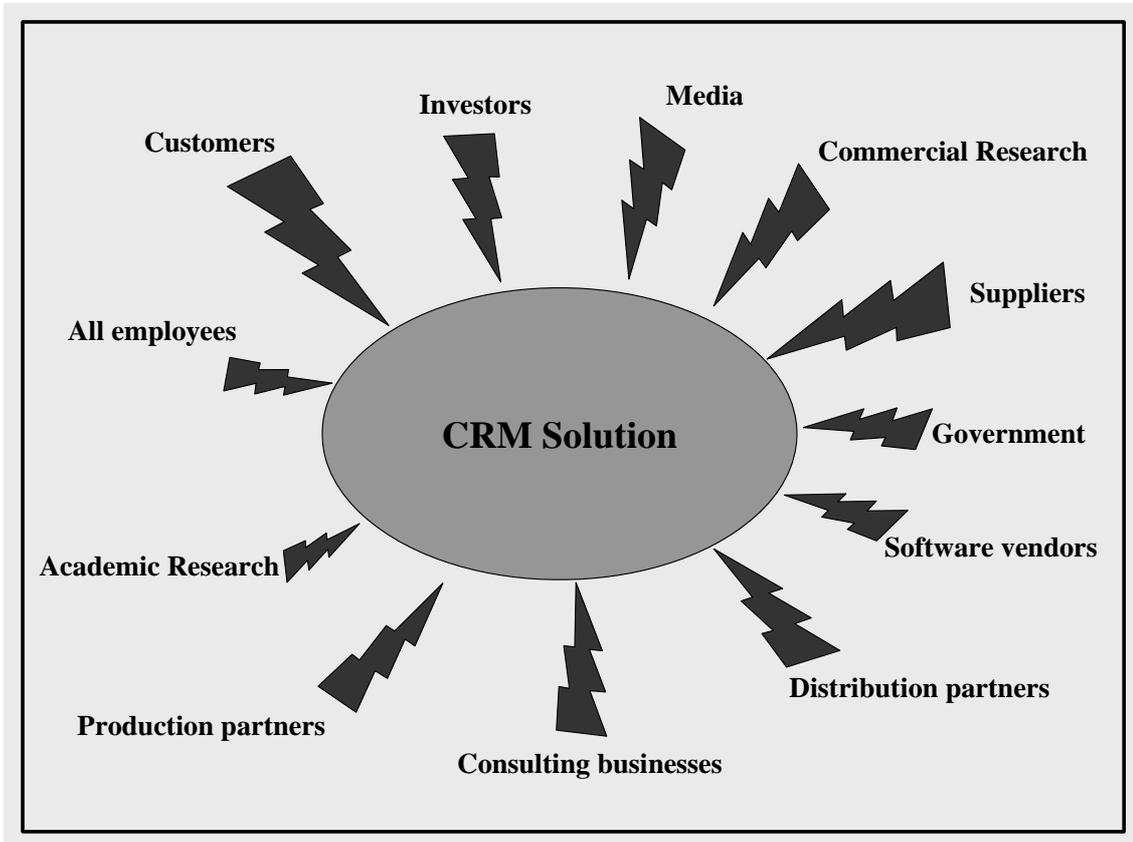


Figure 3.15: CRM stakeholders

Primary stakeholders are direct communities of interest. Secondary stakeholders are the intermediaries in the process, and may include government agencies and other institutional bodies. They all have to be taken into consideration in the development of the CRM philosophy (Hitt, et al., 1997).

Stakeholder analysis is the identification of the key stakeholders in a CRM project, their interests and the ways in which those interests affect the success of the project (Allen & Kilvington, 2001).

The purpose of analysing stakeholder requirements is to determine the needs of the CRM solution. It contributes to project design by identifying the goals and roles of different groups and by helping to formulate appropriate forms of engagement with these groups. In addition, it helps to answer the question what CRM means to everybody who is involved in that business. This analysis is not a wish list but an indicator of what needs to be accomplished to make this CRM implementation successful.

The problem is that a business cannot choose one or two stakeholders to interact with. It has to deal with all of them, directly or indirectly, whether it wants to or not. Failure to obtain the right involvement from all stakeholders can translate into acceptance issues during and after the project. Furthermore, the way in which the company interacts with its stakeholders will accordingly constrain or enable future choices available to the business. This is a very critical issue when every stakeholder has an impact on the CRM processes.

Forty-seven percent of companies report serious challenges with end-user adoption that often put projects in jeopardy in 2002. In more than 50% of the cases companies implemented a CRM application to meet corporate needs but failed to take the needs of employees, partners and customers into account. In other words, they ignored the end-user community. A reluctant user base is one of the main reasons why CRM projects often fail in the end. 70% of CRM projects fail because they are not directly related to the software itself, but to internal politics or poor processes (Morphy, 2002).

The stakeholder input is crucial. Projects that do not have a high degree of stakeholder buy-in and an ongoing involvement during all stages of the project, magnify the risk of misunderstanding the project requirements and become highly susceptible to shifting requirements. A common mistake is to interview the stakeholders at the beginning of the project and then never talk to them again until they test the software. Dealing with misunderstood or shifting and creeping requirements can cause delays in the project schedule. Without the input and agreement from all stakeholders the CRM solution can easily fail.

On the other hand, all involved parties have in most cases a different view towards CRM. They are more or less involved in a CRM project. The perception and demand of these interest groups towards a good CRM system can be very diverse. The stakeholders are very heterogeneous and have therefore even different perspectives within the same group.

Figure 3.16 shows that in most cases the expectations from all key stakeholders are met. However, around 25% expected more of CRM.

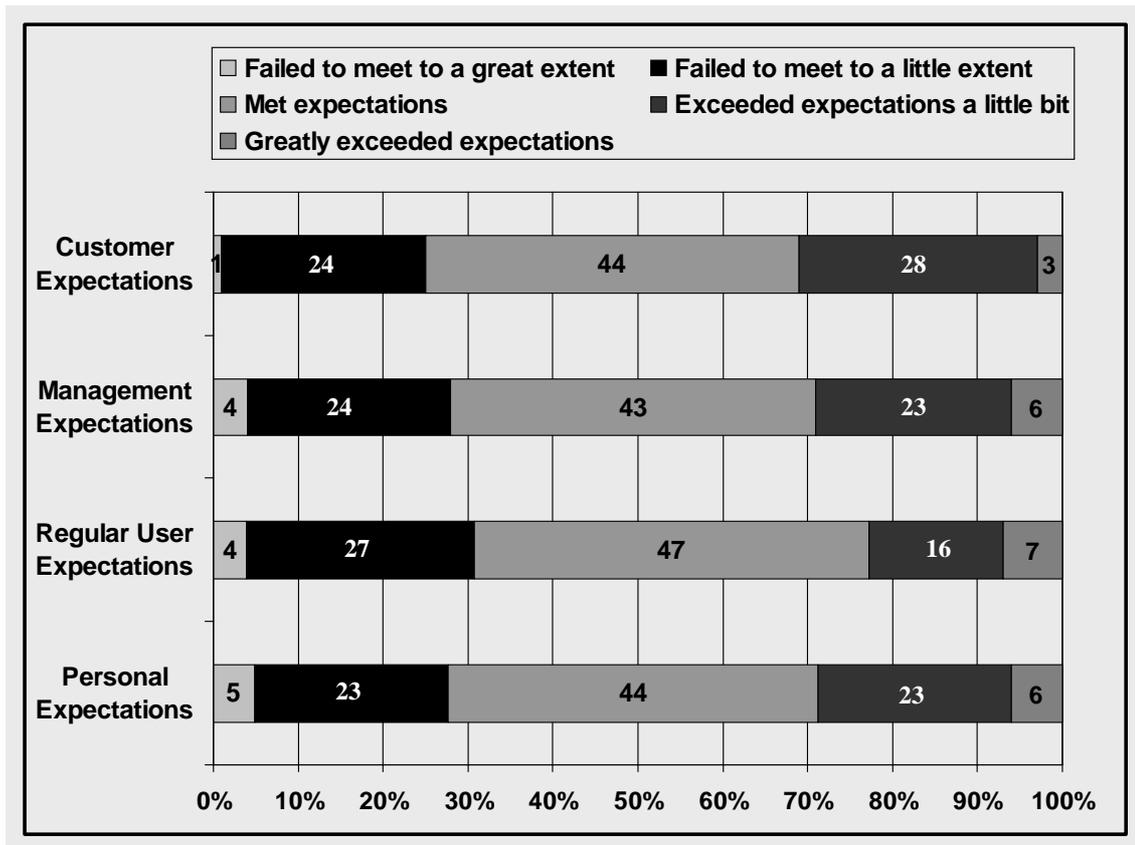


Figure 3.16: Expectations of key stakeholders

Source: (Lee, et al., 2002)

Many stakeholders only understand their area of interest; they do not see the "big picture" and the overall impact of a CRM system. This is a crucial issue, because most stakeholders consider only their own priority and do not want to give in because of others' needs. The longer it takes to find a mutual basis, the more difficult and expensive they are to rectify. This also means that the later in a project these problems happen the greater impact they have on the project schedule.

Stakeholder conflicts can contribute differently to project failures. Stakeholders often have personal reasons for not being able to work together. Ego and pride get in the way of many projects usually ending in some disaster. Other projects fail because the developers do not know who the "real" stakeholders are. Other projects, especially smaller projects within larger projects, never go anywhere because the internal stakeholders never agree on priorities (Rosenfeld, 2001).

3.4.4 Project scope disagreement

The scope is the overall view of what a system will deliver. It is a detailed project definition of everything belonging to the CRM implementation. This definition clearly explains what is included in the project and what is not. The goal of the scope is to create the basis of all planning and control mechanisms to stay on track and deliver everything agreed on. Thirty-four percent of technology projects fail because of no defined objectives or lack of familiarity of project scope and complexity (Tanner, 2000).

The right choice of scope can be critical to all projects, especially if it is not based on customer expectations, which can vary between customer segments depending on the industry. For example, the needs of a retail customer are significantly different from a wholesale or institutional customer. In case the scope does not consider this and combines both segments in one project, serious problems are likely to appear (Shah, 2003).

Another common CRM project challenge is to avoid the gradual expansion of the project scope. "Scope Creep" is the insidious growth in the scale of a system during the life of a project. An example is a system designed to hold customer records, but it is then decided it will also deal with customer bills, that these bills will be provided on the Internet and so forth. It is very difficult to control "Scope Creep" without a strong definition of the original scope of a project. It can lead to overruns of both project budget and implementation time that can also have an impact on the quality of the project deliverables (Coley, 2002).

Figure 3.17 shows some CRM features that have gaps in implementation times and business benefits. It clarifies that not all CRM features have the same value to a business. Some are more beneficial than others.

Therefore implementing every CRM feature at the same time can result in neglecting the important basics. In those cases, the scope includes "the nice to have ones" and not "the must have ones". In addition, if the definition of scope is too wide, the analysis and implementation will become too complex, will take too long and people will lose their interest (Shah, 2003).

However, to create a working scope can take a few weeks depending on the involved parties, a period many companies are not willing to accept. In order to save budget, they skip this scope definition without being aware of the long-term effects.

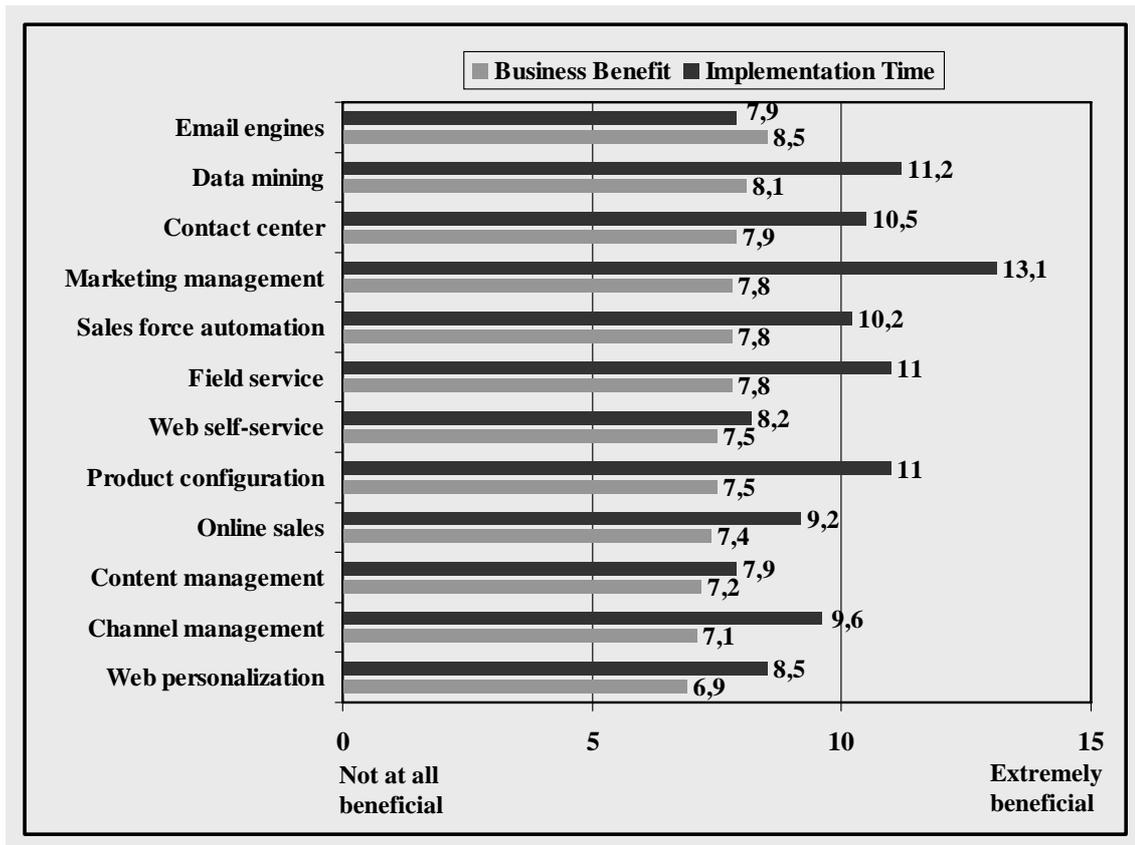


Figure 3.17: Average implementation time vs. average business benefit

Source: (Johnson & Higgs, 2001)

Without a well-defined scope, it is impossible to write a precise business blueprint. A CRM blueprint is the implementation plan that describes how the system needs to be set up including all requirements and delivering the expected results. Some companies underestimated this issue, start without a detailed description of all implementation steps and realise only later how many interpretations of the same issue exist. Everybody involved in the project can have a different understanding and a solution possibility regarding promised and desired functionalities.

3.4.5 Misleading communication

A communications strategy is critical in a business and project environment with continuous organisational change. A focused communications strategy promotes upward communication and helps employees receive and understand the proper information at the right time. Based on research of 913 companies it was concluded that 57% of all companies do not have a formal employee communication strategy (Wyatt, 1999).

Positive and regular communication will help users and developers to clearly understand the business requirements. It will help the project to stay on track and avoid any unnecessary detours.

The reason why 20% of technology projects fail is a lack of communication (Tanner, 2000). Especially for a CRM project with input from all stakeholders, no or not enough communication can be a reason for stoppage anytime.

Communication between IT departments and their boards on CRM projects is still poor. Even though 60% of companies now have a designated head of CRM, performance reports take at least six weeks to reach chief executives, while 5% of chief executives never receive reports at all (Thomas, 2003).

There is a direct relationship between the size of a project team and the difficulty in keeping all team members up to date on changes, progress, tools and issues. Such problems are common during big projects, especially if people are working at different sites. In many troubled projects, there is not one person who has an overview of the whole project. Each project member needs to know how his or her piece fits into the entire architecture. That is the only reason why adaptive consulting partners rarely lead a team of more than five members. Instead, they opt to form multiple teams working on individual objectives. Furthermore, each of these smaller teams has a manager who is part of the management team. In extreme cases, multiple management teams exist and an executive team is formed. The focus of each team, especially the development team, is strictly enforced and rigorous in definition (Rosenfeld, 2001).

A common project failure is not to distinguish communication ways. There are three different types of communication during a CRM implementation. All three have different impacts to the success of the project. These three communication ways are illustrated in Figure 3.18.

The first one is the communication within the project itself. No or not enough communication during the CRM implementation can have the effect that everybody believes the project is on the right way to be successful because there are no outstanding issues. On the other hand, there is a lot of unnecessary communication, which wastes time and is not productive. The wrong way of communication can cause more problems than no communication at all. Due to the wide scope and diverse employee groups that are involved in most CRM projects, it is important to understand their needs and how they are impacted by the communication that is being delivered (Tanoury & Ireland, 2002).

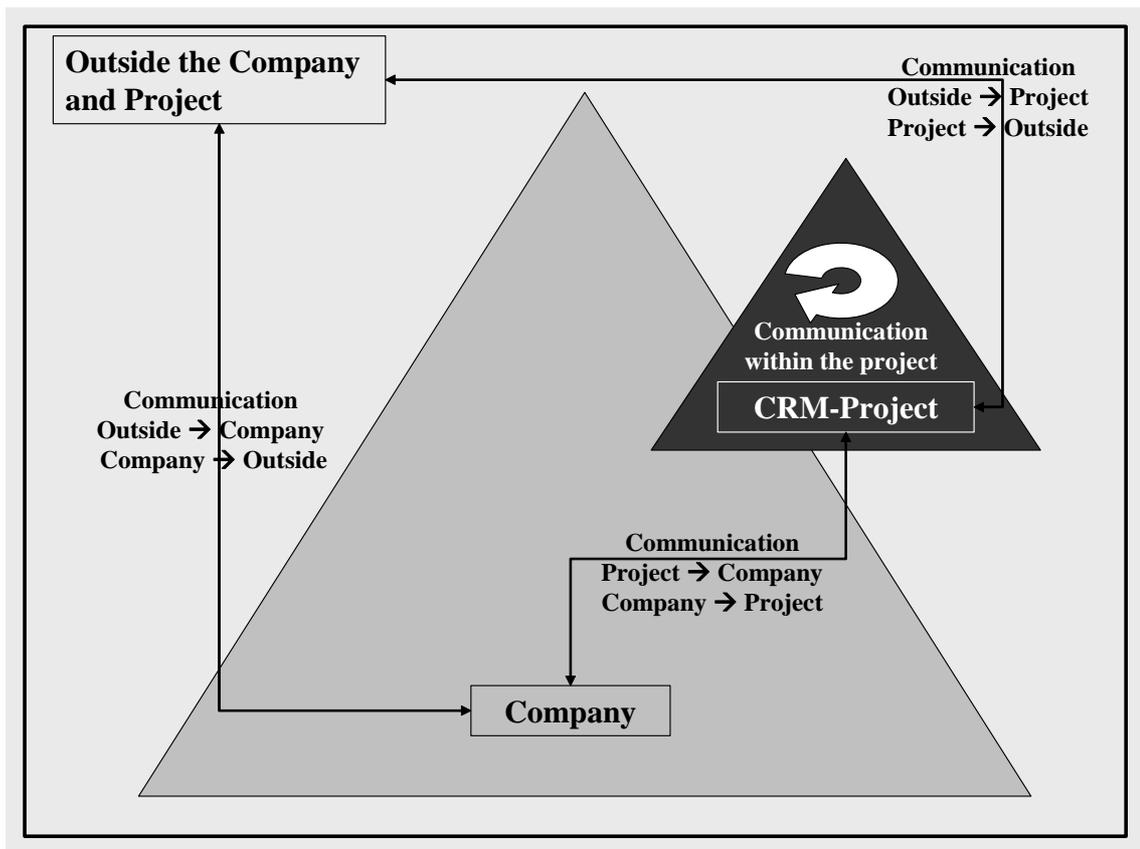


Figure 3.18: Communication possibilities during a CRM implementation

The second problem is the communication from the project into the company and from the company into the project. Every way of communication to outsiders of the project can harm the CRM project because it can create rumours and uncertainty. Information that leaves the project can be misleading to people that are not involved. This can create resistance from both sides which will make working together more difficult (Teichmann, 2002).

The third problem is the communication leaving the project and the company to the outside business world. In the event that this sensitive information is not strictly filtered, it can have a strong impact in the hands of the media and competitors. A lack of communication between internal departments as well as with outside suppliers and partners can break the chain of information and result in rejected commitments and, as a result, in lost customers (Clough & Duffy, 2002).

For IT solutions delivered by an external supplier, the client-supplier relationship is considered as very important to the success of the CRM project. Communication is seen as the key to make this relationship work by 60 % of companies researched. End user

acceptance of the project is seen as vital by 91 % with communication strategies identified as the way to manage end user and client expectations (Aiken, 1998).

3.4.6 Inadequate change management

Change management can be understood in two ways. First it is the complete set of processes employed to ensure that changes are implemented in a visible, controlled and orderly fashion. Second it is all planned and performed activities to govern systematically the effects of organizational change.

In literature different criteria are used for defining change management. In business and technically oriented approaches the economic success is usually the key factor. In socially oriented approaches change success also depends on organisational influences. It is supposed that long lasting results can only be achieved when the goal of organisational change is the self regulation of the system (Baitsch, 1986; Ulich & Alioth, 1977). The focus is not the short term productivity increase; it is the long term development (Wimmer, 1999).

This definition is also the leading one for CRM projects. CRM implementations usually include many changes in the daily work routine of the employees. Change management is the process to help the involved workforce to get familiar with the new software and adaptive to the new customer orientated environment. This is not a short-term effort, because at the same time as some one is trying to manage change of selected entities, there are other change processes ongoing. These processes might have consequences, which affect the events being "managed" (Wikström, 2004) .

CRM solutions build on new ways of thinking, which many organisations do not currently practise. In case this is not taken into consideration, implementation may meet resistance from employees and the value of CRM may be significantly reduced (Brown, 2000).

Many businesses fail to consider the users of a CRM system. The technology is a prerequisite but CRM depends on the input of all employees. If the users resist the system, it is worthless to the business. Therefore, CRM has to become an essential part for all end users in their daily working routine. Forty-seven percent of all CRM projects go live and technology aspects of the project are considered a success, but business changes and adoptions fail (Johnson, 2003). Table 3.3 presents many reasons why employees can have a resistance to change.

Table 3.3: Reasons to resist change

Reason to resist change	Explanation
The purpose of the change is not made clear.	Mystery and ambiguity often cause anxiety. The fear of change can be as destroying as the change itself, because it produces similar worries and unrest.
People affected by the change are not involved in the planning process.	It is always easier for an employee to support what he or she creates instead of what he or she has being told.
An appeal is based on personal reasons.	Employees only respond with a meaning to a personal plea if, at the same time, they see that it solves a problem, gets something done or reaches a goal.
Habit patterns are ignored.	Without the knowledge about norms and standards of those who will be affected it is difficult to understand employees.
Poor communication about the change.	Clumsy processes and mixed messages that confuse people will likely alienate potential supporters.
Fear of failure.	Many people are concerned with whether they have the ability to master the change. They may choose to wait on the side-line rather than to risk the project's failure, which could result in the delay of project initiation and delivery.
Excessive pressure is involved.	Pressure can harm the success of the change process because the employee is overloaded with news and work.
The "cost" is too high, or the reward inadequate.	Employees are more likely to make adjustments when the rewards for the change exceed the pain of change, but sometimes those rewards are not always obvious.
Anxiety about personal security is not relieved.	In any change process the employees fear personal security issues like keeping their jobs.
Lack of respect for or trust in the initiator.	Depending on whoever is leading an attempted change, the employees have a different feeling to the change itself. The relationship to the responsible person matters.

Source: (Hove, 2000)

The change in behaviour is one of the biggest problems during a CRM implementation. More than 45% of the decision makers in companies with USD 500 million or more in revenues see a significant obstacle in their CRM efforts in the resistance to change processes (Temkin, 2003).

Investing in CRM technology without a customer-oriented cultural mindset, inherited hierarchically throughout the company from the CEO, is like "throwing money into a black hole". Customer care is not a technology-driven company capability. Resistance of employees is not to be seen as a negative factor. It is a natural energy people experience when confronted with change. It is their way to express their feelings to understand how CRM will affect them (Brendler, 2002).

People will express resistance differently based on how they perceive the change. Resistance can be overt or covert. What employees say may not be what they mean, because many of them do not feel comfortable expressing honest emotions in a corporate setting (Winer, 2001).

Many managers do not realize this at the beginning of a CRM implementation. Even if they know that employees are an important key factor to a successful CRM system, they do not know how to change their composition of behaviour. The decision makers often do not understand why their employees react the way they do. They are not aware that 90% of the reasons that influence the behaviour of the workforce develop from an informal system that cannot be dictated by management. Managers can only change their environment, but not the inside of an employee. The "iceberg-model" in Figure 3.19 visualizes that there is much more than only facts and figures influencing behaviour.

Change management processes can put a lot of pressure on a single employee and affect the daily work in a negative way. Changes force employees to regress to what they know and avoid what is new. They would rather continue to play the old game and manipulate the old and familiar system than to experiment with a new one that may sound good, but is not proven. Therefore, a change in mindset as well as in the corporate culture must first happen before companies can expect their employees to embrace the new CRM technology (Gerson, 2002).

Management often assumes that if people like a change or think it is a good idea, they will not reject it. This is only partly true because a significant change can be a disruption of some employees' expectations about the future. This disruption can cause a loss of control and they will resist this loss even if they believe that this is a good change.

However, changes are much easier when people are in favour of it. In case they are not, the process from resistance to agreement of change can be very long and difficult.

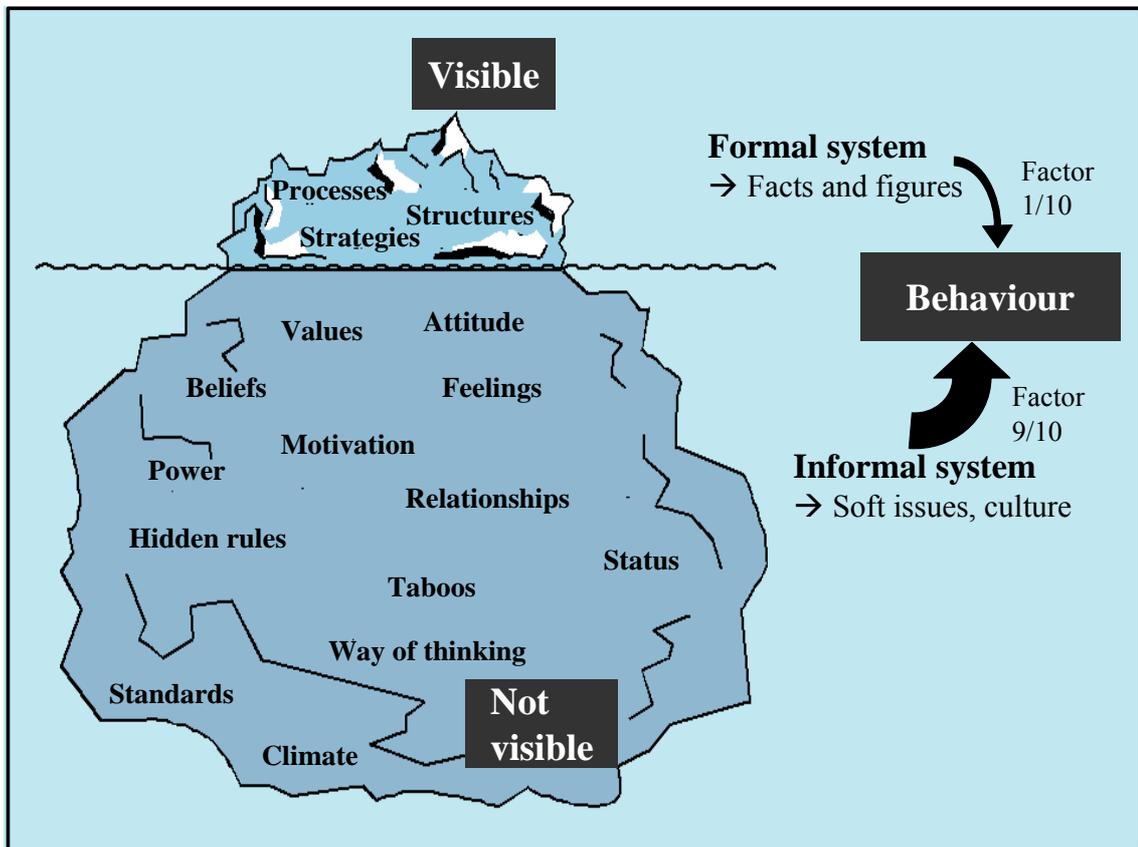


Figure 3.19: Composition of behaviour

Source: (Höfliger, 2000)

Figure 3.20 shows the way people react when they consider the change as a bad idea. It is based on the work of Dr. Elisabeth Kübler-Ross and her book "On Death and Dying" from 1969 which identified the eight stages that terminal patients go through. These stages can be adapted to organisational changes in CRM projects.

1. **Stability:** This phase precedes the announcement of the change and represents the status quo.
2. **Immobilization:** The initial reaction to a negatively perceived change is shock. The change may appear to be so unreal that the person cannot even fathom it.
3. **Denial:** "If I ignore it, it will go away." The person is hoping that the changed project is not real.

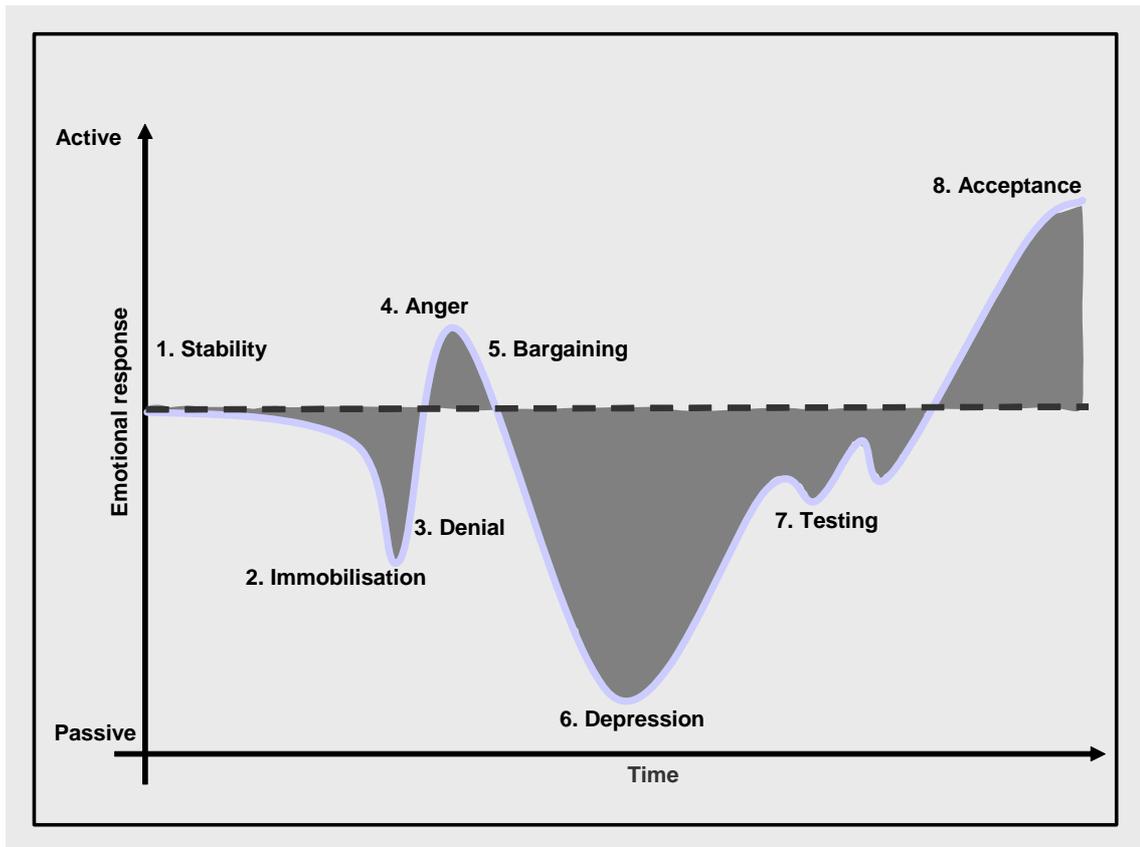


Figure 3.20: Change management process

Source: (Marshall & Conner, 1996)

4. Anger: This phase is characterized by frustration that often becomes real and is directed at other employees.
5. Bargaining: People begin negotiating ways to minimize the impact of the change. These might include requests for deadline extensions, modifications to the changed initiative or even reassignment.
6. Depression: Once the bargaining has failed, a person often gets depressed at the realization that the change is real and permanent. On the positive side, this represents the beginning of acceptance.
7. Testing: Similar to bargaining, except that the person is accepting the change and figuring out how to succeed under the new conditions.
8. Acceptance: Completion of the change.

3.4.7 Underestimated risk management

There is a wide range of definitions associated with concepts and conditions relating to risk management. Risk management relates to the process of reducing potential loss to an acceptable level. Such losses may be physical, social, emotional or financial. In CRM all these risk factors are involved. Risk is the probability of occurrence of an undesirable event with the magnitude of its consequences ($\text{Risk} = \text{Probability} \times \text{Magnitude}$). Risk managers depend on the foresight and control to reduce these two variables to an acceptable level (Brown, 1998).

Risk management is more or less performed in any business. Usually it is used for daily operations, but not for unique circumstances like CRM. Any CRM implementation is subject to risks. Some risk categories include product size, business impact, customer relationship, processes, technology, development environment, staffing, time schedule and costs. In case potential risk factors are neglected, they can bring an unprepared CRM project to collapse. Failure to manage risks can be a reason for any CRM implementation to be discontinued. Risk Management is a facet of quality using basic techniques of analysis and measurement to ensure that risks are properly identified, classified and managed.

During a CRM implementation, businesses face the constant trade off between costs to avert risk and the expected loss due to risk. The optimum benefit is the balance of both. Risk and the opportunity for advancement are related to each other. The opportunity for advancement cannot be achieved without taking risk. While doing nothing to minimize risk can prove costly or disastrous for a CRM implementation, the cost to avert all risk can be exorbitantly high. The costs of time, money and effort are balanced to provide minimized acceptable risk and not to become a major drain on the project itself (Charette, 1989).

Companies often forget to analyse and evaluate CRM risks because the daily business has a higher priority than the CRM project. In addition, the project team is busy implementing the CRM solution not paying attention to the overall risks.

Since many people have a different interpretation of risk, it is very difficult to have an efficient risk management next to the daily work routine.

Depending on their risk tolerance, companies have a different relationship towards dealing with CRM risk factors. Figure 3.21 shows potential risks that could have a significant impact on an organisation.

There are six prime activities of a risk management process, namely risk identification, analysis, planning, tracking, controlling and documentation (Jones, 1998). Not paying attention to any one of these six can cause a CRM implementation to fail because the process chain will be broken. There are many potential risk factors that could harm any company.

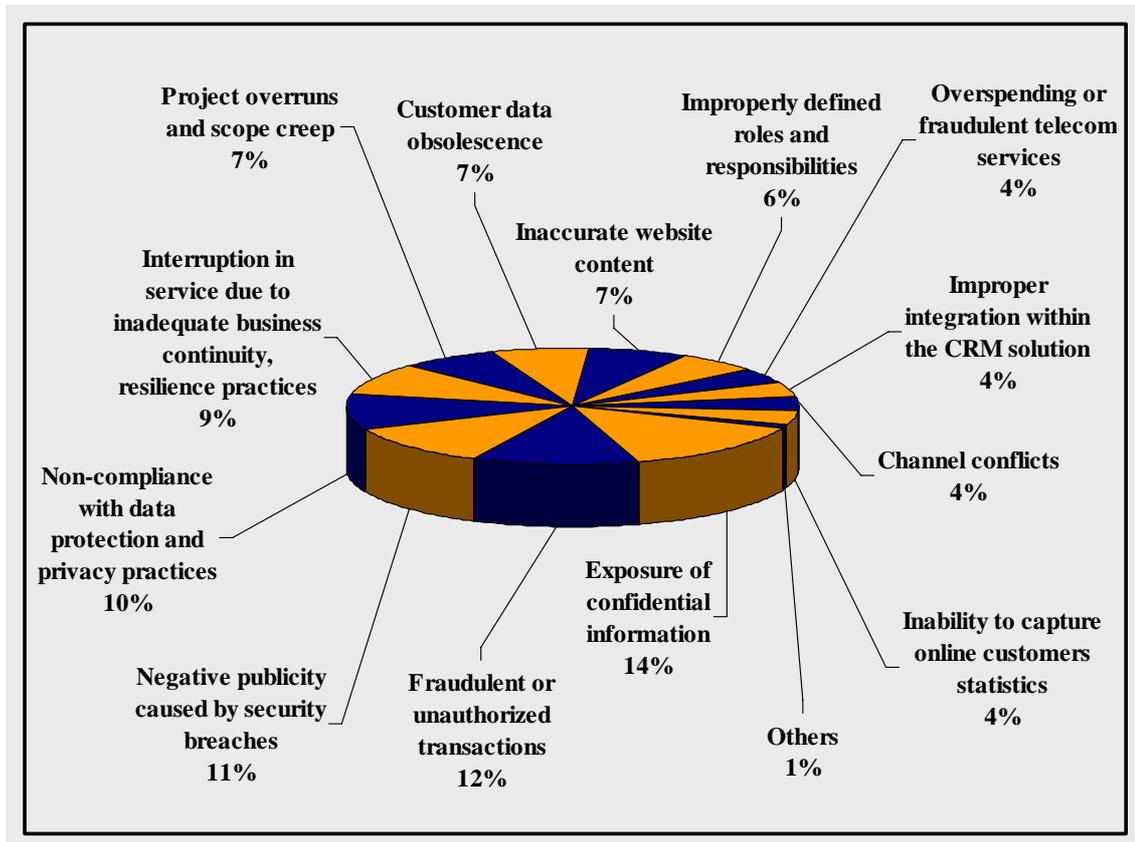


Figure 3.21: Organisation's risk tolerance: Potential risks that would have a major impact on the organisation

Source: (Erickson & McLaughlin, 2002)

Traditional risk factors such as data confidence, privacy, security and trust represent a large risk area. Underestimating these traditional risk factors in combination with the new customer-oriented philosophy can cause major problems to any business.

Like all projects, software projects have risks. Risks that were not foreseen and planned for frequently cause major project issues and even failures. Such risks could be due to problems within the project or due to external events.

3.5 Conclusion

The purpose of this chapter is to demonstrate a variety of reasons that can cause a CRM solution to fail. The results were twenty-one identified CRM problems or problem areas. It was outlined that any one of these issues can harm the success of a CRM solution.

These failure issues are summarised and grouped in Figure 3.22.

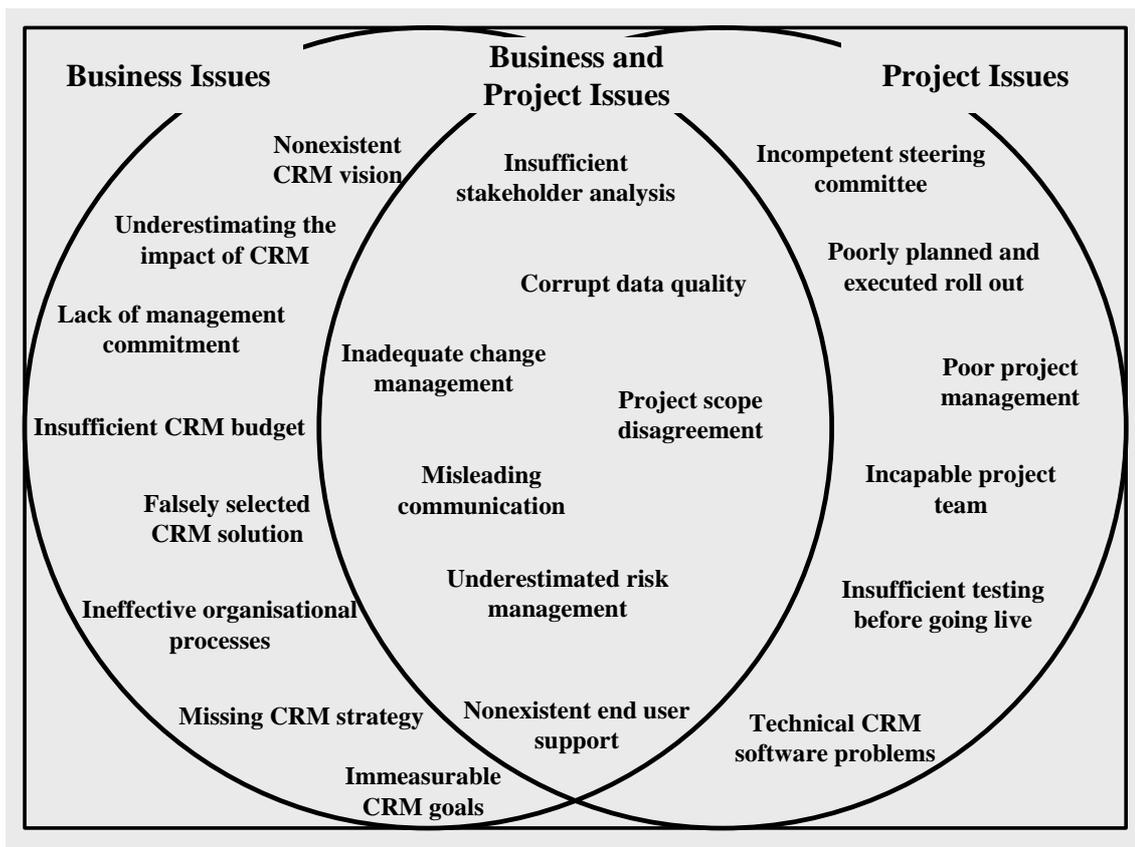


Figure 3.22: Twenty one identified CRM problems or problems areas

From the study of literature and the personal interviews it can be concluded that the implementation of CRM in any business includes many risk factors and a great potential for failure. Most CRM implementations start too naive, without thinking about possible problems. Many businesses follow the strategy to solve problems instead of avoiding them. They are not aware of issues that have to be handled before a CRM implementation can begin.

There is no CRM research that is all inclusive, because most CRM problems are recognized and proven by separate research. The majority of studies focus on single reasons for failure. They do not take into consideration the relationship among these problems.

Therefore these twenty-one CRM risks will now be used as the foundation for the empirical research.

CHAPTER 4

Empirical research and results

4.1 Introduction

The goal of this chapter is to get reliable research results to develop a winning CRM strategy based on the twenty-one CRM risks identified in the previous chapter. The following conditions will be taken into account:

- The probability that a specific problem will appear at all during a CRM project.
- The threat of a single CRM problem to the success of a complete CRM project.
- The timeline when a certain CRM problem is most likely to appear for the first time.
- The relationships between all CRM problems.

This chapter is divided in two major parts. The first part presents the research methodology and the second part the survey results.

The research methodology includes initial data collection, survey design, target group selection, survey piloting and final data collection. In addition, the structure and the content of all questions will be explained including the different research methods that will be used to analyse the outcomes of the survey.

The survey results will be presented, but not analysed. The analysis and interpretation will take place in the fifth chapter. The interpreted outcome of the survey will be the basis to present a systemic perspective of a CRM solution for businesses.

4.2 Research methodology

4.2.1 Target group selection

All companies that are using a CRM system or are in the process of implementing one belong to the population that this survey investigates. Since too many companies belong to this population it was decided to use a representative sample.

The aim of the theory of sampling is to get as much information as possible, ideally all the information about the population from which the sample has been drawn. From this population it needs to be possible to estimate the parameters of the population or specify the limits or ranges within which the population parameters are expected to be with a specified degree of confidence. The logic of the sampling theory is the logic of induction, which means to go from something particular like a sample to the general like the population. Since a sample is never the population all results will have to be expressed in terms of probabilities (Krishnaiah & Rao, 1988).

To assure qualified answers and results it is important that only companies and employees participate in this survey who have a great deal of CRM experience. To get different points of view these employees can be from different levels within their company, but they need a strong affinity to CRM.

Therefore, it was decided to use selected companies that meet the following criteria as a sample:

- The target group should be industry and software independent to avoid biased responses.
- CRM should be "alive" in their daily business.
- They should be the leader in their industries to learn from their knowledge and CRM experience.
- CRM is becoming more and more a key strategy for medium and small companies, but large companies are the leaders and have most experience with success and failure of CRM (Baumeister, 2004).
- The companies should have many different customers.
- The companies should have high revenues coming from their valuable customers.
- They should be early adapters of software based CRM solutions to understand the specific risks.
- The companies should have many people experienced in CRM who are able to provide valuable input to the survey.

Taken these target group requirements into account it was decided to use the "Global Fortune 500" companies of the year 2003 as a sample.

The list includes the 500 companies with the most revenue world-wide and provides additional information like profits, assets, shareholder equity and employees. Table 4.1 shows the top 500 companies summarised by their home country.

Table 4.1: "Fortune Global 500" of the year 2003 summarised by country

COUNTRY	# of companies	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$	# Employees
Australia	6	82.698	(379)	303.537	54.784	475.692
Belgium	4	98.595	2.578	1.154.599	32.516	283.575
Bermuda	2	50.546	(9.167)	71.893	25.229	342.500
Brazil	4	65.690	4.225	162.530	16.768	254.383
Canada	14	182.033	4.141	1.140.803	85.390	789.677
China	11	233.958	13.389	1.997.357	216.011	4.047.957
Finland	3	51.003	3.616	62.437	29.732	107.879
France	40	1.098.567	(14.035)	4.461.657	348.050	5.163.259
Germany	35	1.214.669	(3.462)	6.222.959	394.427	4.280.706
India	1	22.506	1.360	11.978	4.091	37.829
Italy	9	267.452	2.914	1.317.006	121.082	697.304
Japan	88	2.473.528	(2.259)	8.067.066	699.930	4.822.935
Luxembourg	1	23.194	(176)	27.111	7.064	104.241
Malaysia	1	21.430	3.975	46.845	20.620	28.378
Mexico	2	49.656	(2.851)	83.212	10.536	202.476
Norway	2	50.958	3.209	59.563	19.181	59.730
Russia	3	43.919	8.775	104.774	74.710	560.700
Scotland	1	36.035	4.619	663.279	43.551	111.800
Singapore	1	13.379	(84)	8.394	4.542	95.000
South Africa	1	13.650	236	79.800	4.485	46.462
South Korea	13	300.673	9.280	484.357	91.487	329.211
Spain	5	124.320	1.902	795.433	83.587	409.072
Sweden	6	85.301	242	363.796	39.897	365.306
Switzerland	11	320.461	2.098	2.266.369	157.863	862.356
Taiwan	1	13.072	372	36.973	1.975	31.745
The Netherlands	11	337.043	(2.791)	2.144.182	106.673	1.103.922
United Kingdom	34	1.080.310	36.110	4.639.133	622.246	3.100.172
USA	190	5.374.397	65.636	15.830.306	2.219.410	17.778.393
TOTALS	500	13.729.042	133.475	52.607.346	5.535.837	46.492.660

Source: (Fortune, 2003)

4.2.2 Data collection method

The second decision required was to select the best research methods to gather the data to analyse the twenty-one CRM risks. There are many different research approaches that could potentially be used. The literature suggests a variety of methods to collect data (Oppenheim, 1992; Leedy, 1985).

There are several concerns with surveys in general. It is well recognized in the behavioural sciences that they are not the perfect way to collect data, because surveys require subjects to recall past behaviour and this can easily be influenced by subjective judge-

ments and answers (Schwarz, 1999). This is the reason why some experts believe that observation captures behaviour more accurately (Comscore, 2001). This leads to the conclusion that the best survey method would be to collect behavioural data using multiple approaches (Rogers, 1987). Observations, focus groups, individual interviews, e-mail, Web-based, postal and random digital dial telephone surveys can be used in combination to improve results quality (Smith, 1997).

On the other hand there are many reasons why a multi survey approach is not the best solution. There are reasons like access to subjects, research costs and the scope of the research that make it impractical or financially unfeasible (Lazar & Preece, 1999).

Since a world-wide target group was selected it was decided to use an electronic survey. The technology provides an inexpensive mechanism for contacting many companies in any foreign country instead of through the postal mail (Sheehan & Hoy, 1999). The costs per response decrease instead of increasing significantly as sample size increases (Watt, 1999).

Electronic surveys are becoming increasingly common and research comparing electronic versus postal surveys is starting to confirm that electronic survey content results may be no different than postal survey content results, yet provide strong advantages of speedy distribution and response cycles (Swoboda, et al., 1997). In addition, they provide the ability to conduct large-scale data collection (Couper, 2000).

The challenge is to translate paper-based questionnaires into electronic formats. The electronic survey has different technical issues that have to be followed to get successfully results (Smith, 1997; Kehoe & Pitkow, 1996; Yun & Trumbo, 2000):

- Support multiple platforms and browsers.
- Prevent multiple submissions.
- Have the ability to present questions in a logical or adaptive manner, if needed.
- Provide multiple opportunities for saving the work in long questionnaires.
- Collect both quantified selection option answers and narrative type question answers.
- Provide feedback "Thank you" upon completion of the survey.

Two forms of electronic surveys have emerged in the last fifteen years. The first, asynchronous e-mail surveys dates back to 1986 (Kiesler & Sproull, 1986). The second, synchronous Web-based surveys, started about 1994 (Kehoe & Pitkow, 1996).

Both forms of electronic surveys follow principles of the paper questionnaire design (Oppenheim, 1992; Dillman, 2000; Preece et al., 2002). These principles include the development of question scales and multiple choice answers from qualitative exploratory interview data, elimination of question bias and the use of clear, unambiguous and concise wording.

Successful electronic surveys include, like postal ones, informed consent information, rating definitions and examples, rating scale formats such as Likert type, semantic differential scales and nominal scales, and a set of demographic items (Preece et al., 2002; Witmer, et al., 1999). In addition, open-ended questions can be successfully accommodated. Respondents were found to write longer and more self-disclosing comments than they do in postal mail surveys (Schaefer & Dillman, 1998; Bachmann & Elfrink, 1996; Loke & Gilbert, 1995).

However, e-mail surveys have significant technical drawbacks. They can be altered by the survey takers themselves (Witmer, et al., 1999). There is no way to prevent someone from changing, eliminating or adding questions to the survey. E-mail surveys have also been found to be confusing to complete by respondents (Sheehan & Hoy, 1999). This may be caused by the fact that e-mail survey completion is dependent upon the e-mail software if the survey is included in as part of the e-mail or on the word processing software if the survey is attached as a document. How respondents enter the answers to the survey question may vary because of this. The researcher does not have control how the questions are displayed by software and how responses are entered into the e-mail survey text (Moser, 1995).

Like e-mail surveys, Web-based surveys have the advantage of low cost and quick distribution. Additionally, Web-based surveys provide the ability to transfer survey responses directly into a database, eliminating transcription errors and preventing survey alteration by the survey respondent. The results of an Internet survey are saved in an electronic way and in a predefined format. Therefore they are available in real-time and ready to analyse (Bosniak, 2002).

Web-based surveys face an additional challenge. The screen design is more complex and must be developed in HTML and supporting scripting and database languages (Stanton, 1998; Preece, et al., 2002). This allows Web-based surveys to provide addi-

tional format and response control like radio buttons to prevent multiple answers when only one is called for. The Web-based survey designer has a wide range of textual options, format control and graphics sophistication not attainable with e-mail surveys. The advantages include links, clicks, defaults and menus (Preece, et al., 2002). Links provide the ability to directly reference definitions or examples at multiple points in the survey. Clicks eliminate the need for textual data entry for all coded questions. Defaults, hidden or displayed, reduce non-response to questions. Menus, drop-down or displayed, provide an economical way to display many response options without cluttering the survey screen (Yun & Trumbo, 2000). This allows a respondent to give quick answers, which is useful for complex topics with a large amount of data.

Additionally, images, animation and colour enhance survey presentation, but have disadvantages of increasing download time and may also affect the answers subjects do or do not provide (Couper, et al., 2001). Browser settings, user preferences and variations in hardware put the user in control (Couper, 2000). Such variation and resulting poor design from the misapplication of Web-based technical capabilities increase the likelihood of response error and defeat Web-based survey advantages. It was found that surveys with multiple or graphic designs that do not make clear what the respondent is to do resulted in higher drop out rates than those surveys using more straightforward, plain designs (Dillman, 2000).

Both coded and open-ended questions can be accommodated in Web-surveys. It is possible to get quantitative and qualitative statements in a standardised format. This allows a good comparison of data unlike any interview method. In a study using a Web-based survey where open ended questions were located after a set of coded questions, over 70% of the respondents provided additional information and explanations through the open ended question opportunity (Knapp & Heidingsfelder, 1999).

In consideration of the advantages and disadvantages of different survey methods to analyse CRM risks it was decided to use a Web-based survey. The online questionnaire was set up on the domain "www.crm-success.net".

4.2.3 Survey design

4.2.3.1 Survey structure

In the third chapter different CRM risks were listed and it was explained why they could become a problem. These twenty-one risks were identified in literature and interviews. They formed the foundation of this online questionnaire and were separated in four different types of questions.

Every question type was represented on one page of the questionnaire and arranged in the following logical order:

1. The first page consisted of some general questions about the interviewees and the companies they work for.
2. The second page was a longer questionnaire about the possible danger of different CRM risks.
3. The third page analysed the time-line when a certain CRM risk appears for the first time.
4. The fourth page was the most complex one; it asked the interviewees to relate different CRM risks with each other.

At the end of every survey page was the "next" button, which had two functions. First the interviewee was directed to the follow-up page and second all answers on this page could be saved. The results of this survey were saved online. To avoid an unexpected loss of data the actual status was downloaded weekly.

The survey ended with a separate "Thank you" page where the participants could leave their e-mail addresses to receive the results of the study as an incentive.

4.2.3.2 Question types

The survey was designed to get quantitative and qualitative results to build a strategy for successful CRM solutions. The answers should point out CRM risks to support management decisions.

To reach this goal a lot of information was needed. Therefore a variety of questions were developed, on the foundation of twenty-one CRM risks, to deliver input. To collect this knowledge, open- and closed-ended questions were used.

Advantages of closed-ended questions are that they are quick to answer, easy to code and have no difference between articulate and inarticulate respondents. This leads to a high objectivity in investigation and evaluation. The disadvantage is that they can draw misleading conclusions because of limited range of options. The interviewee has no possibility to give an answer outside a predefined list (Diekmann, 1995).

Advantages of open-ended questions are that they have a greater freedom of expression, no bias due to limited response ranges and that the respondents can qualify their answers. The disadvantages are that they are time consuming to code and a response can be misinterpreted (Bosniak, 2002).

Being aware of this dilemma, mostly closed-ended questions were used to collect comparable data to get a quantifiable output. However, to avoid misleading conclusions every participant has the possibility to leave other answers, personal experience or any suggestions in a free text field. Therefore, every survey page has a comment field where the participant can leave any statement. In addition a combination of both questions types were added, where the respondent can add additional CRM risks, but can also compare those only against the pre-selected ones.

The survey consists of simple and unambiguous questions with a clear instruction on how to fill in the answers. In addition, all questions have a consistent style using radio buttons, drop down lists or free text fields.

4.2.3.3 Contact channel

It was decided to send an e-mail including the link "www.crm-success.net" to all companies. An e-mail has advantages that it is easy to reply in case of any questions, it can be forwarded to any CRM expert within the company and it is always only one click away from the survey page. The following e-mail was send to the target group:

Dear Sir or Madam

I work as a PhD student on the improvement of Customer Relationship Management (CRM) projects. Therefore, I conduct an interdisciplinary survey that was developed to analyse CRM success. Please forward this mail to someone in your company who is engaged with CRM. Anyone who has CRM knowledge is fine.

The survey is in English, consists of 4 pages and will take 15 to 20 minutes of your time. In appreciation of your effort I will supply you with the outcomes of the survey if you leave me your e-mail at the end of the survey. You find the online questionnaire under www.crm-success.net. All your information will be treated strictly confidential.

Feel free to contact me at Sebastian@crm-success.net if you have any questions.

Thank you very much for your support.

Kind regards

Sebastian Bosse

The challenge of sending this e-mail was that the "Fortune Global 500" list only includes the Webpage address for every company, but not their e-mail address. Therefore, it was necessary to visit all 500 sites and search for an e-mail address or an online contact form preferably of the right recipient. One of these two contact options is the prerequisite that the companies can be invited to take part in the survey. Therefore, it was decided to contact the companies in two steps:

1. An e-mail was sent to all companies that have a valid e-mail address on their Webpage and given three month time to respond. After one and two months all companies that did not respond were contacted a second and third time.
2. The same e-mail was send to associates who had personal contacts to someone belonging to the target group. They forwarded the introductory mail to their contacts. This selection happened on a random basis depending on existing relationships. The response time was two months.

The survey was online and available from the beginning of July until the end of November of the year 2004.

4.2.4 Survey questions and analysing methods

The survey started with an introductory page that welcomed the participants and stated the goal of this questionnaire. It outlined how the survey was structured and how long it would take to complete. As an incentive to complete the questionnaire the participants could leave their e-mail address to receive the results of the survey.

In addition everyone was ensured that the results would be treated confidentially, because the results would only be used in an aggregated form. At the end of this Webpage there was a button to start the questionnaire. The following text welcomed the participants:

Welcome to this first time conducted interdisciplinary CRM survey

This survey is part of my doctoral research and was developed to analyse CRM success. Your participation will help to prevent CRM to fail. In case you provide me with your input, I will supply you with the outcomes of the survey.

At the end of this research you can leave me your e-mail address. The survey consists of four pages and will take 15 to 20 minutes of your time. Feel free to contact me at Sebastian@crm-success.net if you have any questions.

!!! Your e-mail and your answers of course will be treated strictly confidential !!!

Best regards,

Sebastian

4.2.4.1 Survey: General questions

These general questions are the starting point of the survey. Figure 4.1 shows that they are structured in three parts.

The first part consists only of one open-end question asking "In what role are you involved with CRM?". The goal is to understand the point of view of the person filling out the questionnaire. This will help to interpret and to classify the given answers of the interviewee.

The second part consists of seven closed-end "General questions" which have the goal to obtain some background information about the company and the person who is interviewed. The answers have to be selected from a given "drop-down" list. This knowledge will help to judge the answers of the following questions in case there are significant differences.

The third part, "List the three biggest CRM problems you deal or dealt with", asks the participants to name and explain in a free text three major problems they were confronted with. The reason for this question is to find out what problems the interviewees name independently, before they are influenced by the given CRM risks in the following questionnaire. Additional problems can be provided at any time during the questionnaire.

The answers of these three question parts will be averaged and appropriately presented by their distribution.

CRM Survey

In what role are you involved with CRM?

Role

General questions

What continent do you live on? (please select)

What industry do you work for? (please select)

How many employees does your company have? (please select)

How many of those employees work with CRM? (please select)

How high is your CRM budget? (please select)

How many customers does your company have? (please select)

Does your company have a successful CRM system? (please select)

List the three biggest CRM problems you deal or dealt with.

Problem #1

Problem #2

Problem #3

Feel free to leave any comments.

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Figure 4.1: Internet survey page 1 – general questions

4.2.4.2 Survey: Risk factor assessment

The goal of this risk factor assessment is to separate different risks depending on their degree of harm to the success of a CRM project. Figure 4.2 is a screenshot of the questions asked to analyse these risks. It shows in what format the questions were asked and what the interviewees had to do to fill them out. The participants had to evaluate twenty-one CRM risks based on three criteria.

1. What is the probability that each of the following CRM risks could become a problem in a project?

The higher the result the more likely the risk will cause harm, if the company does not intervene. This will give an indication if a certain risk only derives during single CRM implementations or takes place all the time.

CRM Survey

CRM risk factor assessment

- What is the probability that each of the following CRM risks could become a problem in a project?
- What is the probability that each of these risks could cause a complete CRM solution to fail?
- What are indicators that a certain risk will become a CRM problem?

Please select for the first two questions from the following options:
 5=very high 4=high 3=middle 2=low 1=none 0=don't know

	Probability that this CRM risk will become a problem in a CRM project.	Probability that this CRM risk could cause the complete CRM solution to fail.	Please name one or two factors from your experience that indicate this CRM risk will become a problem.
Inadequate change management	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Underestimating the impact of CRM	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Poor project management	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Immeasurable CRM goals	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Corrupt data quality	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Missing CRM strategy	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Ineffective organisational processes	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Insufficient CRM project budget	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Falsely selected CRM solution	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Lack of management commitment	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Incompetent steering committee	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Technical CRM software problems	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Insufficient testing before going live	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Poorly planned and executed roll out	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Misleading communication	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Nonexistent CRM vision	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Incapable project team	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Nonexistent end user support	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Insufficient stakeholder analysis	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Project scope disagreement	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>
Underestimated risk management	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	5 4 3 2 1 0 ○ ○ ○ ○ ○ ○	<input style="width: 90%;" type="text"/>

Feel free to leave any comments.

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Figure 4.2: Internet survey page 2– risk factor assessment

2. What is the probability that each of these risks could cause a complete CRM solution to fail?

The higher the response the more likely the risk has a greater potential to end all CRM efforts. This will give an indication how careful certain risks have to be supervised and what action plans have to be prepared.

3. What serves as indicators that a certain risk will become a CRM problem?

The interviewees are asked to name one or two indicators that point out that a CRM risk could arrive in the future. The answers will help to get a better preparation towards upcoming problems because it is easier to identify them.

The first two questions have a closed format. The participants could select one of six radio buttons with one of the following answers:

- 5= very high; 4 = high; 3 = middle; 2 = low; 1 = none; 0 = don't know.

This method was chosen to minimize the effort of the participants to answer these questions. They could choose with "one mouse click" on a six point scale.

The answers of the third question have an open text format to give the interviewees the possibility to freely define as many indicators as they like.

4.2.4.3 Survey: Time-line of problems

The goal of this timeline analysis, shown in Figure 4.3, is to find out when a CRM risk is most likely to appear for the first time during a project. Therefore the participants were asked to rank the twenty-one CRM risks on a timeline from the first risk to the last.

This Web-based question made it very easy for the interviewees to structure the answers only by "double clicking" on one of the risks in the left column the answers are automatically transferred to the right one.

Therefore, the participants start to select the risk that is most likely to appear first and repeat this procedure to the last one. Now all reasons are in the right column and the question is finished unless the participants change their mind or believe that they made a mistake. In this case, they are able to change their ranking by selecting a single CRM risk and moving it up or down on the scale. They can repeat this procedure as many times as they like. When they believe the CRM risks are ranked correctly they can move on to the next page and the question is answered.

CRM Survey

Rank the problems in order of their first appearance during a CRM implementation.
Arrange the failure reasons on the right side in order of their first time appearance during a CRM project.
Double click an entry to move it between the two lists.
Change the ranking, if necessary, with the buttons "Move up" and "Move down".

Inadequate change management Underestimating the impact of CRM Poor project management Immeasurable CRM goals Corrupt data quality Missing CRM strategy Ineffective organisational processes Insufficient CRM project budget Falsely selected CRM solution Lack of management commitment Incompetent steering committee Technical CRM software problems Insufficient testing before going live Poorly planned and executed roll out Misleading communication Nonexistent CRM vision Incapable project team Nonexistent end user support Insufficient stakeholder analysis Project scope disagreement Underestimated risk management	(Place your ranking here)	First
---	-----------------------------	-------

Move up Move down

Feel free to leave any comments.

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Figure 4.3: Internet survey page 3 – timeline

4.2.4.4 Survey: Relationships of CRM problems

The goal of this analysis is to understand how the twenty-one CRM risks are related to each other. Therefore, it is necessary to find out if two risks are related and if yes how weak or strong this relationship is.

In a first step the participants were asked to select the three most common CRM problems in their company from the given list of the twenty-one risks. This selection was done via a "drop down" list.

In the second step the interviewees had to relate all twenty-one CRM risks to the three selected ones. This relationship was done via "radio buttons" on a five point Likert scale.

Figure 4.4 is a screenshot of the Likert scale questionnaire. It shows in what format the questions were asked and what the interviewees had to do to fill them out.

CRM Survey

How are the following CRM risks related to each other?
 Select in the first row the three most common CRM risks in your company and relate those to the twenty one risks in the left column.

Choose one the following relationships:
 ++=strong positive relationship +=weak positive relationship 0=no relationship -=weak negative relationship --=strong negative relationship
positive means that if one risk gets stronger the other one gets stronger too.
negative means that if one risk gets stronger the other ones gets weaker.

	Risk 1	Risk 2	Risk 3
	(Please select)	(Please select)	(Please select)
Inadequate change management	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Underestimating the impact of CRM	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Poor project management	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Immeasurable CRM goals	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Corrupt data quality	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Missing CRM strategy	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Ineffective organisational processes	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Insufficient CRM project budget	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Falsely selected CRM solution	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Lack of management commitment	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Incompetent steering committee	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Technical CRM software problems	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Insufficient testing before going live	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Poorly planned and executed roll out	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Misleading communication	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Nonexistent CRM vision	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Incapable project team	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Nonexistent end user support	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Insufficient stakeholder analysis	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Project scope disagreement	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
Underestimated risk management	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○

Optional: Add other risks if you like.

<input type="text"/>	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
<input type="text"/>	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○
<input type="text"/>	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○	++ + 0 - -- ○ ○ ○ ○ ○

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Figure 4.4: Internet survey page 4 – risk correlation

The participants could choose from the following options:

- ++ = Strong positive relationship.
- + = Weak positive relationship.
- 0 = No relationship;
- - = Weak negative relationship.
- -- = Strong negative relationship.

A positive relationship means that when a risk gets stronger the other one gets stronger too. A negative relationship means that when a risk gets stronger the other one gets weaker.

In case the interviewees would like to add other CRM risks and relate those to the three most common problems, they have the possibility to add those at the end of this page in the same format.

This Likert response measure asks the participants to represent their attitude about the relationship of two CRM risks by selecting an indicator on a five point scale that is anchored at both ends. The neutral point is simply an impartial point, with no expression of agreement or disagreement. A neutral point allows for expression of indifference and does not force participants to answer (Guy & Norvell, 1977).

The Likert scale measurement uses an interval scale placing equal distance between the response options when determining placement. Equal spacing allows people to assign "equal psychological distance" between each of the options and to regard those options as convenient reference or stopping points along the continuum of the concept being measured (Munchi, 1990). Likert scales are empirically more valid than forced-choice scales, reduce consenting response bias and are therefore very reliable (Ray, 1990).

4.2.5 Survey piloting

An online survey follows the same design criteria as a paper based one. The design of response alternatives and question context can create bias that may destroy the quality of any survey. Inattentiveness to detail also inhibits quality (Schwarz, 1999; Krosnick, 1999). A conscientious and complete pilot of the survey and the survey distribution and data collection process can help to avoid painful mistakes that can ruin an important research project. The following potential frequent mistakes can be eliminated or at least reduced (Sheehan & Hoy, 1999; Witte, et al., 2000):

- Bias in question and answer wording.
- Inconsistent wording and spelling errors.
- Requesting inappropriate demographic data.
- Overlapping question scales or selection options.
- Inaccurate or missing instructions.
- Technical vocabulary with no definitions.
- Insufficient space for open-ended question answers.
- Lack of motivational techniques to participate in the survey.

Therefore, survey piloting is a crucial part before sending the questionnaire to the complete target group. This research step helps to achieve research goals and to ensure that the participants complete the survey (Oppenheim, 1992).

The literature suggests a multistage testing process that integrates testing techniques and can be applied to either paper or electronic surveys (Schwarz & Sudman, 1996; Dillman, 2000). The process begins when the survey owner has finished the development. This research followed a three stage testing process to ensure a high standard and to avoid incomplete or misunderstood responses. During the first stage knowledgeable experts, like CRM consultants, CRM users and CRM project managers reviewed the survey to check question completeness, efficiency, relevancy and format appropriateness.

The next stage consisted of observation and documentation of the remarks of respondents while completing the survey, followed by a retrospective interview. This helped to evaluate cognitive and motivational qualities of the survey and to ensure wording correctness, interpretation consistency, logical sequencing and overall positive impression from the look and feel of the survey.

In the third stage randomly selected people, who were not part of the first two stages, were interviewed. These were mostly colleagues and industry associates who had no connection to the survey. The goal was to catch misspellings and errors that may have occurred during the last revision process.

Every one of these three steps was performed multiple times since many changes were made during the piloting phase. Having such an exclusive target group like the "Fortune

Global 500", it would have been very difficult to contact them more than once. However, the piloting phase took around six months to complete, but the survey was only done once.

4.3 Research results

4.3.1 Response rate

An overall response rate of the selected target group of 21,2% (106/500) was achieved. Taking into account the companies that could not be contacted an overall response rate of 23,5% (106/451) was reached. Including only the useable responses a rate of 19,7% (89/451) was achieved. The response rate can be structured as depicted in Table 4.2.

Table 4.2: Target group response rate

Total number of companies selected	500
Total number of companies that could not be contacted	49
Total number of questionnaires mailed	451
Total number returned	106
Total number useable	89
Number received too late	1
Number of companies that refused to participate	117
No response	228

One fact became very obvious after analysing the response rate. Hundred-nineteen companies of the "Global Fortune 500" are from Asia, but only one of them participated in this survey. A variety of cultural and financial reasons could be the cause for this behaviour (Peppers & Rogers, 2001; Dharmasthira, et al., 2005; Chen, 2005).

- Asian organizations are saddled with command-and-control type management. This means that decisions are only made by the higher management. This leads to a poor customer service culture, as decisions often have to be made at the point where the organization meets its customers. As a result the employee a customer deals with cannot solve problems. Most Asian organisations focus mainly on ERP implementations.
- Asian customers are different from those in the West. It is very difficult to bring CRM concepts that have worked in the US and Europe to Asia because the cus-

tomers will reject them. Asians generally still prefer traditional channels of person-to-person contact even though those channels may be less efficient for them.

- CRM adoption rates in Asia have been relatively slow compared to Western countries. The first broad coverage CRM products were released in 1995-96, but by the time they achieved market awareness in Asia, the 1997 currency crisis was in full swing and discretionary funds for new projects were limited. In addition, short-term returns were overemphasized and the long-term strategic improvements that could come from CRM were consequently given less credence.
- Companies in Asia are very scrupulous about their spending on technology. When they invest in something, they want to see the value immediately, whereas in the US and Europe, companies are more likely to buy into CRM solutions full-scale. Therefore, Asia has a relatively lack of success stories, so its reference base is small.

Since the very low response rate from the Asian continent is not representative and taking these facts into account, it was decided to exclude all Asian companies from the results of this survey. In addition, African companies are not represented in the survey as well, since the only eligible company from South Africa did not participate. Excluding Africa and Asia leads to the response rate depicted in Table 4.3.

Table 4.3: Target group response rate without Africa and Asia

Total number of companies selected	383
Total number of companies that could not be contacted	4
Total number of questionnaires mailed	379
Total number returned	104
Total number useable	88
Number received too late	1
Number of companies that refused to participate	116
No response	159

This leads to a usable response rate of 23,2% (88/379), which is an even better response rate than the 19,7% including Africa and Asia.

Thirty percent of the companies send a response that they refuse to participate stating for example that they have a "company policy not to take part in external surveys" because of the work load. Other statements were "not interested", "too busy" or "CRM is a

very sensitive topic and information is not being shared". This high response rate can be explained by the fact that it is very easy for the companies to reply directly to the invitation e-mail with one sentence.

15,4% (16/104) of the total numbers returned were not completed adequately and therefore not usable. They were excluded from the analysis.

41,5% of the companies did not respond at all.

1% of the target group could not be contacted because they had no e-mail address or contact form on their Web page. In two cases the e-mail or contact form had technical problems to deliver the survey request.

4.3.2 Composition of the final sample

To determine whether the industries or countries included in this study varied from the population listed in the "Global Fortune 500", the "Chi-Square Goodness of Fit Test" was carried out.

This is a test that is particularly adept at determining how well a model fits observed data. It allows to evaluate how "close" the observed values are to those which would be expected given the model ("Global Fortune 500") in question.

The chi-square test is defined for the hypothesis (Arsham, 2003):

- H_0 : The observed frequency table fits the claimed distribution.

For the "Chi-Square Goodness of Fit Test" computation, the data is divided into multiple bins and the test statistic is defined as:

$$X^2 = \sum \frac{(\text{observed} - \text{expected})^2}{\text{expected}}$$

The test statistic is distributed approximately as a chi-square random variable with $c-1$ degrees of freedom (Conover, 1999).

This test is sensitive to the choice of bins. There is no optimal choice for the bin width (since the optimal bin width depends on the distribution). For the chi-square approximation to be valid, the expected frequency should be at least 5 (Snedecor & Cochran, 1989).

Table 4.4 states the observed and expected industry responses. For this industry classification the calculated chi-square is 9,23, which is smaller than the critical value of 15,5 at the 5% level. The hypothesis (H_0) that the observed frequency table fits the claimed distribution can be accepted. The distribution of the sample concerning the industry does not differ from the population.

Table 4.4: Observed and expected industry responses

Category	Industries	Number of companies that replied		Target group without Africa and Asia
		observed	expected	
1	Financial Services	20	21	91
2	Automotive	7	4	20
3	Retail	10	10	43
4	Telecommunication	9	8	34
5	Chem. / Pharm	8	4	19
6	Oil	2	5	23
7	Utilities	5	6	25
8	High Tech	3	5	21
9	Miscellaneous	24	25	107
		88	88	383

Table 4.5 states the observed and expected country responses. For this country classification the calculated chi-square is 16,22, which is smaller than the critical value of 16,9 at the 5% level. The hypothesis (H_0) that the observed frequency table fits the claimed distribution can be accepted. The distribution of the sample concerning the industry does not differ from the population.

The differences in the value of chi square (industry) and chi-square (country) can be assumed by the observations that only 16,3% of the American companies participate in the survey compared to 23,2% overall participation.

Table 4.5: Observed and expected country responses

Category	Countries	Number of companies that replied		Target group without Africa and Asia
		observed	expected	
1	USA	31	44	190
2	Canada	4	3	14
3	Germany	12	8	35
4	UK	9	8	34
5	Nethalands	8	3	11
6	France	8	9	40
7	Switzerland	4	3	11
8	Sweden	2	1	6
9	Italy	2	2	9
10	Miscellaneous	8	7	33
		88	88	383

4.3.3 Results of the survey

The companies that participated in the questionnaire had in the year 2002 an average of (Fortune, 2003):

- 36626 million US Dollar revenue.
- 896 million US Dollar profit.
- 169134 million US Dollar assets.
- 13335 million US Dollar shareholder equity.

4.3.3.1 Results: General questions

The participants were involved in CRM in different roles. The answers can be clustered in three major areas:

- 23% Management.
- 42% Project management.
- 35% CRM team member.

On average the participating companies have:

- 126916 employees (Fortune, 2003).

- Between 50 and 200 employees working with a CRM system.
- A CRM budget between 2,5 and 10 Million Euros.
- Between 1 and 10 million customers.

42% of all participants state that their company has a successful CRM system, 34% believe their CRM is not doing well and 24% do not know how successful their CRM is.

The three biggest problems the companies deal or dealt with are "missing management commitment", "resistance to change" and "data quality".

4.3.3.2 Results: Risk factor assessment

Table 4.6 – 4.8 summarizes in three columns the results of the risk factor assessment.

- Column 1 shows the median results of the probability that a CRM risk will become a problem in a CRM project.
- Column 2 shows the median results of the probability that this CRM risk could cause the complete CRM solution to fail.
- Column 3 shows the two most listed factors indicating that this CRM risk will become a problem.

For the first and the second column the median was chosen, because it is less sensitive to errors in the data than the mean. The median of a set of observations is the value that falls in the middle when the observations are arranged in order of magnitude. If there are an odd number of values, the median is the middle one when they are sorted in order of magnitude. If there is an even number of values, the median is the average of the two middle values.

The results in the third column were analysed in two steps. Firstly they were grouped in similar or identical answers to eliminate doubles and secondly the mode was calculated. The mode is the most frequently occurring value in the data set. This means the two most frequent answers to every CRM risk will be taken into account.

Table 4.6: Results: Risk factor assessment (1 of 3)

Risks •Very high (5) •High (4) •Middle (3) •Low (2) •None (1)	-1- Probability that this risk will become a problem in a CRM project	-2- Probability that this risk could cause the complete CRM solution to fail	-3- Two factors that indicate that this CRM risk will become a problem
Inadequate change management	Very high (5)	Very high (5)	<ul style="list-style-type: none"> • Employees' have a lack of identification with CRM • No responsible change manager
Under-estimating the impact of CRM	Very high (5)	Middle (3)	<ul style="list-style-type: none"> • No communication outside the project • No detailed project plan
Poor project management	Low (2)	High (4)	<ul style="list-style-type: none"> • No experience in leading large projects • No soft skills competency like motivation, communication, etc.
Immeasurable CRM goals	Middle (3)	Middle (3)	<ul style="list-style-type: none"> • No goals are defined • Goals change regularly
Corrupt data quality	High (4)	Middle (3)	<ul style="list-style-type: none"> • No data evaluation before transferring data into the CRM system • No data quality tool
Missing CRM strategy	High (4)	High (4)	<ul style="list-style-type: none"> • Strategy is not endorsed at top management level • CRM strategy is not aligned with the overall business strategy
Ineffective organizational processes	Middle (3)	High (4)	<ul style="list-style-type: none"> • Processes are not verified before the CRM project starts • CRM software dictates the business processes

Table 4.7: Results: Risk factor assessment (2 of 3)

Risks •Very high (5) •High (4) •Middle (3) •Low (2) •None (1)	-1- Probability that this risk will become a problem in a CRM project	-2- Probability that this risk could cause the complete CRM solution to fail	-3- One or two factors that indicate that this CRM risk will become a problem
Insufficient CRM budget	Middle (3)	Very high (5)	<ul style="list-style-type: none"> • No budget for training and change management • No budget for maintaining the system and supporting it
Falsely selected CRM solution	Low (2)	High (4)	<ul style="list-style-type: none"> • The CRM solution does not scope with the business processes • The needed functionality is not harmonized
Lack of management commitment	Middle (3)	Very high (5)	<ul style="list-style-type: none"> • The management does not show presence during the project • No continuous communication how important the project is
Incompetent steering committee	Middle (3)	Low (2)	<ul style="list-style-type: none"> • Cannot agree on decisions • Returning discussions on goals
Technical CRM software problems	High (4)	Low (2)	<ul style="list-style-type: none"> • The needed functionality is not available • Too many problems appear simultaneously
Insufficient testing before going live	High (4)	Low (2)	<ul style="list-style-type: none"> • No time for testing is scheduled • No independent resources

Table 4.8: Results: Risk factor assessment (3 of 3)

Risks •Very high (5) •High (4) •Middle (3) •Low (2) •None (1)	-1- Probability that this risk will become a problem in a CRM project	-2- Probability that this risk could cause the complete CRM solution to fail	-3- One or two factors that indicate that this CRM risk will become a problem
Poorly planned and executed rollout	High (4)	Low (2)	<ul style="list-style-type: none"> • No integration of rollout activities in an early stage • Not in focus at the beginning of the project
Misleading communication	Very high (5)	Middle (3)	<ul style="list-style-type: none"> • Open communication is not performed by project management • Different project teams do not share information
Nonexistent CRM vision	High (4)	Low (2)	<ul style="list-style-type: none"> • Changing project goals • Users do not know the advantages of CRM
Incapable project team	Low (2)	High (4)	<ul style="list-style-type: none"> • Too many mistakes • Milestones are not reached
No existing end user support	Low (2)	Middle (3)	<ul style="list-style-type: none"> • Users lose motivation • Bad data quality
Insufficient stakeholder analysis	Middle (3)	High (4)	<ul style="list-style-type: none"> • Wrong CRM functionality • No change in handling customer relationships
Project scope disagreement	Low (2)	Middle (3)	<ul style="list-style-type: none"> • The project scope is growing during the project • The project has no end
Underestimated risk management	High (4)	High (4)	<ul style="list-style-type: none"> • Potential risks are not continuously analysed • Problems appear and the project is not prepared

In summary, there are in the first column five CRM risks with a low, seven with a medium, six with a high and three with a very high probability that they could become a problem in a CRM project. These very high risks seem to appear during most CRM implementations.

In the second column there are five CRM risks with a low, six with a medium and seven with a high probability that they could cause a complete CRM solution to fail. In addition, there are three risks with a very high probability and could therefore be considered as potential showstoppers.

The participants named a variety of indicators that deliver a signal that a certain problem could arise in a CRM project. Mostly one to three indicators were mentioned a few times. Therefore it was decided to present the two most often identified factors in the third column. Some of these indicators are other CRM risks, which leads to the assumption that CRM risks depend on each other. When one CRM risk becomes a problem this indicates that another CRM risk is more likely to become a problem too.

Another conclusion of the risk factor assessment is that all mentioned CRM risks could cause problems within a CRM project. No participant stated once that one of the twenty-one listed CRM risks is not relevant. They are all important and need to be taken into calculation when planning a CRM project.

4.3.3.3 Results: Time-line of problems

Figure 4.6 shows the order how the twenty-one CRM risks are most likely to appear in a CRM project. Some of these CRM risks can become visible more than once during a project. However, the question was when they are most likely to appear for the first time.

The time-line in Figure 4.6 was created by using the median. Following this approach there will be an ordinal scaled timeline with twenty-one risks from the earliest until the last. It starts with the CRM vision and other management issues followed by CRM risks that are most likely to happen during the project implementation. The last risk is the end-user support which could be an ongoing problem as long as the CRM system is in use.

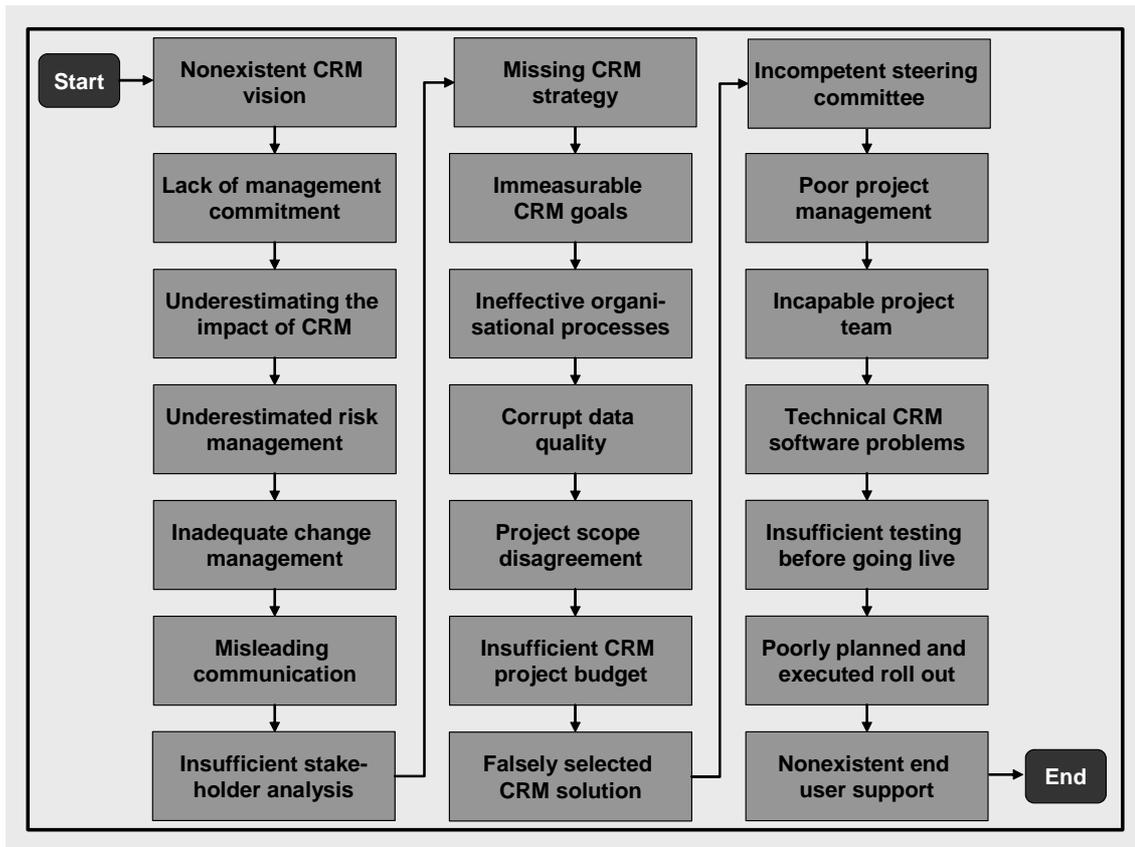


Figure 4.5: Results: CRM problems as they will appear during a CRM project

4.3.3.4 Results: Relationships of CRM problems

Table 4.5 shows the median of 210 relationships between twenty-one CRM risks. All risks have none, weak positive or strong positive relationships. A positive relationship means that when a risk gets stronger the other one gets stronger too. No relationship was classified as a weak or strong negative relationship. This means that when a risk gets stronger the other one gets weaker.

The relationships were calculated by using the median and not by "Pearson's Correlation Coefficient" or "Spearman's Rank Correlation Coefficient". The reason for this decision is the fact that Pearson and Spearman measure the correlation between two variables (Lehmann & D'Abrera, 1998) but the participants were directly asked "how are these two CRM risks related to each other".

They could choose from one of the following answers.

- Strong positive relationship (2).
- Weak positive relationship (1).

- No relationship (0).
- Weak negative relationship (-1).
- Strong negative relationship (-2).

Table 4.9: Results: Overview – relationships of CRM risks

CRM Risks	Nonexistent CRM vision	Lack of management commitment	Underestimating the impact of CRM	Underestimated risk management	Inadequate change management	Misleading communication	Insufficient stakeholder analysis	Missing CRM strategy	Immeasurable CRM goals	Ineffective organisational processes	Corrupt data quality	Project scope disagreement	Insufficient CRM project budget	Falsely selected CRM solution	Incompetent steering committee	Poor project management	Incapable project team	Technical CRM software problems	Insufficient testing before going live	Poorly planned and executed roll out	Nonexistent end user support	
Nonexistent CRM vision																						
Lack of management commitment	2																					
Underestimating the impact of CRM	2	2																				
Underestimated risk management	1	2	2																			
Inadequate change management	1	1	2	0																		
Misleading communication	2	2	1	0	2																	
Insufficient stakeholder analysis	1	1	2	1	0	1																
Missing CRM strategy	2	2	2	2	2	1	2															
Immeasurable CRM goals	1	1	2	1	1	0	2	1														
Ineffective organisational processes	2	2	2	1	0	1	2	2	2													
Corrupt data quality	1	1	1	1	0	0	1	2	0	1												
Project scope disagreement	1	1	1	1	0	0	1	1	1	1	0											
Insufficient CRM project budget	1	2	1	0	2	0	1	1	0	1	2	0										
Falsely selected CRM solution	1	1	1	1	0	0	2	2	0	1	0	1	1									
Incompetent steering committee	1	2	2	2	1	1	0	1	2	1	1	2	2	1								
Poor project management	0	2	1	2	1	1	0	1	2	1	1	1	0	0	2							
Incapable project team	0	1	1	0	1	2	0	1	1	0	1	0	2	0	1	2						
Technical CRM software problems	1	0	1	1	0	1	0	0	0	1	2	0	1	2	0	1	2					
Insufficient testing before going live	1	1	2	1	1	0	0	1	2	1	2	1	2	0	1	2	1	1				
Poorly planned and executed roll out	0	1	2	1	2	1	1	2	1	0	1	1	2	0	1	2	1	0	2			
Nonexistent end user support	0	0	2	1	2	0	1	2	1	0	2	1	2	0	1	1	0	0	0	1		

Since the participants were directly asked how the relationship of two variables is, the result was a set of observations describing the relationship of two CRM risks. As a conclusion the median was used.

The relationships can be summarized as follows:

- 62 Strong positive relationships (2).
- 96 Weak positive relationships (1).
- 52 No relationships (0).
- 0 Weak negative relationships (-1).
- 0 Strong negative relationships (-2).

In summary, not enough respondents indicated weak and strong negative relationships to be reflected in the overall results. The CRM risks are either not related or are positively related. However, every CRM risk has many weak and some strong positive relationships to other ones. This leads to the conclusion that all risk factors are somehow related with each other and cannot be viewed and analysed in isolation. Building up on each other makes them non-transparent and difficult to handle. They complement each other and could become one comprehensive problem.

4.4 Conclusion

The goal of this chapter is to analyse twenty-one CRM risks concerning their threat to a complete CRM project, their probability to appear at all during a CRM project, their timeline and their correlation with each other. Therefore this chapter is divided in two major parts. The first presents the research methodology and the second the survey results without interpretation.

From the research results it can be concluded that with the target group of the "Fortune Global 500" companies a useable response rate of 23,4 % was achieved excluding companies from Africa and Asia. In addition, all twenty-one CRM risk factors are relevant and could become a problem in a project and 47,6 % have high or very high chance to fail the complete CRM project. All of them are likely to follow a certain timeline for their first time of appearance and 75% of the CRM risks have a weak or strong positive relationship to other CRM risks. No meaningful other CRM risks could be identified besides the twenty-one that were investigated.

CHAPTER 5

A systemic perspective of a CRM solution for businesses

5.1 Introduction

Chapter 4 presented the research results. The goal of this chapter is to explain the results by accepting or rejecting the following two postulations that were made at the beginning of this research.

1. Every CRM implementation approach will fail to be successful when problems are only addressed when they become visible. This indicates that it is not possible to solve every problem separately when it appears. Many issues during the implementation of CRM have to be met before they become a problem because they could lead to barriers that could result in a complete CRM failure.
2. The second postulation is based on this first one. It is possible to develop a winning strategy for a successful CRM implementation knowing the following information:
 - How threatening to a CRM project is every single problem by itself?
 - When does a problem appear during a CRM implementation?
 - What is the probability that a certain problem appears at all?
 - How strong are CRM problems related with each other?

This chapter is structured in two parts. Each of these parts investigates one postulation and concludes with acceptance or rejection.

5.2 CRM risks in the context of an overall framework

The first part focuses on all CRM risks in the context of an overall framework. It evaluates changes in risk potentials, distribution of danger possibilities based on a given

timeline and interaction of risk dependencies. This section investigates how the behaviour of risks changes when they appear in a complex environment and how the correlation of risk factors increases the potential failure rate in a CRM project. This investigation will determine if each CRM risk can be solved in isolation or if each risk can be seen as one piece of a large puzzle.

To get a deeper understanding of risk potential, timeline and dependencies the following calculations are provided as examples of how this information can be interpreted. It is only a thinking process to illustrate possible impacts, when CRM risks fail to be successful. A test of this process in real life requires a longitudinal approach. This could take many years, but the topic changes rapidly and therefore this approach is not advisable.

5.2.1 Example 1: Risk potential

The risk factor assessment in this research analysed the risk potential of CRM success factors based on their probability to occur in a CRM project and their danger probability to cause the complete CRM project to fail. Both probabilities together determine how much attention the handling of such a risk deserves.

The goal of this section is to get quantifiable numbers for a risk ranking depending on the overall danger potential in a CRM project. These results will then be used to calculate other examples.

In order to progress the thinking process it was necessary to translate the overall risk potential of the original survey answers, stated in Table 4.2, into percentages. This is done in the following schema:

- very high risk = 100%-80% → 90%
- high risk = 79%-60% → 70%
- medium risk = 59%-40% → 50%
- low risk = 39%-20% → 30%
- no risk = 19%-0% → 10%

Column 2 in Table 5.1 lists all investigated CRM risks of the survey. They are sorted by their time of occurrence in a CRM project, which is indicated in column 1. Columns 3 and 4 use the schema above and translate the probability that this risk will become a problem in a CRM project and that this risk will cause the complete CRM solution to

fail into percentages. The results in columns 3 and 4 are multiplied and presented in column 5. This is the overall risk potential in isolation.

The most important overall risk potential in a CRM project is "inadequate change management" with 81% danger potential. This is followed by "underestimated risk management" and "missing CRM strategy" with 49% overall danger potential. "Project scope disagreement" and "incompetent steering committee" are two risks with the lowest potential, which is still 15%.

Table 5.1: CRM success factors and their overall risk potential

-1-	-2-	-3-	-4-	-5-
Timeline	CRM Risks	Probability that this risk will become a problem in a CRM project	Probability that this risk could cause the complete CRM solution to fail	Overall risk potential
1	Nonexistent CRM vision	70%	30%	21%
2	Lack of management commitment	50%	90%	45%
3	Underestimating the impact of CRM	90%	50%	45%
4	Underestimated risk management	70%	70%	49%
5	Inadequate change management	90%	90%	81%
6	Misleading communication	90%	50%	45%
7	Insufficient stake-holder analysis	50%	70%	35%
8	Missing CRM strategy	70%	70%	49%
9	Immeasurable CRM goals	50%	50%	25%
10	Ineffective organisational processes	50%	70%	35%
11	Corrupt data quality	70%	50%	35%
12	Project scope disagreement	30%	50%	15%
13	Insufficient CRM project budget	50%	90%	45%
14	Falsely selected CRM solution	30%	70%	21%
15	Incompetent steering committee	50%	30%	15%
16	Poor project management	30%	70%	21%
17	Incapable project team	30%	70%	21%
18	Technical CRM software problems	70%	30%	21%
19	Insufficient testing before going live	70%	30%	21%
20	Poorly planned and executed roll out	70%	30%	21%
21	Nonexistent end user support	50%	50%	25%

It can be concluded that all investigated CRM risks have a strong impact on the success of a CRM project. Some of them are very dangerous and the others are "only" dangerous.

5.2.2 Example 2: Risk timeline

When evaluating the overall risk potential of CRM success factors, there seems to be a higher risk potential at the beginning of the project than at the end. By visual inspection it becomes clear that the risks reduce the later they appear in the sequence.

Figure 5.1 illustrates this connection. It shows the distribution of the overall risk potential depending on its time of appearance.

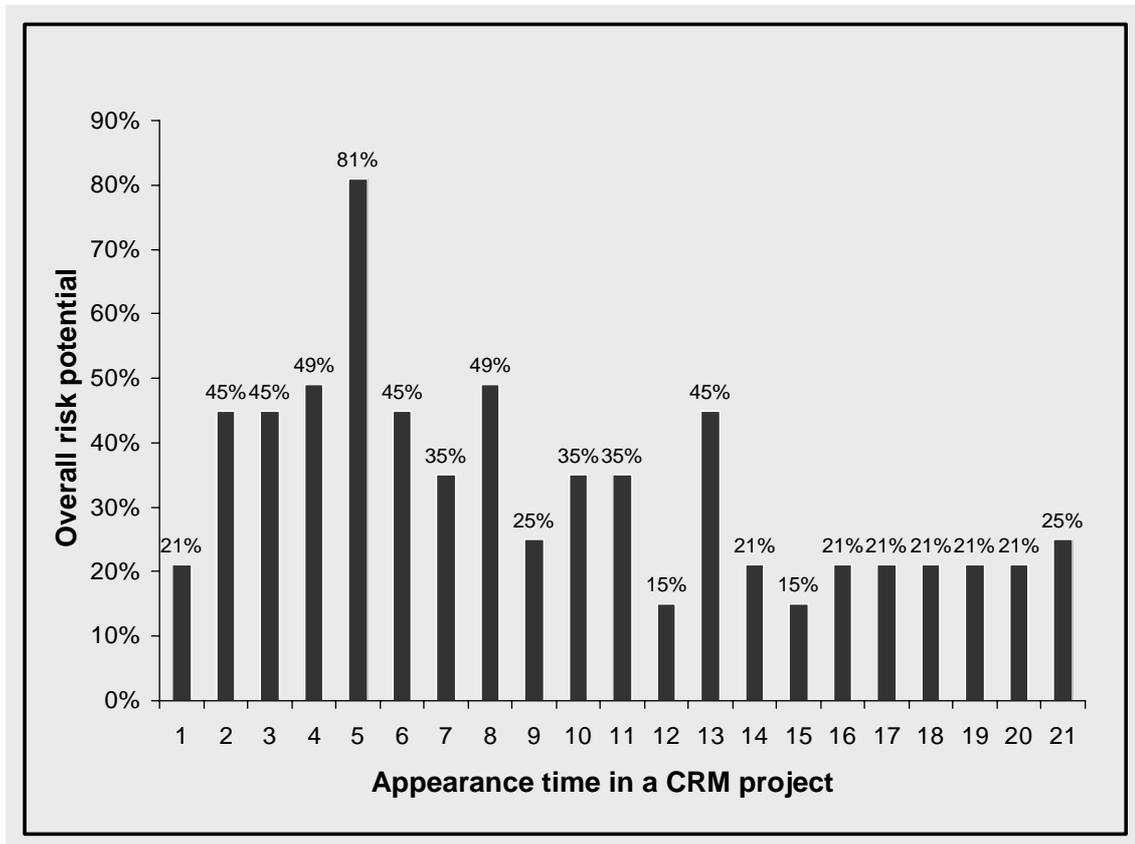


Figure 5.1: CRM overall risk potential distributed by order of appearance

This leads to the assumption that the later a CRM risk becomes a problem the lower the percentage to harm the CRM project. This is an important observation because the actual CRM implementation, where companies often involve a partner to support them, mainly happens in the second half of these risks. The first ones are internal company risks, which need to be addressed appropriately by the senior management.

5.2.3 Example 3: Risk dependencies

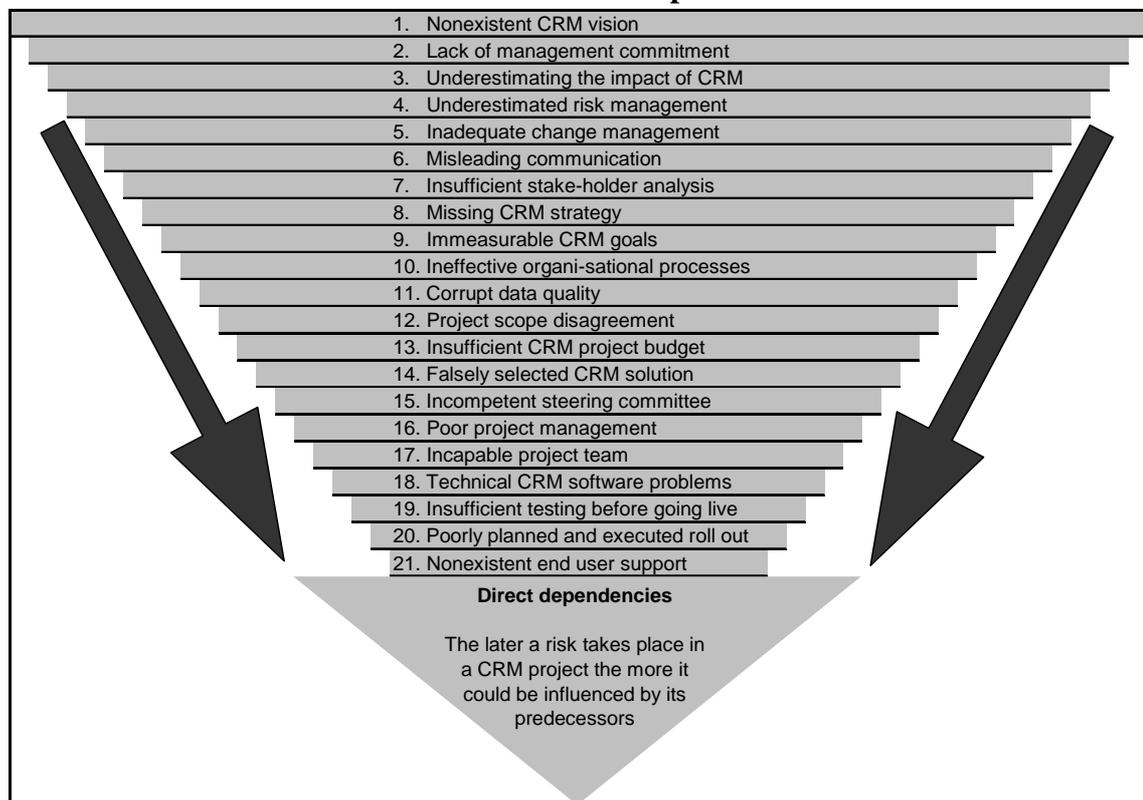
The research investigated how one CRM risk is related to another one. In addition it stated how strong or weak the relationship of the two risks is. It was concluded that two risks are either not or positively related. A positive relationship in this context means that if one risk becomes a problem the related risk has a higher chance of becoming one also. None of the risks were negatively related, meaning that as one risk gets stronger the other will get weaker. Therefore, the research output is divided into three types of relationships, a positive weak relationship or strong positive relationship or no relationship at all.

5.2.3.1 Direct dependencies

A direct dependency is a relationship between two risks, where the previous risk is directly influencing the following risk. This means that the outcome probability also depends on the influencing risk.

This leads to the assumption that the later a risk occurs on a project timeline the higher is the probability that this risk is negatively influenced by risks that occurred earlier in a CRM project. Table 5.2 illustrates this assumption.

Table 5.2: Direct risk dependencies



The occurrence and danger probability of the risk factors increases depending on their number of predecessors. The more predecessors a risk has the more likely it is influenced negatively when the previous risk fails to be successful. The first risk "nonexistent CRM vision" has no predecessors and therefore the occurrence and danger probability will stay the same. But "nonexistent end user support" has twenty predecessors that could lead to an increase of the occurrence and danger probability when they fail to be successful.

Therefore it can be concluded that the later a risk takes place in a project the more it is influenced by what has happened previously. Early CRM risks are more threatening to the overall success because they can have a bad influence on the following risks.

5.2.3.2 Indirect dependencies

Indirect dependencies indicate how a CRM risk is influenced by another one through a third risk. This factor was not investigated in this research, but becomes obvious when analysing the relationship between two CRM risks.

The previous section explained that the later a risk occurs on a project timeline the higher is the probability that this risk is negatively influenced by risks that occur earlier in a CRM project. Indirect dependencies support these findings and add another complexity factor that has to be considered during a CRM project.

To illustrate the complexity of indirect dependencies Figure 5.2 will be used as an example. The first risk has a risk potential of 50%, the second risk of 70% and the third risk of 60% in isolation. All risks are related with each other.

In case the first risk fails to be successful it influences the second risk by X% and the third risk by Z%. This leads to an increase of their risk potential. The potential of the second risk increases by x% and the potential of the third risk by z% percent.

In case the second risk fails to be successful it influences the third risk by Y% and the potential of the third risk increases by y%.

However, if the first risk in Figure 5.2 fails to be successful, how does this failure influence the relationships between the second and third risk? In other words, if the first risk fails to be successful, how much does the question mark in Figure 5.2 change and how much does the risk potential of the third risk increase? These indirect dependencies are indicated by the dotted lines.

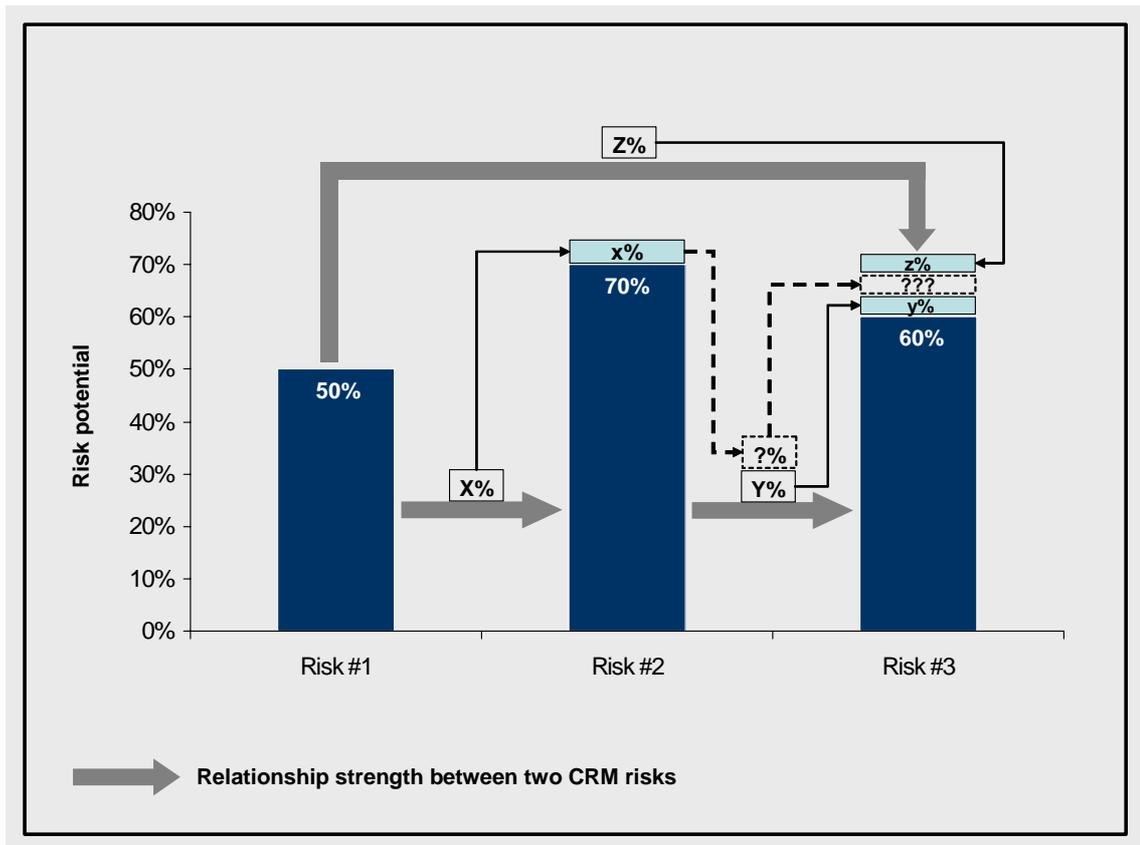


Figure 5.2: Example of indirect risk dependencies

Indirect dependencies can lead to a network of relationships, which are very difficult to estimate. Without additional information about these indirect dependencies it is not possible to calculate an exact effect. Since these indirect dependencies were not further investigated it is not possible to explain how much the strength of the relationship between the second and third risk will change if the first risk fails to be successful. But in planning a CRM project this effect needs to be considered since it could increase the strength of the following relationships and therefore the risk potential over-proportionally.

5.2.3.3 Reoccurring dependencies

The participants of this research were asked to rank the given twenty-one CRM risks on a timeline depending on their first time of appearance in a CRM project. This timeline was used to investigate the relationships between the different CRM risk factors. However, considering the fact that two projects are usually not identical, the timeline could change depending on the elimination of risks during the project. In addition, some risks could take place several times during a CRM project.

Taking these factors into account creates another complexity factor that requires continuous attention during a CRM project. Changing timelines have a significant influence on all direct and indirect dependencies. The risk potential would increase and develop its own dynamic, which would make it very difficult to predict success for a company implementing CRM.

5.2.4 Conclusion: All CRM risks have to be seen as a whole

The first postulation of this research states that every CRM implementation approach will fail to be successful when problems are only addressed when they become visible.

This postulation can definitely be accepted. All research findings and calculation examples support this postulation. It is not possible to solve every CRM problem in the moment when it appears. Many issues during the implementation of CRM have to be met before they become a problem because they influence each other and lead to barriers that could result in a complete CRM failure. Thus, a CRM project has a very complex structure that requires strategic risk planning.

5.3 Interpretation of all investigated CRM risks and prerequisites to a successful implementation

Section 5.3 focuses on every investigated CRM risk in detail. It is divided into two parts for each CRM risk.

1. The first one interprets the research findings; it evaluates time of appearance, danger potential to the project, dependencies to other risks and additional risk specific research outcomes. As a conclusion it shows for every risk how it is established in the set up of the overall CRM project.
2. The second part is a first step to a winning CRM strategy for every risk. It delivers prerequisites that have to be taken into account to implement CRM successfully. It is based on research findings from this study, personal experience as a CRM and Business Consultant, best practises and other research studies and findings.

It was decided not to develop a holistic CRM strategy because of time and volume limitations. The precise analysis of every CRM risk in detail is worth separate research. This is addressed more thoroughly in paragraph 6.3, which provides recommendations for further academic research.

5.3.1 Nonexistent CRM vision

5.3.1.1 Interpretation of research

A CRM vision is the starting point for a company that plans to implement a CRM solution. The wrong vision about the importance and value of customers leads to the first possibility to make a mistake in a CRM project. All other CRM risks are very likely to take place later in the project.

The outcome of the survey shows that a "nonexistent CRM vision" has a high occurrence probability in a CRM project, but by itself only a low danger probability to cause the complete CRM project to fail. This leads to the conclusion that a well defined CRM vision is not that important, because even if it takes place other CRM risks are more threatening to the overall project success.

However, this point of view is only correct if looked at in isolation. Sixteen of the following twenty CRM risks are directly related to the CRM vision. Figure 5.3 shows that a CRM vision has five strong and eleven weak relationships to other CRM risks.

All relationships in this research are positive, which means if one CRM risk becomes a problem the chance that the following risks also become problem increases. All five strong relationships of CRM vision are within the first nine and CRM vision is not related to four of the CRM risks and those are within the last six. This leads to the observation that the strength of the relationships to the other CRM risks gets less the later the CRM project is to completion.

Since CRM vision is the first risk with many relationships to the risk factors to follow it requires special attention by senior management. It is senior management who is responsible to give the direction to the company for future endeavours. Therefore, defining a CRM vision is the first issue management has to think about if they do not want a problematic implementation.

The participants in this research named "changing project goals" and "not knowing the advantages of CRM", as the most common factors to escalate the risk "nonexistent CRM vision".

For a "nonexistent CRM vision" it can be concluded that it will be the first risk in order of appearance in a CRM project having five strong relationships to other CRM risks. In isolation a "nonexistent CRM vision" does not have a large threat to the overall success of the project even if the chance of occurrence is high but it is a dangerous risk in a complex project set-up because it impacts on sixteen other CRM risks.

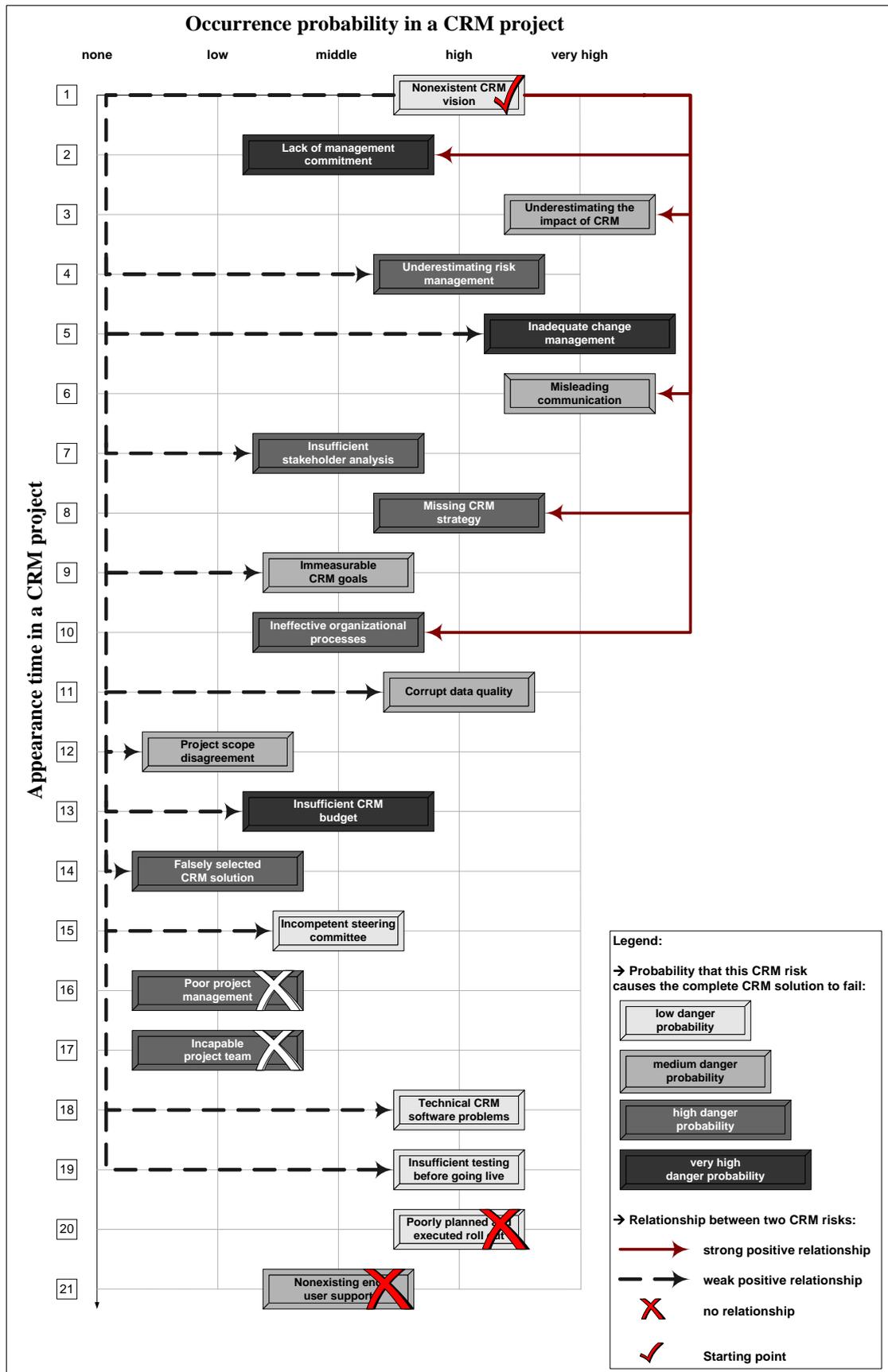


Figure 5.3: Systemic perspective of "nonexistent CRM vision"

5.3.1.2 Prerequisites of a successful approach

A good vision consists of two major components. The first one is the core ideology that is the foundation on which a company is built on. Without this fundamental part the company would not exist. The second component is the envisioned future. This describes what a company expects to achieve or create in its future (Collins & Porras, 2000).

The core ideology should be in place when creating a CRM vision because it defines the core values of the company. If it is not in place, CRM has no foundation to build on. Every further CRM activity will probably fail. However, if it is in place the envisioned future needs to be aligned with this core ideology.

Combining the overall business vision and the envisioned CRM future allows the CRM solution to be implemented successfully. This alignment transforms a good intention into a working system and a higher ROI on the incremental investments (Firth, 2004).

In general the CRM vision is a picture of what a customer-oriented enterprise should look like. It does not describe how this can be reached. This is part of the CRM strategy that has to be developed. The vision is the ultimate goal. All other steps are only enablers to achieve it (Jabali, 2005).

Visions are usually established based on problems that need to be solved. Typical CRM visions can transform a product focused company to a customer centric company or get a detailed understanding of the customer profitability (Honig, 2002).

Another part of creating a vision is communicating it. It does not help to have a perfect vision if nobody knows about it. It is important to recognize that vision becomes embedded through actions and behaviour and not through dictation (Jabali, 2005).

In summary it was found that a customer-oriented enterprise has to define the purpose of CRM have, align the core business ideology and the envisioned CRM future into one solid vision, communicate the CRM vision continuously and embed the vision through actions and behaviour.

5.3.2 Lack of management commitment

5.3.2.1 Interpretation of research

Management commitment is the second risk on the timeline in a CRM project. Figure 5.4 shows that only the CRM vision is prior to it, but with a strong relationship influencing management commitment.

A "lack of management commitment" has a medium probability to occur in a CRM project. However, when it becomes a problem it has very high danger probability to cause the complete CRM project to fail. Only three of the investigated CRM risks have this very high danger potential to fail all CRM efforts and therefore it requires special attention from management. Especially, since only they can give this commitment and stop it from becoming a problem.

One prior and seventeen following CRM risks are directly related to management commitment. Only two risks are not related. Management commitment has eight strong and ten weak relationships to other CRM risks. The strong relationships of management commitment are more common at the beginning of a CRM project in comparison to the weaker relationships of management commitment. But in comparison to CRM vision the distribution of management commitment is equally spread out. The two not related CRM risks appear again late in the CRM implantation process.

Most managers seem to have realised this issue since the occurrence probability is only medium. However, 61% of respondents who are end-users or project managers stated the occurrence probability as high or very high while 69% of the senior managers stated this issue as low or medium and even non existent. This indicates a different perception of good management commitment depending on the role of involvement.

The participants in the survey named the issue "management is absent during the project" and "there is no continuous communication on how important the project is", as the most common factors to escalate this risk.

For a "lack of management commitment" it can be concluded that it is the second risk in a CRM project with eight strong and ten weak relationships to other CRM risks. It has a medium probability to occur in a CRM project, but when it becomes a problem it has a very high danger probability to cause the complete CRM project to fail. There are different perceptions of good management commitment in companies depending on the role of involvement.

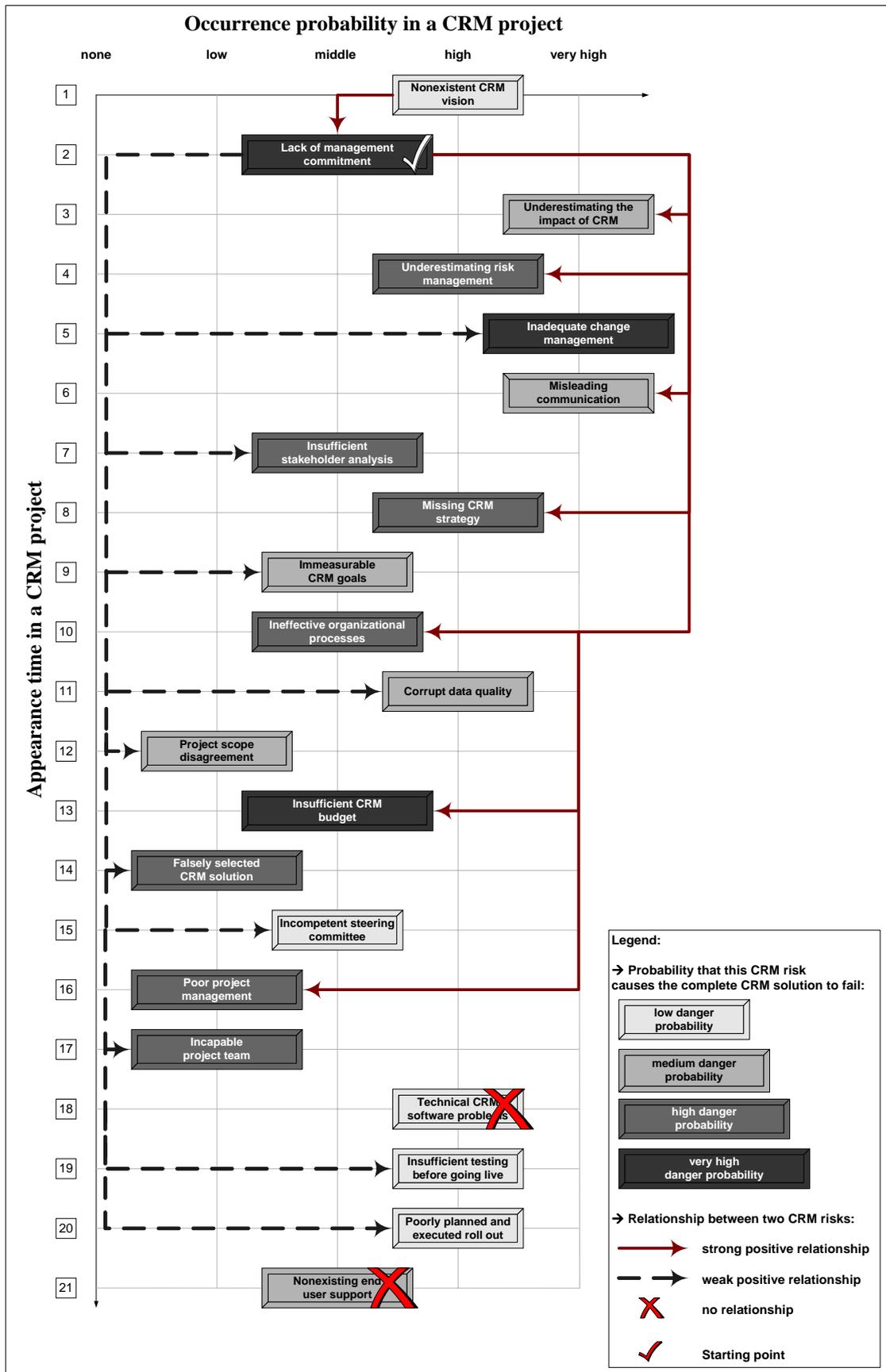


Figure 5.4: Systemic perspective of "lack of management commitment"

5.3.2.2 Prerequisites of a successful approach

After management has developed a CRM vision and has aligned it with their overall business vision, they have two options. First they can commit themselves to it and support it at all times, especially in difficult situations or second they can wait until there is a better time to start the CRM initiative. There is no other option and no middle ground.

Some managing boards state that this is obvious and self-evident, but there are other problems they face in their daily business. There are other issues and decisions to be made which are important and time consuming. The CRM project will eventually lose priority for the management and become just another topic to deal with. While this is a very common excuse it is not a good option for a strategic project like CRM. There are too many important decisions that require management attention and support to avoid conflicts. Most departments are affected by a CRM implementation, but they all have different goals and mindsets towards the project. Only top management has the power to align these groups, otherwise it is easy to work counter-productively. As a result very strong, continuous and long-term top management support and attention are required (Rochford, 2005).

Commitment has to be demonstrated at the highest level within the business. The managing director needs to send out a clear message to every department of the business to demonstrate the importance of a working CRM system. Without this commitment, it is very difficult to get all other users to understand how critical the CRM success for the company is. The project will not gain acceptance to be correctly implemented or successfully deployed (Bordoloi, 2000).

In addition and as a part of the management commitment an executive sponsor has to be assigned to the CRM project. The executive sponsor needs to send out a clear message to the entire business that demonstrates the importance of CRM. The sponsor has to distribute the mission statement that results out of the vision to everybody in the company. Every employee has to understand how the CRM project matches the vision and goals of the business. The sponsor has to ensure that the project stays on track and intervene when problems appear. The sponsorship needs to be on a long-term basis because employees tend to forget what they have to do to contribute to a successful CRM solution. A working project can easily get off track and fail. Therefore, the importance of CRM for the business is omnipresent (Stone & Foss, 2001).

A good sponsor is often a senior executive who is acceptable to all departments and capable to prevent internal resistance by other interest groups. The sponsor has to ensure the best interest of the entire enterprise and its customers. Without a strong execu-

tive sponsor taking responsibility for the final CRM sign-off of the CRM solution, the expected result will be influenced by strong-willed committee stakeholders using the implementation to reflect their needs for their department or division (Gentle, 2002).

In addition to the commitment on a high level, lower management support is also fundamental to the accomplishment of CRM. Without the active support from lower management, it is very difficult to obtain the level of commitment and participation necessary from the employees that should support the needs of a CRM implementation at a functional level. Each level of management must ensure that the next level is on board with the project and supporting it. Without this degree of commitment, it will be very difficult to implement the change necessary to support the CRM solution (Gray & Byun, 2001).

The best way to continue commitment is the active use of the CRM system after it is implemented by senior management. Management has to show everybody that they work with CRM and that they expect everybody else to adopt CRM into their daily business life (Rochford, 2005).

In summary it was found that a very strong, continuous and long-term top management support and attention is required. As a result an executive sponsor has to be assigned by the managing board as the responsible person for the overall success of the CRM project. The sponsor should not be changed until the project is officially finished. In addition, local sponsors from all departments and countries are assigned by the managing board. They support the executive sponsor and take responsibility in their area of work. The upper management has to use the CRM system after it is implemented actively to demonstrate management commitment.

5.3.3 Underestimating the impact of CRM

5.3.3.1 Interpretation of research

"Understanding the impact of CRM" is the third risk in order of appearance in a CRM project. Figure 5.5 shows that only the CRM vision and management commitment is prior to it, but both have strong relationships influencing it.

The impact of CRM towards all processes and departments is very difficult to understand. Therefore the challenge is to avoid that it will become a problem. It is one of three CRM risks that have a very high probability to appear in a project, but only with a medium probability to cause the complete project to fail. This is exactly the opposite of management commitment, which has a medium occurrence and a very high failure

probability. In interviews with CRM consultants they explained this outcome with the learning curve of management. The reason, for this risk having only a medium probability to fail the complete project, is that usually management realises its dimensions very quickly after they get involved with the topic.

However, after the management understands the impact of CRM to the company, they have to check their level of commitment and often have to adjust it. This indicates that there is a very close relationship between both risks, with a high danger potential since one has a very high failure probability and the other one a very high appearance probably and they are looped together.

The biggest threat of underestimating the impact of CRM to the company is the fact that it is the only investigated risk factor that has relationships to all the others. It has two prior and eighteen subsequent CRM risks that are directly related to it. Underestimating the impact of CRM has twelve strong and eight weak relationships to other CRM risks.

This includes an enormous danger potential because the company, which underestimates the impact of CRM, takes the chance that the potential of the following eighteen CRM risks to become a problem increases. This is a multiplier, which could stop any CRM effort before the technical part of a project has started.

The research results show that "no communication outside the project" and "no detailed project plan" are two factors indicating that understanding the impact of CRM was underestimated. The major issue with these two indicators is that when they become observable, the risk has already become a problem. Having in mind that this is the only investigated risk that is related to all other risks, management needs to pay special attention to understand what CRM means to their company.

For "understanding the impact of CRM" it can be concluded that it is the third risk in order of appearance in a CRM project having twelve strong and eight weak relationships to other CRM risks. It is the only risk in this survey that is related to all other issues, which leads to a large failure potential. Understanding the impact of CRM has a very high probability to occur in a CRM project with a medium probability to cause the complete CRM project to fail. Most managers realise very fast, after they get involved with CRM, its dimensions and have therefore to adjust their comprehension of CRM if they want to be successful.

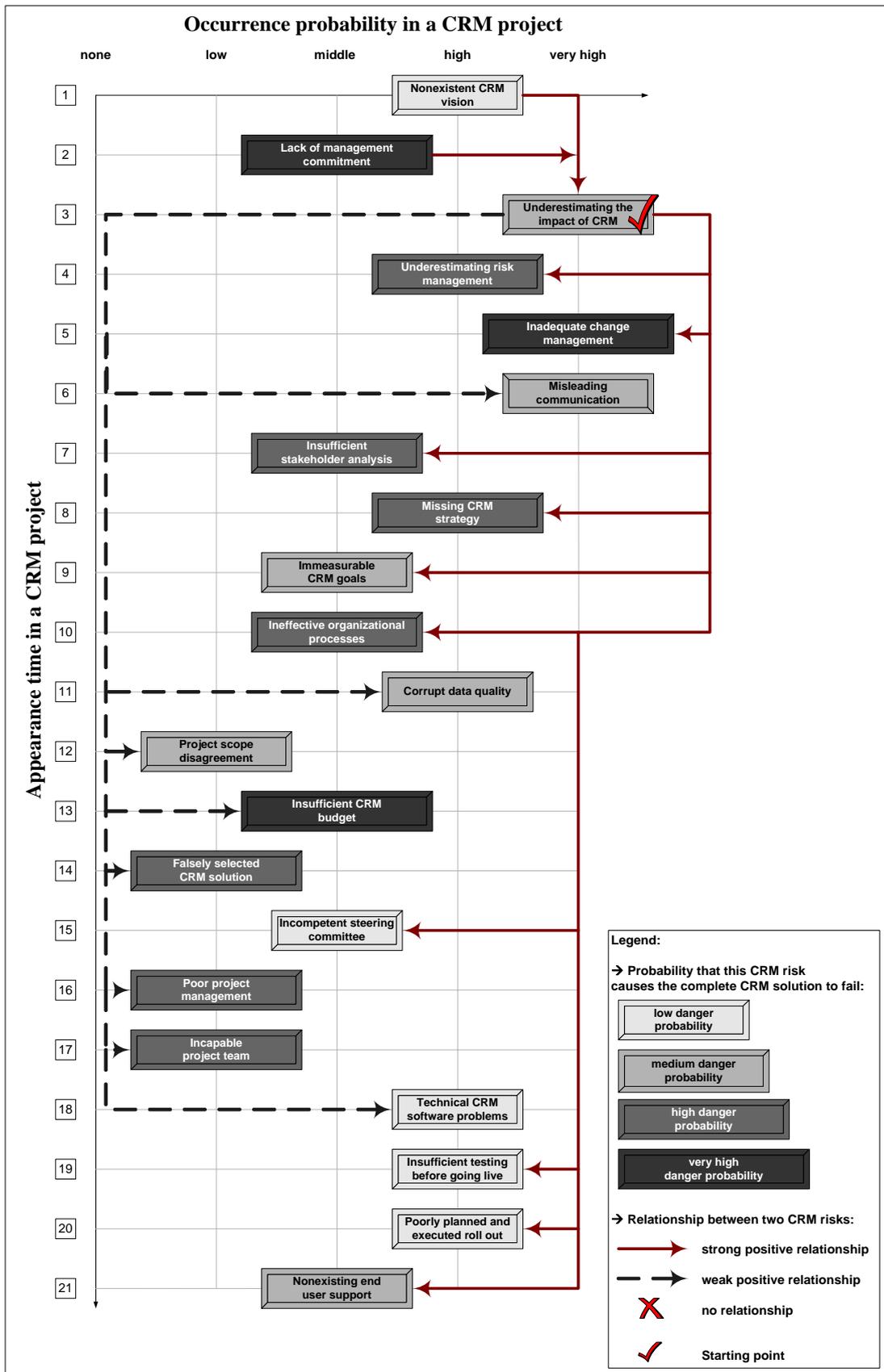


Figure 5.5: Systemic perspective of "understanding the impact of CRM"

5.3.3.2 Prerequisites of a successful approach

Getting the right impression of the meaning and dimensions of CRM is a prerequisite for realistic expectations of the benefits and value of a CRM solution. A limited understanding of CRM means that it is hard to understand what CRM will deliver. It is easy to set unrealistic, or incorrect, expectations of where benefits will be obtained. There are a number of contributory factors behind the limited understanding of a CRM solution. A major requirement for a successful CRM system is the recognition that it is not possible to buy a Customer Relationship Management solution like a word processing program. There will be no set-up button to make it work. CRM is not a technology solution. It is a business culture with well-defined and implemented business processes, measurable business objectives and an ability to quickly and efficiently adapt to the changing customer demands for products and services (Hershey, 2001).

The decision makers who want to implant CRM need an in-depth knowledge to judge the consequences of implementing a CRM solution. They need to take their time to understand how CRM works and why it requires these changes to be successful. Only superficial knowledge is not enough to value the significant changes that have to be made within the company. In most companies, the business culture has to be changed and business processes have to be reengineered. This is not an everyday business that can be handled as a part time project with the responsibility delegated to a lower management level. Therefore, CRM requires a lot of research, documentation and planning (Ward, 2002).

Another important issue is to understand the role of the end users. They are the enablers of every CRM solution. The management should always consider the end-users behaviour in their decision process. Understanding CRM means to expose the most valuable asset of a company, "the customer", to all employees. If the end-users are not an integrated part of a well accepted CRM solution, they could cause a lot of damage to the customer and therefore to the business.

In summary it was found that management needs to invest time to understand the consequences of implementing CRM because CRM is a business philosophy and not a word-processing software. In most cases strategies and business processes have to be revised. Getting the right estimation of CRM requires a lot of research, documentation and planning. In addition, management needs to consider the end-users in their decision process.

5.3.4 Underestimated risk management

5.3.4.1 Interpretation of research

Risk management follows in fourth place after vision, management commitment and underestimating CRM impact on a project timeline. Figure 5.6 shows that all prior CRM risks influence risk management CRM vision only weakly and the other two strongly.

CRM risk management is an equally dangerous risk since it has high probability to occur in a CRM project and a high danger probability to cause the complete CRM project to fail. Contrary to lack of management commitment, the end-users do not think of risk management as a dangerous CRM risk. Sixty-one percent of them believe that risk management becoming a problem has a probability of medium or less. Instead all managers and project managers estimated it as high or very high. This indicates again a different perception of risk factors depending on the role of involvement.

Three prior and fourteen subsequent CRM risks directly relate to risk management. Four risks are not related. Risk management has five strong and eleven weak relationships to other CRM risks.

The survey indicated two major factors that risk management is performed insufficiently. The first one and most often named failure is that "risk management is performed at the beginning of a project but not at the end anymore". There is no continuous analysis of CRM risks, especially during the critical phases of the project, because too many issues take place in parallel. The second indicator is when "problems appear which nobody has thought of". Some consultants state that this happens in every CRM implementation, but the goal has to be that this is an exception.

For "underestimating risk management" it can be concluded that it is the fourth risk in order of appearance in a CRM project with five strong and eleven weak relationships to other CRM risks. It has a high probability to occur in a CRM project and a high probability to cause the complete CRM project to fail. However, there are different perceptions concerning the occurrence probability of risk management depending on the role of involvement.

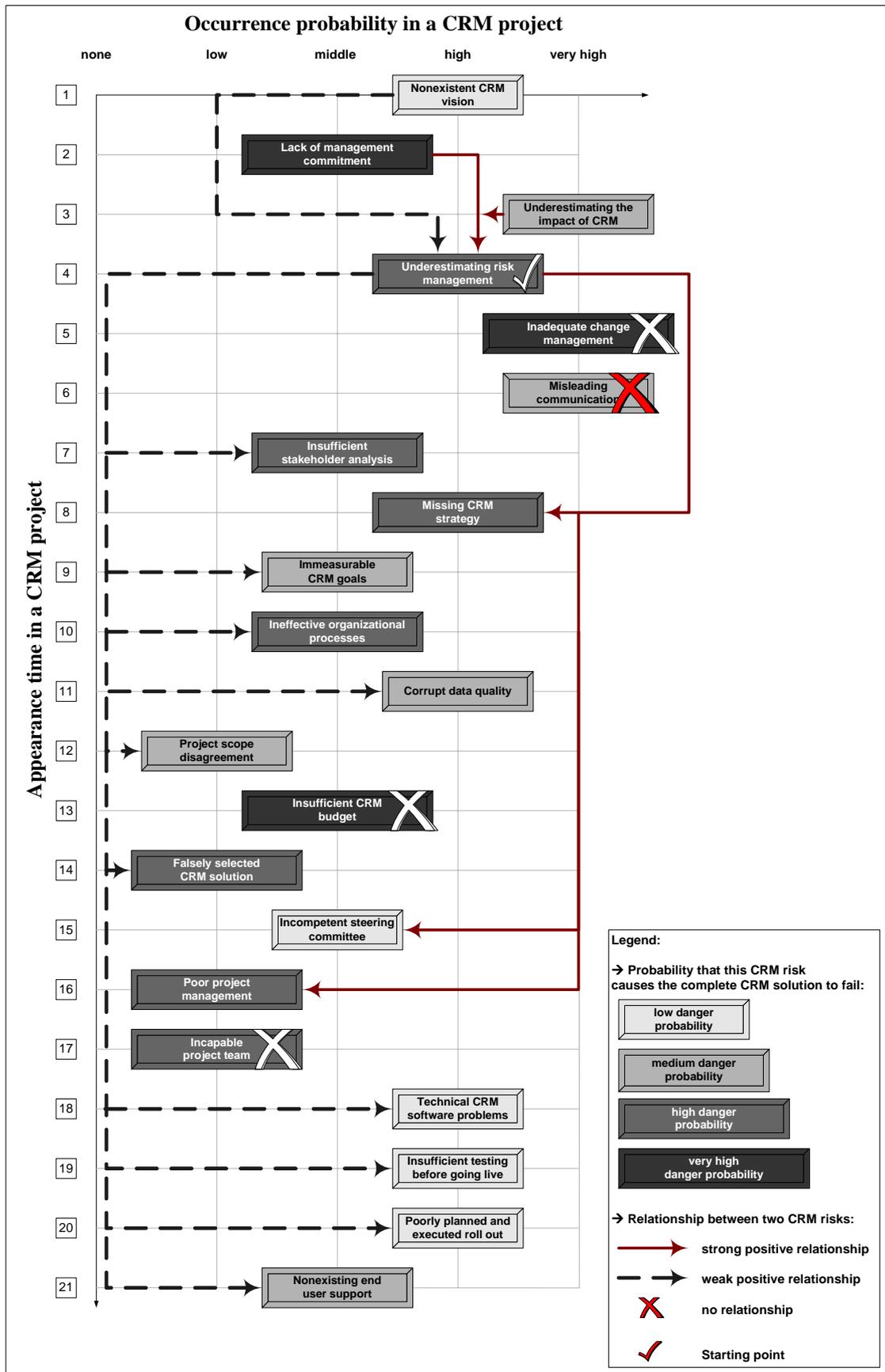


Figure 5.6: Systemic perspective of "underestimated risk management"

5.3.4.2 Prerequisites of a successful approach

A CRM implementation is a new project for most companies. They are willing to invest money but have no previous CRM experience. Therefore risk management needs to be integrated into the project. This takes place in four steps (Jones, 1998).

The first step to a risk management solution is to see it as a risk by itself and to include it in any further risk analysis. Since a CRM implementation is not daily business and a company has no previous experience in dealing with it, no adequate risk management can be performed (Culp, 2001).

Therefore awareness has to be created at senior management level for it to receive the necessary commitment. In addition, there has to be a common understanding of all potential risks and how they can be assessed. This assessment has to provide a common framework for risk identification, definition of controls, prioritisation of issues and solution possibilities. A task force of risk managers has to take responsibility to address these issues.

The second step is to monitor the process and the results. Once all potential CRM risks are identified, the risk managers need to understand what implications these risks have to the CRM project and to the overall business. Quantitative and qualitative risk indicators have to be set up including escalation criteria like goals and limits. This is the basis to track all twenty one CRM risks plus eventually some company specific ones. The progress of the risk evaluation has to be consolidated in a risk matrix, which has to be provided to all people involved. All CRM processes have to be identified, analyzed and monitored from the operational-risk perspective (Kun, 2003).

This third step qualifies all CRM risks and predicts what could happen if one or more of them become a problem. Analytical tools and accurate data are required to determine the possible impact on the organization. Potential outcome scenarios can be predicted and countermeasures can be set up to avoid failure.

Integration is the last step of the risk management process (Watkins, 2000). Integrating all necessary risk management processes and tools into the CRM initiative allows improved cost/benefit decisions on further strategic decisions. A company needs to link risk management to the strategic CRM planning process. Only when this linkage is established will the relationship between CRM risk management and the value of a successful implanted CRM solution be more directly understood.

In summary it was found that senior executives have to be aware that risk management is necessary in a CRM project and that potential CRM risks have to be identified, moni-

tored and qualified. In addition, risk management has to be integrated into the CRM project to be a part of the overall strategy and all decision processes.

5.3.5 Inadequate change management

5.3.5.1 Interpretation of research

Change management is usually the fifth risk in order of appearance in a CRM project. Figure 5.7 illustrates that it has only one strong relationship to the prior CRM risks and this is underestimating the impact of CRM.

This could lead to the assumption that change management is not that important. But the results of the survey show that evaluating change management as an easy risk can be a crucial mistake. It is the only CRM risk that has a very high probability to occur in a CRM project and a very high danger probability to cause the complete CRM project to fail. This view is equally shared by management and end-users. Change Management has such a great danger potential that it requires special attention from all parties involved. Different studies verify these outcomes and state it as the toughest obstacle to successfully get a software solution into operation.

The only thing that reduces the danger potential to some extent is the fact that change management is not related to eight of the twenty other CRM risks. Three prior and eleven subsequent CRM risks are directly related to change management. Eight risks are not related. Figure 5.7 shows that change management has six strong and six weak relationships to other CRM risks.

The research revealed that "no change manager" and "no identification of employees with the CRM project", are two common indicators that change management risk is not handled seriously.

For "inadequate change management" it can be concluded that it is the fifth risk in order of appearance in a CRM project and it has six strong and six weak relationships to other CRM risks. It is the most dangerous CRM risk with a very high probability to occur in a CRM project and a very high probability to cause the complete CRM project to fail.

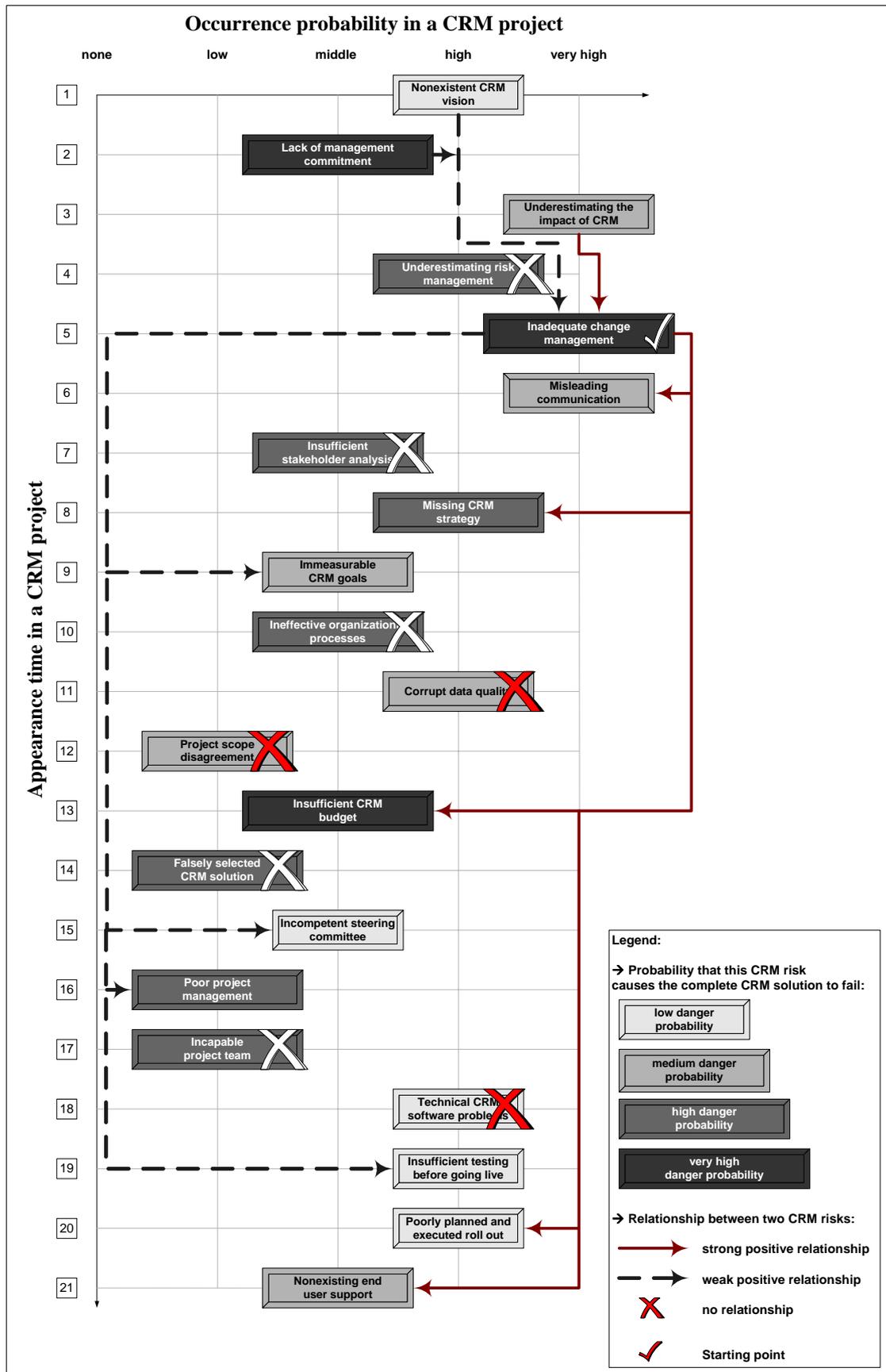


Figure 5.7: Systemic perspective of "inadequate change management"

5.3.5.2 Prerequisites of a successful approach

Management needs to see change management as the enabler of benefits that results from a CRM solution. The technology can be provided usually with more or less effort, but to get the new customer oriented business philosophy in place is a challenge. Sometimes senior management does not see this issue as critical. Various survey participants stated that change management is often neglected because of budget issues.

For a CRM solution to be adopted by all users, the solution must provide value to them. All involved parties need to see the advantage of implementing and using a CRM solution. Therefore key-users from affected departments need to be members of the CRM project (Brendler, 2002). They also have to be involved in design decisions. Prototyping and demonstrating the solution often helps the users get a deeper understanding of the new solution and support them to think beyond their current expectations. This involvement guarantees at least that there is a decision process of all end-user requirements. This helps to manage expectations and to deliver a message throughout the business. It helps to eliminate much of the resistance to change, because employees usually fear the unknown and not the known. When the users see that CRM will help and not hinder them in their daily business they will be more likely to support it (Wikström, 2004).

The change process usually includes five steps. The first one is to inform all employees about the decision to implement CRM. The second step is to talk to all involved employees and explain why it was necessary for the company to make this decision. The third step of developing a common agreement until the CRM solution is broadly accepted as a good strategy to achieve the overall goals of the company. The fourth step is to move the mind set of all employees and the technical implementation together to the new CRM philosophy. The last step has to ensure that this change is lasting and is not overtaken by old habits.

The only effective way to change basic behaviour is to create a new structure, a new system of accountability and rewards. Therefore, change management in a CRM project includes five areas of actions. These five areas of change management actions have to be performed based on the five step change process (Kincaid, 2001).

1. Change management in a company has to be organisationally and individually established in the company as well as in the CRM project organisation. The change structure depends on the scope of the CRM project and the size of the organisation. The establishment of CRM should be set up before the project begins. The structure generally changes throughout the project in accordance with the CRM and change

management strategy. According to these changes resulting tasks and measurement criteria have to be adjusted.

2. A change management analysis produces an evaluated overview of the project situation and the interest groups, reduced to the most important aspects. It puts the different aspects of change management in context and offers an ongoing diagnosis of the CRM project. An accurate and detailed analysing process supports the preparation of possible obstacles.
3. The change management concept is a methodically developed, conclusive and effective planning paper that has to be updated throughout the CRM project. The main part of the concept paper is the change strategy, describing the project-specific change solution and the change guidelines from which the solution is derived.
4. The change management measures described in the concept paper are implemented during the project as scheduled. Detailed planning of the company specific change mile stones are required in a CRM project before the implementation starts. This guarantees a smoother alignment of change activities in the process of implementing CRM.
5. To ensure a successful change management, project controlling is required. The controlling focuses on the evaluation of the project's status with regard to the defined change management goals and the evaluation of the effectiveness of the change measurements.

In summary it was found that change management has a variety of success factors. An important one is the involvement of end-users in the design process to ensure their acceptance of the process in order to reach CRM benefits. But change management is often neglected because of budget issues.

The change process can be divided into five steps from the first information the employees receive to every effort to ensure that the changes are long lasting and not overtaken by old habits. The five change management actions include establishment, analysis, concept design, measurement and controlling.

5.3.6 Misleading communication

5.3.6.1 Interpretation of research

Misleading communication is the sixth risk in order of appearance in a CRM project following inadequate change management. Figure 5.8 shows the integration of communication in a CRM project.

Some of the survey participants mentioned as a comment that these risks belong together. Change management does not work without communication.

This leads to the assumption that some of the danger potential of change management in a CRM project has to be transferred on to the risk factor communication. Communication has a same risk level like understanding the impact of CRM. It has a very high probability to appear in a project with a medium probability to cause the complete project to fail. Communication is the last risk on a timeline that has a very high occurrence probability; all risks to follow are less likely to appear in a CRM project. These results were asked in isolation but taking the close dependency to change management into account, create an even higher danger potential to the overall CRM success.

Four prior and eight following CRM risk are directly related to communication. Eight risks are not related. Figure 5.8 shows that communication has four strong and eight weak relationships to other CRM risks. These survey results were equally distributed concerning role of involvement, industry or region. This leads to the conclusion that everybody involved in a CRM project knows that communication is very likely to become a problem.

The research indicated that "no open communication is performed by project management" and "different project teams do not share information", are two common indicators that communication is neglected.

For "misleading communication" it can be concluded that it is the sixth risk in order of appearance in a CRM project with four strong and eight weak relationships to other CRM risks. It has a very high probability to occur in a CRM project and medium probability to cause the complete CRM project to fail. It has a very close relationship to change management.

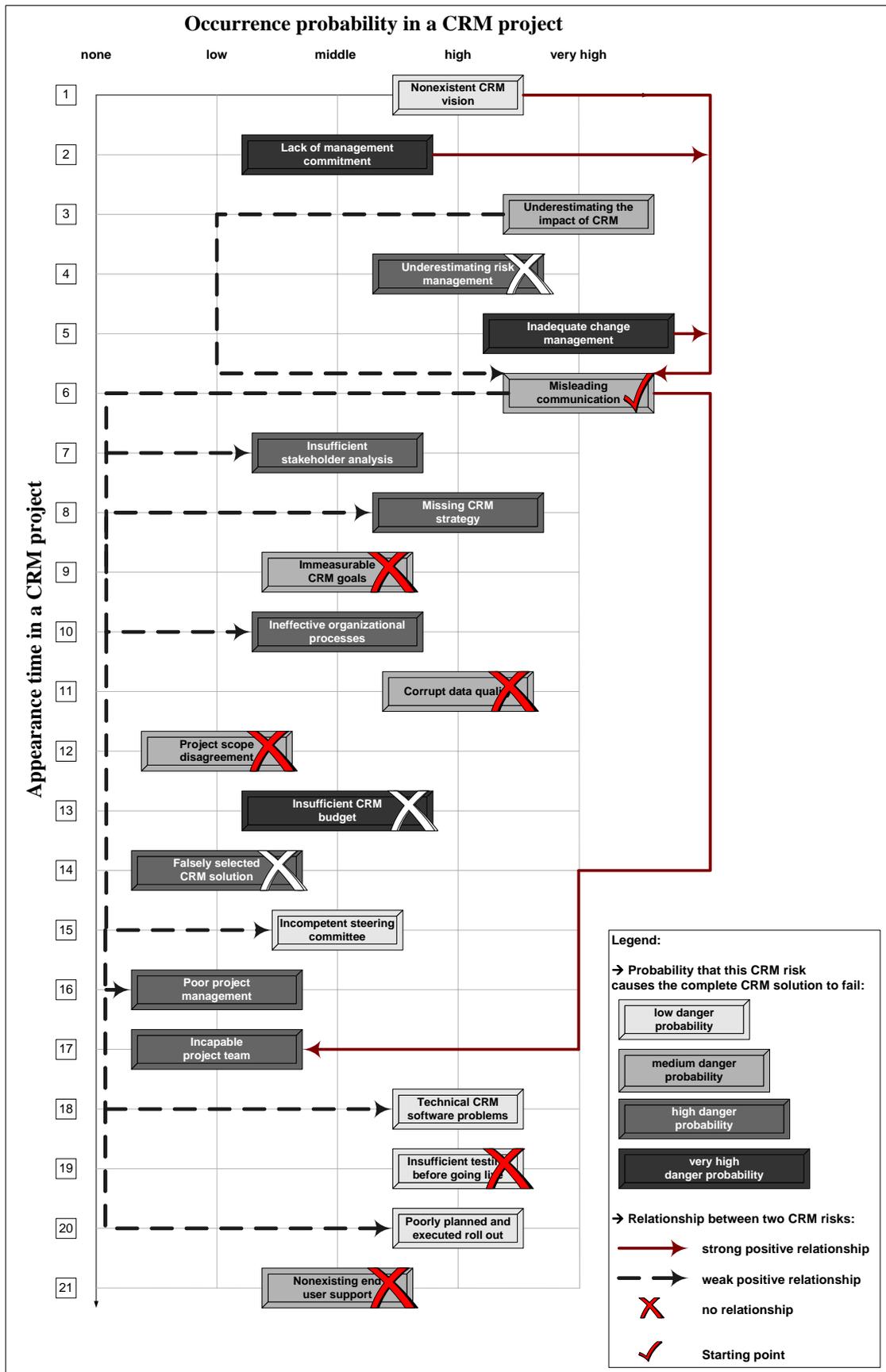


Figure 5.8: Systemic perspective of "misleading communication"

5.3.6.2 Prerequisites of a successful approach

A solution for "misleading communication" is project communication management. It ensures a timely and appropriate generation, collection, dissemination, storage and ultimate disposition of project information. Communication management in a CRM project provides the critical links among people, ideas and information that are necessary for success. The Project Management Institute recommends four steps to successfully manage the communication processes (Project Management Institute, 2000).

The first step is communication planning. Communication supports every CRM project, especially those that require stakeholder acceptance, understanding or action. Therefore, communication needs to be planned strategically to develop effective ways to communicate with all involved stakeholders in a timely, appropriate and cost-effective manner. The impact of effective or ineffective communication needs to be understood in terms of its impact on the outcome of the CRM project.

All aspects of communication to outsiders of projects should be carefully planned. Information leaving the CRM project can be misleading to people that are not involved and create rumours. There has to be a separation between project, company and external communication. Since most information can easily be misunderstood the information itself or the wording of it should be limited to a certain user group.

The primary purpose of communication planning is to identify different strategies for action that will help meet the CRM project goals and vision. This involves determining the information and communication needs of the stakeholders. The planning process determines who needs what information, when, how it will be transferred and by whom?

The second step is information distribution. Good and regular communication will help business users and developers get a clear understanding of the requirements. It helps the project stay on track and does not take any unnecessary detours (Thomas, 2003). Everyone involved in the CRM project must be prepared to send and receive communications, and must understand how the communications in which they are involved affect the CRM project. Inadequate communication during the CRM implementation can cause that everybody to believe that the project is on the right track to being successful, because there are no outstanding issues. On the other hand there is a lot of unnecessary communication, which takes time and is not productive.

However, communicating the wrong way can cause more problems than no communication at all. Due to the large scope and diverse stakeholder groups that are involved in

most CRM projects it is important to understand their needs and how they are impacted by the communication that is being delivered (Tanoury & Ireland, 2002).

Therefore information distribution is making needed information available to project stakeholders in a timely manner and includes implementing the communications management plan, as well as responding to unexpected requests for information.

The third step, performance reporting, involves collecting and disseminating performance information to provide stakeholders with information on how resources are being used to archive project objectives. This process includes status reporting, progress reporting and forecasting.

The fourth and last step is administrative closure after all project objectives have been achieved. This happens at the end of the CRM project. It is communicated to all stakeholders that the project is finished.

In summary it was found that communication is necessary to include all stakeholders in a CRM project. Every CRM project requires communication management to ensure communication processes and guidelines are in place. It determines who receives what kind of information and includes four steps, namely: communication planning, information distribution, performance reporting and administrative closure.

5.3.7 Insufficient stakeholder analysis

5.3.7.1 Interpretation of research

Insufficient stakeholder analysis is the seventh risk occurring in a CRM project. It is influenced by all prior CRM risks except change management. One third of the CRM risk factors in this study have been investigated until this point.

An "insufficient stakeholder analysis" has a medium probability to occur in a CRM project and a high probability to cause the complete project to fail. Different CRM experts mentioned, when seeing the results of this study, that without a well done analysis many implementation decisions are based on assumptions, which lead to uncertainties in future decisions.

Five prior and nine following CRM risk are directly related to stakeholder analysis. Six risks are not related. Figure 5.9 shows that an "insufficient stakeholder analysis" has five strong and nine weak relationships to other CRM risks. The only strong relationship from the previous risks is from "underestimating the impact of CRM".

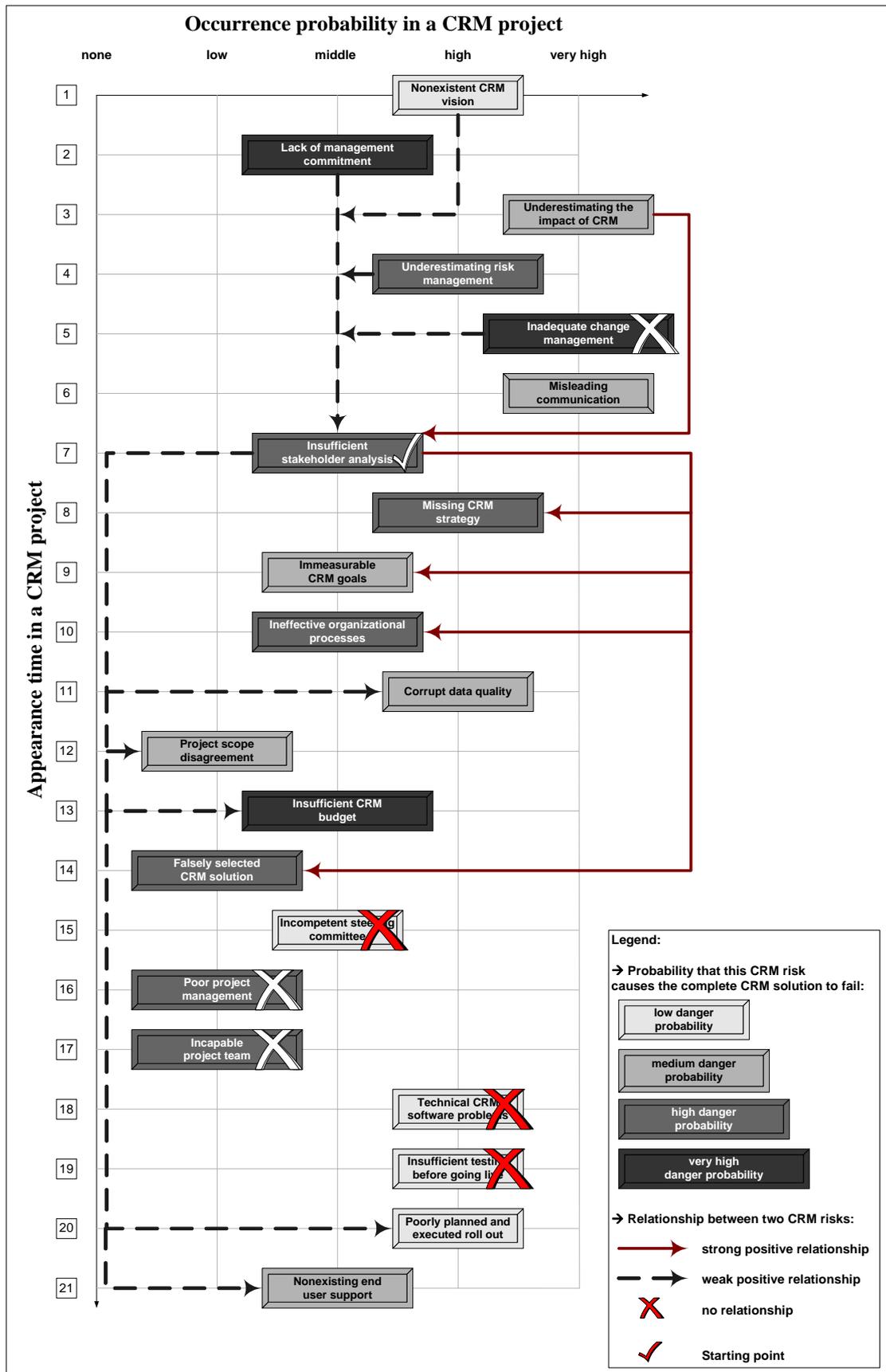


Figure 5.9: Systemic perspective of "insufficient stakeholder analysis"

This indicates that analysing the stakeholders before implementing a CRM solution is often underestimated too. Except change management all CRM risks that are not related to analysing the stakeholders occur towards the end of the project. CRM strategy, CRM goals and CRM processes have strong relationships to a well done stakeholder analysis. They are the next three risks to follow a stakeholder analysis, which indicates that they need a stakeholder analysis as a basis to be performed correctly.

The survey indicated two major factors that stakeholder analysis is performed insufficiently. The first one and most often named failure is that "the wrong CRM software functionality is implemented", because it was chosen only by management who are not working on a daily business with it. The second indicator is "no change in handling customer relationships", simply because the company does not know what the customer expects.

For "insufficient stakeholder analysis" it can be concluded that it is the seventh risk in order of appearance in a CRM project and it has five strong and nine weak relationships to other CRM risks. It has a medium probability to occur in a CRM project and high probability to cause the complete CRM project to fail. "Insufficient stakeholder analysis" is strongly influenced by underestimating the impact of CRM and strongly influencing CRM strategy, goals and processes.

5.3.7.2 Prerequisites of a successful approach

There are many people who are affected by a company's performance and who have claims on its performance. These people are the stakeholders and need to be taken into consideration when the business develops their CRM strategy. The stakeholders can be separated in three parties that are involved in CRM (Hitt, et al., 1997):

- Capital market stakeholders (shareholder and the major suppliers of a firm's capital).
- Product market stakeholders (the firm's primary customers, suppliers, host communities and unions representing the workforce).
- Organisational stakeholders (all of a firm's employees, including both non-managerial and managerial personnel).

All of those three parties will have a different view towards CRM. In addition, these groups are very heterogeneous and have therefore even different perspectives within one party. Therefore, it is very important to take all interest groups into reflection before a CRM strategy is developed.

The purpose of a stakeholder analysis is to identify and define the characteristics of key stakeholders and help to classify relations between them. In addition different stakeholder interests are pointed out in correlation to the goals of the CRM project. Therefore this analysis needs to be an ongoing process since stakeholders' interests may change during a CRM project. A stakeholder analysis helps to identify conflicts of interests between stakeholders and supports the handling of these relationships during the entire CRM project (Rosenfeld, 2001). A CRM stakeholder analysis is conducted in three steps (Grundy & Brown, 2003).

The first one identifies major stakeholder groups. Capital market, product market or organisational stakeholders is only a first separation. Breaking stakeholder groups into smaller units will often assist in identifying important groups who may otherwise be overlooked. It is important to detect all stakeholders in order to avoid unexpected resistance at a later stage of the CRM project.

The second step determines interests and relations of each stakeholder group. It is necessary to identify what the stakeholders expect of the project and how they could benefit from it. In addition it is essential to find out how committed they are to the project and what real interest they have that might conflict with the CRM project.

This analysis focuses on how stakeholder can influence the project success and how important they are to the overall CRM performance. The most powerful stakeholders are the top management and the project sponsor. Importance refers to those stakeholders whose problems, needs and interests match the goals of CRM. These stakeholders have to be involved to support the project outcomes. In addition to these two important stakeholder groups every CRM stakeholder analysis needs to focus on the end-user and of course the customer. Both are often neglected but they are crucial for the long-term success. The end-users should always be treated as important stakeholders and customers have to be deeply investigated in order to implement the right CRM functionality.

The third step is to establish different involvement strategies for all stakeholders. The strategy design depends on the outcomes of the stakeholder analysis. All stakeholders have to be involved in at least one strategy. Since a stakeholder can change their level of involvement as the project continues, the strategy has to be adapted as well.

In summary it was found that every CRM project has a large variety of diverse stakeholders, who have different interests and therefore need to be taken into account during the CRM implementation. End-users and customers are very important for the success of a CRM project, but are often overlooked. Therefore, a stakeholder analysis is per-

formed in three steps, namely: identifying all stakeholders, determining their interest and relationships and developing a strategy of involvement.

5.3.8 Missing CRM strategy

5.3.8.1 Interpretation of research

"Missing CRM strategy" is the eighth risk that occurs in a CRM project. This is an unexpected result since most managers who delivered input to create this survey estimated the strategy to be one of the first three CRM issues. However, there was no different perception towards the time of appearance of CRM Strategy and the role of involvement of the participants. This indicates that the managers were not aware of most of the other CRM risks until they were confronted with them.

"Missing CRM strategy" has a high probability to appear in a project and a high probability to cause the complete project to fail. This is exactly the same constellation as "underestimated risk management" in a CRM project.

A CRM strategy is influenced strongly by all previous risks. Only "misleading communication" has a weak relationship. Taking this network of correlations into account helps to understand the difficulty to design a satisfactory CRM strategy for all stakeholders.

In addition, the strategy influences all the CRM risks to follow except technical software problems. It has seven prior and twelve following CRM risks that are directly related to it. Figure 5.10 shows that the comprehension of CRM has eleven strong and eight weak relationships to other CRM risks. After "underestimating the impact of CRM", the strategy has the most relationships to other risk factors. Nineteen out of twenty risks are related to the strategy of a CRM project.

The participants in the survey named the issue that the "strategy is not endorsed at top management level" and that it is "not aligned with the overall business strategy", as the most common factors to indicate an insufficient CRM strategy.

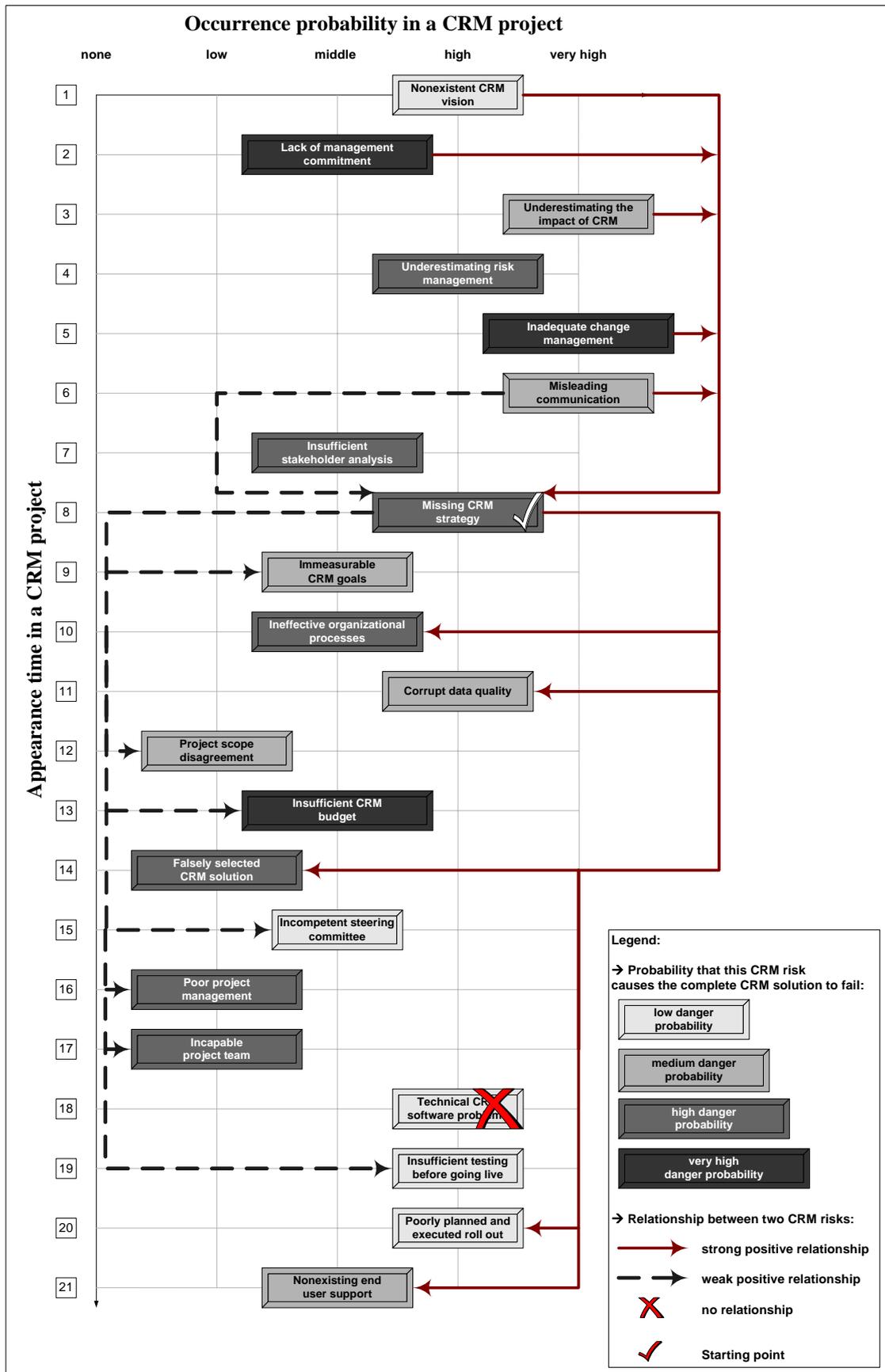


Figure 5.10: Systemic perspective of "missing CRM strategy"

For "missing CRM strategy" it can be concluded that it is the eighth risk in order of appearance in a CRM project with eleven strong and eight weak relationships to other CRM risks. It has a high probability to occur in a CRM project and high probability to cause the complete CRM project to fail. CRM strategy is influenced by all previous risks strongly, only "misleading communication" is weakly related and it influences all following CRM risks except "technical CRM software problems".

5.3.8.2 Prerequisites of a successful approach

The starting point of a CRM strategy is the review and analysis of the overall business strategy to ensure that it is integrated as a part of it. Both strategies have to be aligned and work interactively with each other. In the case that the strategies would work in different directions, the new customer orientation would be counter-productive to the entire business (Fadia, et al., 2003).

Therefore, a CRM strategy is derived from the corporate strategy with focus on customer management visions, definitions, goals and individual organizational unit tasks (Eechambadi, 2002). The development of a CRM strategy can be divided in four steps (Blumberg, 2002).

Initialization is the starting point for a CRM strategy. It is used to get a common understanding on expectations of CRM. Initiation delivers a general agreement on the procedures needed to develop the company's CRM strategy and initiates the process to understand the real management objectives to get a clear picture of the company's needs.

The second step is analysing the existing CRM strategy and the influencing environment. The analysis will bring up areas of improvement and delivers a CRM foundation. The goal is to get a detailed understanding of today's CRM situation by analyzing sufficient information like existing CRM processes, customer profitability and segmentation, customer satisfaction and loyalty, market, competitors and change readiness. An input for the CRM strategy is a stakeholder analysis and in addition a SWOT analysis with special customer attention. A company needs to perform this overall evaluation of their strengths, weaknesses, opportunities and threats to examine their external and internal environment (Kotler, 1997).

- External (view to the market): A business has to monitor key external forces (demographic/economic, technological, political/legal, social and cultural) and significant microenvironment actors (customers, competitors, distribution channels and suppliers) that affect its ability to earn profits. For each trend or development, management needs to identify the associated opportunities and threats.

- Internal (view into the business): Each business needs to evaluate its internal strengths and weaknesses periodically. This analysis measures performance of a certain criteria and rank it accordingly in importance to the company. Independent internal or external consultants could be involved.

Based on these customer facts it is important to analyse the relationships to all customers regularly by segmenting them into target groups (Rigby, et al., 2002). Now the business has the possibility to rank these groups to decide which customers need special treatment and which do not. This information is very important to customise the CRM system to the company strategy. Most CRM solutions have a predefined strategic approach integrated already. Nevertheless, a good CRM system should always adopt the customer strategy of a company and not the other way around.

Developing the CRM strategy is the third step. The development of a CRM strategy comprises the alignment of the strategy and the company's vision and the design of a CRM roadmap to schedule procedures to get early wins and long term successes. In addition, milestones will be defined and action items will be developed and prioritized to aim at a smooth implementation. The CRM strategy needs to focus on adapting all the processes, attitudes, behaviours and technologies that support customer interactions throughout the business.

Every company has different internal and external environments that make it unique. There is not one suggestion for the optimum CRM strategy, because of the variety of business philosophies. Instead, it is a very difficult task for all companies to develop their optimum approach. This crucial step serves as a basis to a successful CRM system. However, a good CRM strategy is consistent at all times because often business processes have to be changed, added or eliminated. Before implementing a CRM system, the strategy should be revised and questioned. The strategy should be up to date and not historically grown. Later changes in an old strategy involve many problems and high costs (Oggenfuss, 2002).

The fourth step is the transfer of the developed CRM strategy to all project areas. The CRM strategic guidelines are used as a framework to control all customer areas in the company.

In summary it was found that the CRM strategy has to be aligned with the overall business strategy and that there is no "perfect" CRM strategy, it depends on the companies' internal and external environments. Designing a CRM strategy is done in four steps, namely: initialisation, analysing, developing and transferring.

5.3.9 Immeasurable CRM goals

5.3.9.1 Interpretation of research

Immeasurable CRM goals are the ninth risk in order of appearance in a CRM project. Usually when creating a CRM vision the management has already some ideas of what goals need to be completed to call the vision accomplished. However, the participants of the survey stated that the first time to really address this issue is after the CRM strategy is defined. Different CRM experts mentioned when seeing the results of this study that defining a CRM strategy and CRM goals is an interactive process performed at the same time.

The risk "immeasurable CRM goals" has a medium probability to appear in a project and a medium probability to cause the complete project to fail. This leads to the assumption that measuring goals in a CRM project is well addressed by management compared to the previous risks.

Measuring CRM goals is influenced by all previous risks except misleading communication. Altogether measuring CRM goals has seven prior and eight following CRM risk that are directly related to it. Five risks are not related. Figure 5.11 shows that immeasurable CRM goals have six strong and nine weak relationships to other CRM risks.

The research revealed that "not identified goals" and "regularly changes of goals", are two common indicators that CRM goals are not handled seriously in CRM project.

For "immeasurable CRM goals" it can be concluded that it is the ninth risk in order of appearance in a CRM project and it has six strong and nine weak relationships to other CRM risks. It has medium probability to occur in a CRM project and medium probability to cause the complete CRM project to fail. It is influenced by all previous risks except misleading communication.

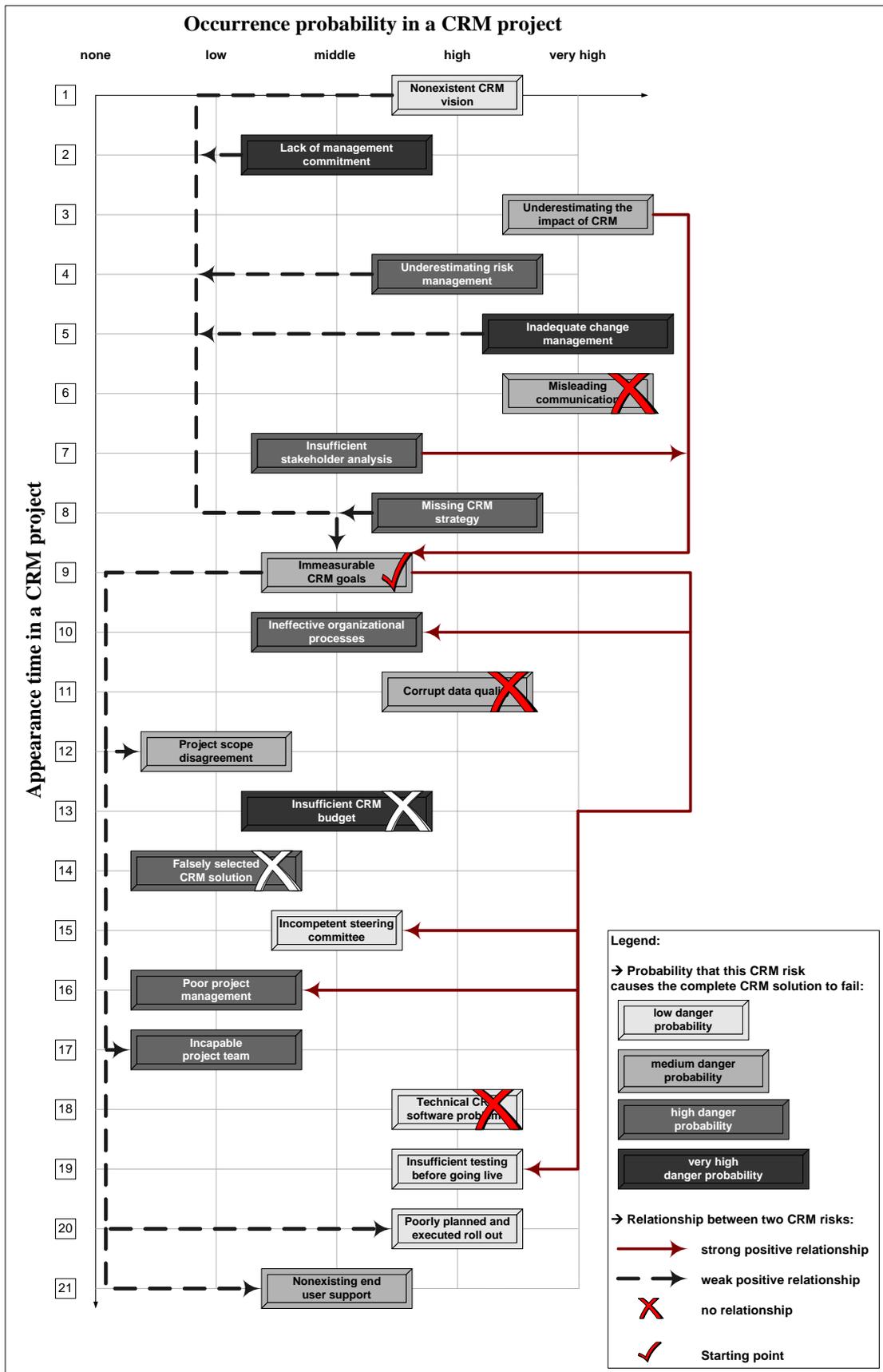


Figure 5.11: Systemic perspective of "immeasurable CRM goals"

5.3.9.2 Prerequisites of a successful approach

Every company implementing a CRM solution has a variety of goals it would like to accomplish. Depending on the environment and the nature of the company the goals can be very different depending on the CRM vision. It is very easy to define goals, but complicated to measure. Therefore it is important to set up measurement criteria and methods to calculate them before the CRM implementation is started. Only with predefined goals at the beginning of a CRM implementation is it possible to see and evaluate if the CRM solution is successful in the end. Measuring CRM goals is done in three steps (Foss, et al., 2002).

The first step is to list all CRM goals that a company is targeting. Depending on the stakeholders involved in the process, this list varies in length. The only criterion for these goals is that they have to be in line with the CRM vision and the resulting CRM strategy.

The second step is to evaluate this CRM list. Depending on the need to the business, the goals have to be ranked. The more important they are the higher is the ranking score. The score indicates how important the goal is and what kind of goals have to be implemented to call CRM a success or failure. This does not mean that all other goals are not implemented, but they are not success relevant and therefore do not have to be monitored closely.

The third step is to define clearly measurable outcomes of every important goal. The measurement process needs to be as specific as possible to avoid misunderstandings. It is essential to set clear goals and document them in detail. All operative and strategic objectives have to be attainable and quantifiable otherwise failure is inevitable.

The measurement process is divided in short-term and long-term measurements. The long term ones will be the milestones along the project. They will be evaluated, documented and signed off to demonstrate the success of the project. Nevertheless, since it takes a long time to recognize the total possible value of CRM, it is important to establish short-term objectives as key performance indicators that the project is on the right track. This is an ongoing progress evaluation to ensure long-term success.

In case a goal cannot be reached the consequences to the business needs to be clear in advance. Only if there is an obvious understanding of the consequences will most employees see the urge to do anything to achieve the target in time (Mochal, 2003).

The fourth step is the sign off that a goal is completed successfully. The company has to agree formally that the goals on the CRM list are completed with the agreed measurable outcome.

In summary it was found that all CRM goals need to be aligned with the CRM vision and that every CRM goal needs to be evaluated and ranked depending on its need to the company. All operative and strategic objectives have to be attainable and quantifiable. Success measurement criteria need to be set up before the implementation starts. During the CRM project all goals need to be signed off by selected stakeholders to call it a success.

5.3.10 Ineffective organisational processes

5.3.10.1 Interpretation of research

"Ineffective organisational processes" is the tenth risk in order of appearance in a CRM project. It is influenced by all prior CRM risks except change management.

The risk "ineffective organisational processes" has a medium probability to appear in a project and a high probability to cause the complete project to fail. This is the same risk constellation as "insufficient stakeholder analysis".

Eight prior and eight following CRM risks are directly related to ineffective CRM processes. Four risks are not related. Figure 5.12 shows that the risk, ineffective organisational processes, has six strong and ten weak relationships to other CRM risks.

The risk "ineffective organisational processes" has the same number of relationships to other risks before and after it appears in a CRM project for the first time, but all strong relationships appear earlier. This leads to the assumption that many prerequisites are required to define effective CRM processes.

The survey indicated two major reasons that CRM processes are not performed effectively. The first one and most often named failure is that the "CRM software dictates the customer oriented processes" and not the organisational requirements. The second indicator is that the "CRM processes are not verified before the CRM project starts". In most cases this necessitates a lot of changes during the implementation.

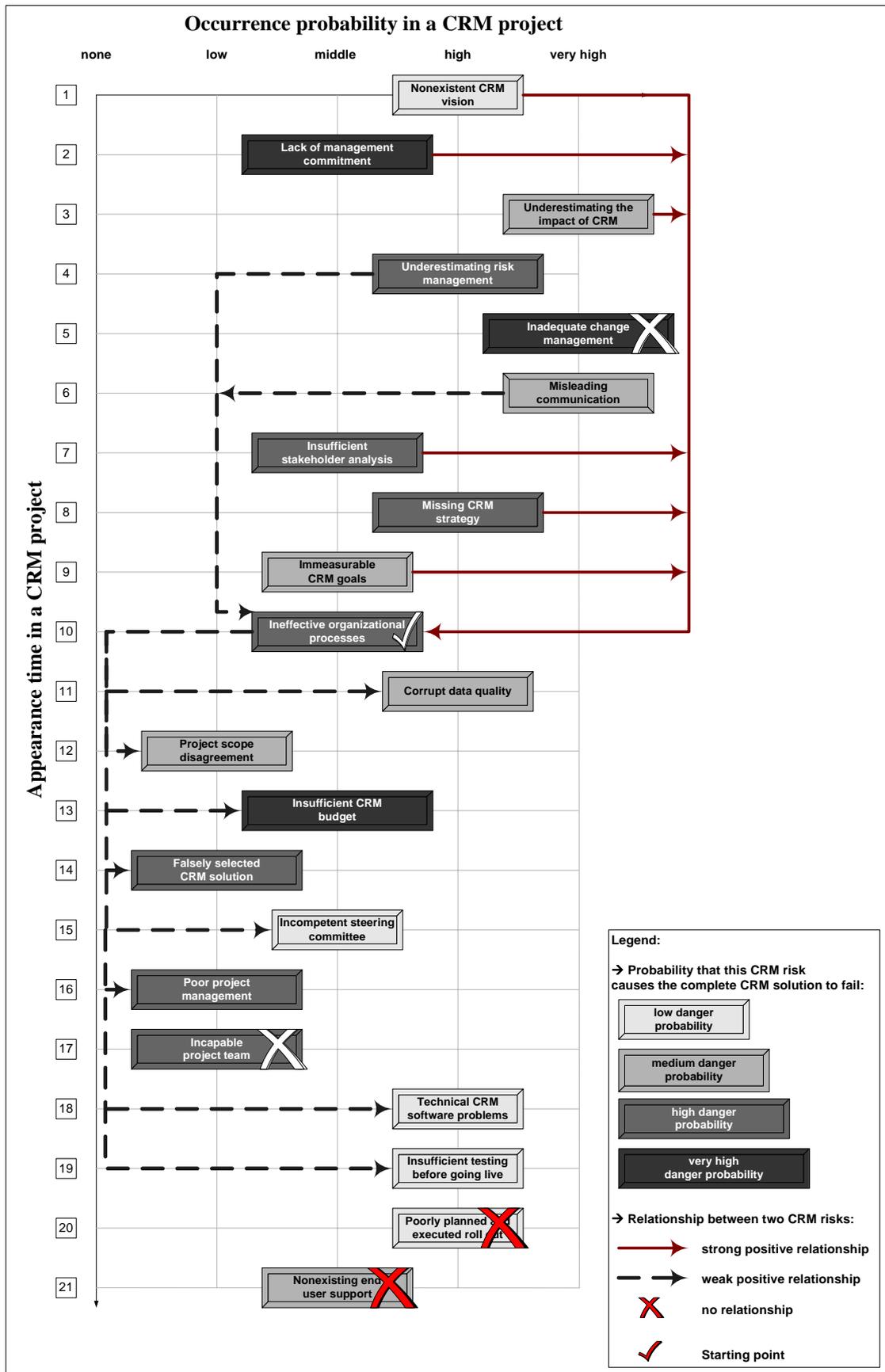


Figure 5.12: Systemic perspective of "ineffective organisational processes"

For "ineffective organisational processes" it can be concluded that it is the tenth risk in order of appearance in a CRM project with six strong and ten weak relationships to other CRM risks. It is influenced by all previous risks except change management and has medium probability to occur in a CRM project and high probability to cause the complete CRM project to fail.

5.3.10.2 Prerequisites of a successful approach

Many organizations try to attach a CRM solution to their existing business structures. This can create major problems since many enterprises have flawed customer-based processes. Companies usually define these processes many years before and only make minor corrections and fail to adjust them to changing customers' demands. The worst thing a business can do is to integrate a flawed process into a CRM system, because when automation is added the negative effects of the flawed process increase and the enterprise can unwillingly anger its customers. CRM can speed up all processes, bad and good (Goldenberg, 2002).

Organisations that just replace an existing system with a new one without checking and adjusting the old business processes will not improve their customer relationship satisfaction ratings. Therefore, the business structures and processes have to be revised and optimised towards the customers' needs. CRM is an opportunity to implement new customer oriented processes and to eliminate old ones. This is done in four steps (Foss, et al., 2002).

The first one is process description, which consists of three areas. The first area identifies the existing CRM processes and clusters them. The second area is analysing these processes. A well-founded analysis of all CRM processes and structures is the basis for any optimisation. Without the exact knowledge of the existing processes, it is useless to start any redesign program. This analysis delivers indicators of which processes have to be changed, improved or eliminated. Area three documents all of these CRM processes in detail.

The second step is process design and focuses on CRM process reengineering. Based on the findings of the first step, the management or steering committee has to decide which CRM processes need to be changed or created. This includes reviewing, understanding, modifying, documenting and employing the desired business processes, procedures, rules and policies. The processes should be simple to audit and understand. All employees need to have the same understanding of the CRM processes. In addition, the processes need to be flexible for future changes in customer demands.

The third step is implementing the redesigned processes. Process implementation is about implementing the process changes according to predefined key performance indicators. The implementation phase consists of a technical and people focussed area. The technical area is about integrating the CRM processes technically and the people area is about gaining commitment from the important stakeholders for these changes (Bergey, et al., 1999).

The fourth step is process monitoring. The process monitoring phase represents a systematic cost and benefit monitoring. The monitoring process checks the process costs and detects when and where key performance indicator deviations occur. Following the "closed loop" principle, further process corrections will be developed and implemented and the monitoring process starts again.

In summary it was found that a new CRM solution is the indicator to rethink the customer oriented processes of a company because implementing old customer processes in a new CRM system will be no solution for customer excellence. The existing customer processes need to be identified, analysed and documented. In addition, the new or redesigned CRM processes have to be implemented and monitored.

5.3.11 Corrupt data quality

5.3.11.1 Interpretation of research

"Corrupt data quality" is the eleventh CRM risk on a CRM project timeline. From all investigated CRM risks, data quality is the mid point. Even if this seems to be a good point in time to evaluate the chance of success or failure of the project, various CRM experts estimated that only 20% of the time and budget are used up to this point and that the biggest part of the project is still ahead.

Figure 5.13 shows that the risk "corrupt data quality" has a high probability to appear in a project and a medium probability to cause the complete project to fail.

There is a different risk perception concerning data quality depending on the role of involvement. 60% of top management and end users believe that data quality has a high or very high danger potential to the project, but only 25% of project managers see this risk as critical. An explanation for this different perception could be that many project managers leave the project before this issue become critical in the daily work.

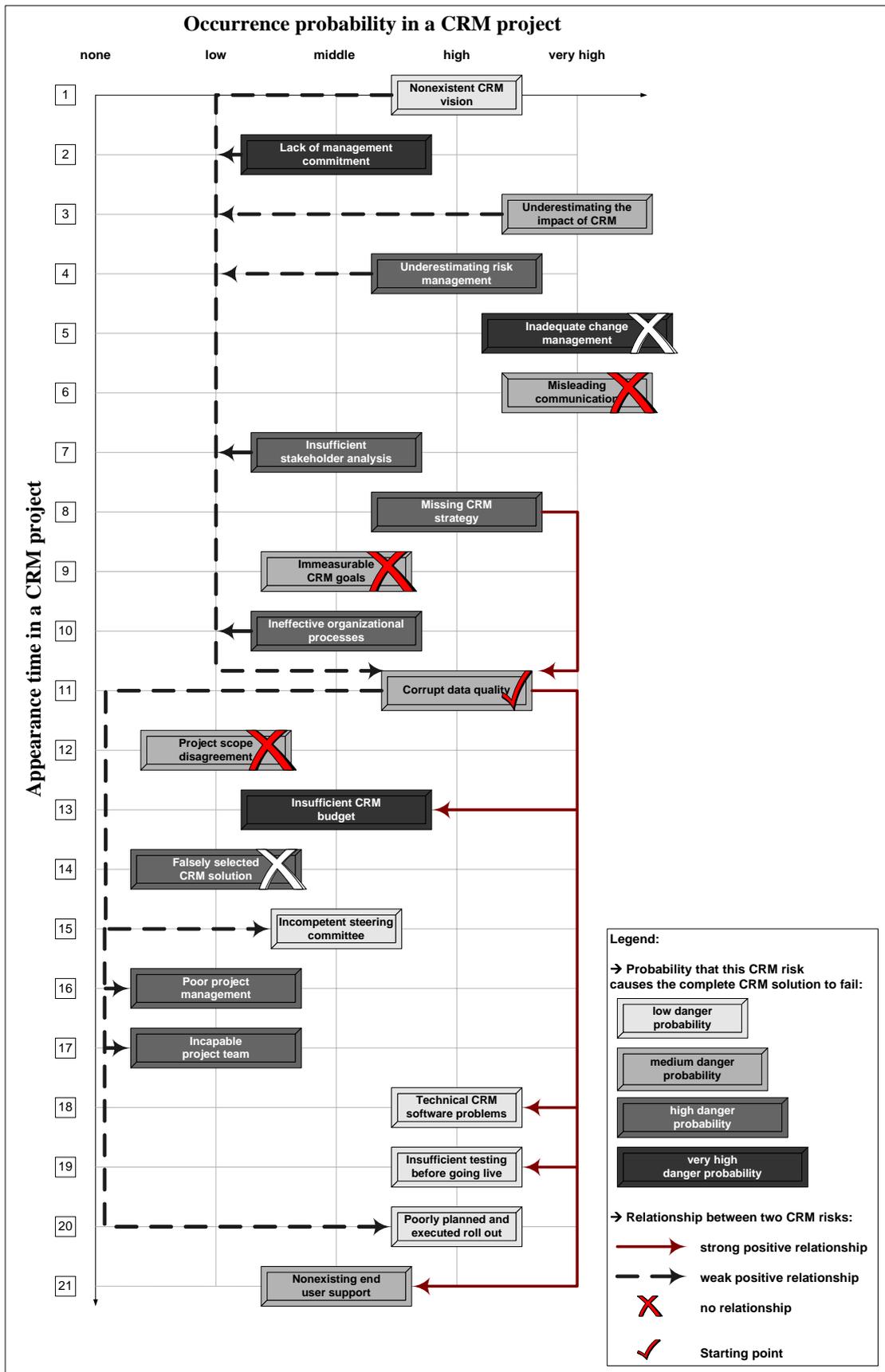


Figure 5.13: Systemic perspective of "corrupt data quality"

Seven prior and eight subsequent CRM risks directly relate to data quality. Five risks are not related. Data quality has five strong and ten weak relationships. Most of these strong relationships influence risk factors towards the end of the project.

The survey indicated two major factors influencing data quality. The most often named one is that "the data is not evaluated and cleaned before it is transferred into the CRM system". The most common reason for this is a lack of time, since a lot of manual work is required to correct and update a database. The second indicator is when "no data quality check-tool is planned and implemented", because this helps to prevent duplications and inconsistent data.

For "corrupt data quality" it can be concluded that it is the eleventh risk in order of appearance in a CRM project with five strong and ten weak relationships to other CRM risks. It has a high probability to occur in a CRM project and a medium probability to cause the complete CRM project to fail. There are different perceptions concerning the danger potential of data quality depending on the role of involvement.

5.3.11.2 Prerequisites of a successful approach

Customer data is a vital resource for any CRM solution. It is the foundation to treat customers more individually, because any CRM solution is only as good as the data supporting it. Developing a high quality standard requires a well defined data strategy that consists of two major components that need to be performed.

- The first one is cleaning the data before it is migrated into the CRM system. Companies often neglect data quality issues at the point when the CRM solution goes live, assuming that any problems can easily be resolved. Since data is the foundation of every CRM initiative, it is essential to perform a thorough assessment of all data sources before the project begins.
- The second component is to make data quality an ongoing process. Creating a high level of data quality is a continuous process since quality degenerates over time. Customer files become obsolete in a few months if they are not maintained, since customers, for example, die, marry or move. In addition, data structures can change and have to be updated.

Therefore, it is necessary to develop a strategy to reach a high level of data quality and to maintain it (Talbert & Wang, 2004). A data quality strategy can be developed in five steps (Olson, 2002).

The first step is analysing the existing data and determining the level of quality. A data analysis identifies what information is available and where it is stored. Analysing data classifies the value of existing customer information. Through data analysing routines, companies get a complete understanding of their data value and can identify areas of improvement.

The second step is developing a data quality plan. This plan states what customer information is necessary for the end-users of the CRM system. This is usually a trade off, because the more information that is available the higher the effort to keep the data accurate. The data quality plan must consider where the data physically is stored. The physical CRM storage medium needs to be included in the overall quality strategy. Most companies collect and maintain customer data in many different parts of the business, each in a different data format. To create a single view of the customer, the data must be gathered into an integrated database of the CRM solution. These data definitions must be documented in business terms and be available to all CRM end-users (Wang, et al., 1995).

The third step is data cleaning. During this step users can correct errors, standardize data and validate information that is inconsistent and inaccurate in existing systems. This step determines the necessary types of cleansing algorithms and functions needed to raise the level of quality. It ensures that data definitions are consistent and clear.

The fourth step is data integration. The data is physically migrated from an existing system into CRM. During this data transfer the existing customer data is cleaned a second time to guarantee that every CRM record is available one time only.

The fifth step is data enrichment, which takes the available data and adds additional information. With data enrichment, companies add value to their existing customer data by strengthening customer records and gaining a more complete understanding of their CRM data base.

The final step in a data quality strategy is continuous monitoring. This means measuring, analysing and then improving a system in a continuous manner. Continuous data monitoring provides the insight to recognize immediately when quality falls below acceptable limits. Data monitoring can alert the appropriate data owner when information does not meet business requirements and corrective actions can be started. These corrective actions have to be compared with the data strategy plan and if necessary the plan has to be revised to adapt to a changing environment.

In summary it was found that customer data is the basis for every CRM solution. CRM can only be as good as the data provided. Therefore, a data quality strategy requires cleaning customer data before it is transferred into a CRM solution and monitoring it continuously. A CRM data quality strategy consists of analysing, planning, cleaning, integrating, enriching and monitoring customer data.

5.3.12 Project scope disagreement

5.3.12.1 Interpretation of research

"Project scope disagreement" is the twelfth risk in order of appearance in a CRM project. Figure 5.14 shows that it is surrounded by two risks "corrupt data quality" and "insufficient CRM budget" that are not related to it. There is no other risk that is not related to at least one of its neighbours.

The risk, project scope disagreement, has a low probability to appear in a project and a medium probability to cause the complete project to fail. This is a unique risk constellation; none of the other twenty risks has the same danger potential.

Eight prior and six subsequent CRM risks are directly related to project scope disagreement. Six risks are not related. The risk "project scope disagreement" has one strong and thirteen weak relationships to other CRM risks. Only the risk "incompetent steering committee" is strongly influenced by "project scope disagreement". Various CRM experts mentioned when seeing these results that a fixed scope at the beginning of an implementation is often changed by the steering committee during an ongoing CRM project.

This leads to the assumption that the steering committee influences the project scope and not otherwise. However, the results of the survey state that a project scope has to be defined before a CRM project starts and a steering committee is established.

The survey indicated two major factors that CRM scope is not managed effectively. The first one and most often named failure is that the "project scope is growing constantly during the project". The second indicator is that the "CRM project does not come to an end". Both indicators lead again to an incompetent steering committee and to some degree to poor project management.

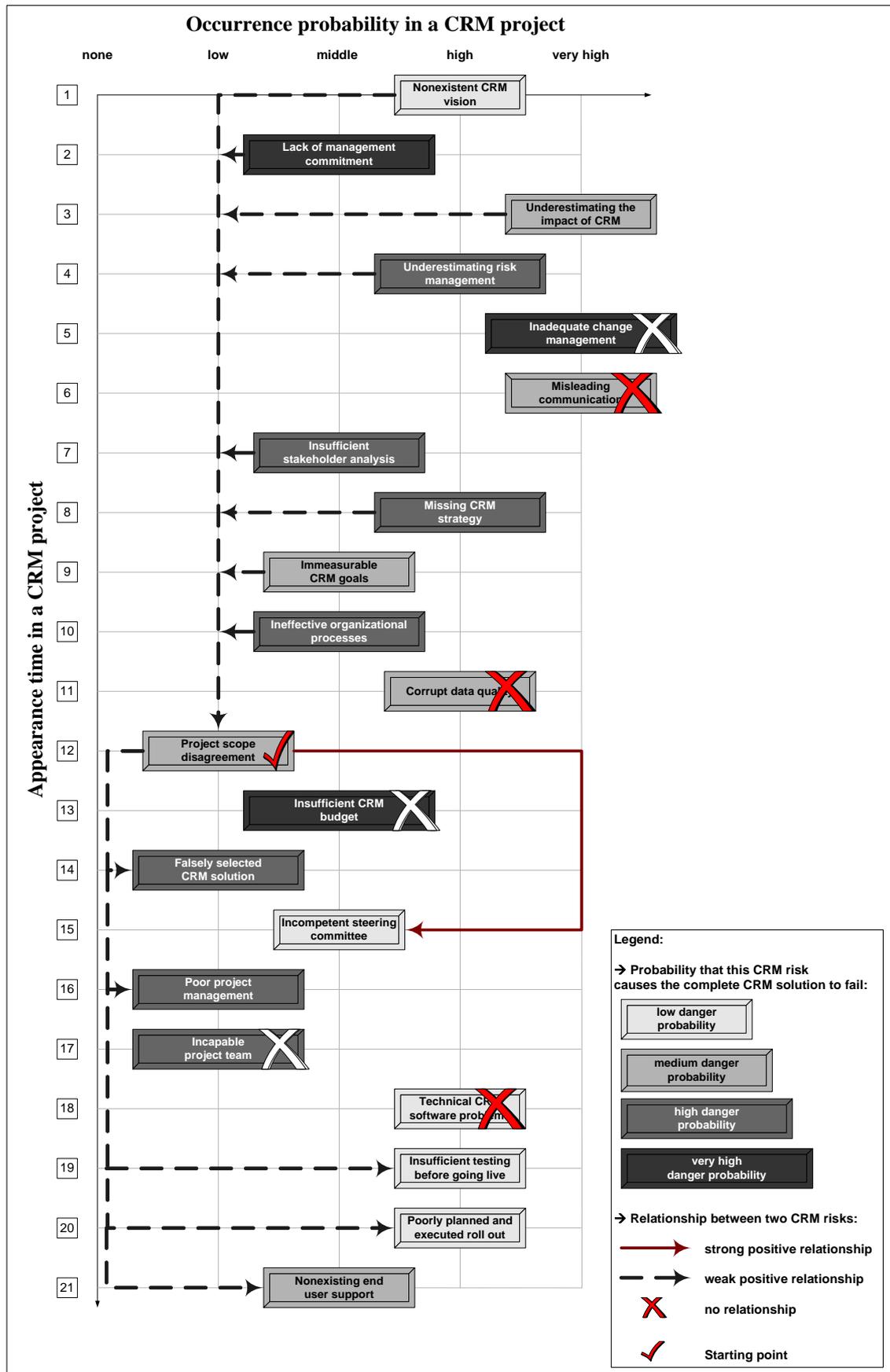


Figure 5.14: Systemic perspective of "project scope disagreement"

For "project scope disagreement" it can be concluded that it is the twelfth risk in order of appearance in a CRM project and it has one strong and thirteen weak relationships to other CRM risks. The only strong one is to an "incompetent steering committee". It has low probability to occur in a CRM project and medium probability to cause the complete CRM project to fail.

5.3.12.2 Prerequisites of a successful approach

The solution for "project scope disagreement" is project scope management. It is based on the CRM goals and strategy. Project scope includes the processes required to ensure that the project includes all work required and only the work required, to complete the project successfully. Project scope management in a CRM project focuses on defining the scope and ensuring that only this scope, not more or less, is implemented. The Project Management Institute recommends five steps to successfully manage the project scope (Project Management Institute, 2000).

The first step is project initiation. This is the process of formally authorising either a new project or that the project should continue into its next phase. This formal initiation links the project to the ongoing work of the operating organisation. This initiation phase is the starting point to collect requirements and to define deliverables.

The second step is scope planning, which is the process of progressively elaborating and documenting the project work that produces the results of the project. The planning phase should be accompanied by a requirement analysis to identify CRM focus areas. This is a prerequisite to understand what the company wants to achieve by implementing CRM. It helps to answer the question what CRM means to the business. The clear requirements are the starting point to define the scope of the CRM implementation. The outputs of scope planning are a scope statement and a scope management plan. The scope statement forms the basis for an agreement between the project and the project customer by identifying both the project objectives and the project deliverables (Shah, 2003).

The third step is scope definition which involves subdividing the major project deliverables into smaller more manageable components to improve the scope accuracy, define a scope baseline and facilitate clear responsibility assignments. In comparison to scope planning it is defining a more detailed process to eliminate different possibilities to interpret the agreed scope. All phases of a project need to be well defined and all implementation steps have to be written down in detail and communicated to all involved parties. To ensure that everybody understands the scope of a CRM project there should

be a sign-off. This will help to avoid later misunderstandings concerning promised and desired functionality. The scope can help to demonstrate to the user the value of a working CRM system. The main output is a work breakdown structure. Since CRM projects usually include many requirements from a variety of stakeholders it is useful to divide them into "must-haves" and "nice to have" and to prioritize them. This supports the decision making process to get to an agreed understanding (Gentle, 2002).

The fourth step is scope verification. This is the process of obtaining formal acceptance of the project scope by the stakeholders. The output is the documented sign-off of all deliverables and work results. In most CRM projects external consultants are involved and this formal accepted scope is often the basis for a contract, especially when it is fixed-price.

The fifth step is scope change control which is concerned with influencing the factors that create scope change in order to ensure that changes are agreed upon, determining that scope change has occurred and managing the actual changes when and if they occur. In a CRM project this last step is the most critical one, because many customers discover during the implementation what they really want. This change of scope interests is called scope creep. However, this scope creep is only a threat to the project if it is not addressed properly. All involved parties need to agree on a change request and be willing to accept the time and cost consequences. Scope creep is only a danger to the CRM project if it is not controlled (Coley, 2002).

In summary it was found that project scope management ensures that the project includes all work required, and only the work required, to complete the project successfully. To avoid different interpretations the scope needs to be clearly defined in detail.

The agreed scope has to be verified and signed-off by the customers to have a common understanding of the project deliverables. Control of scope change is necessary to keep the agreed scope in focus and to avoid undetected scope creep.

5.3.13 Insufficient CRM budget

5.3.13.1 Interpretation of research

Figure 5.15 shows that "insufficient CRM budget" is the thirteenth risk in order of the appearance time in a CRM project.

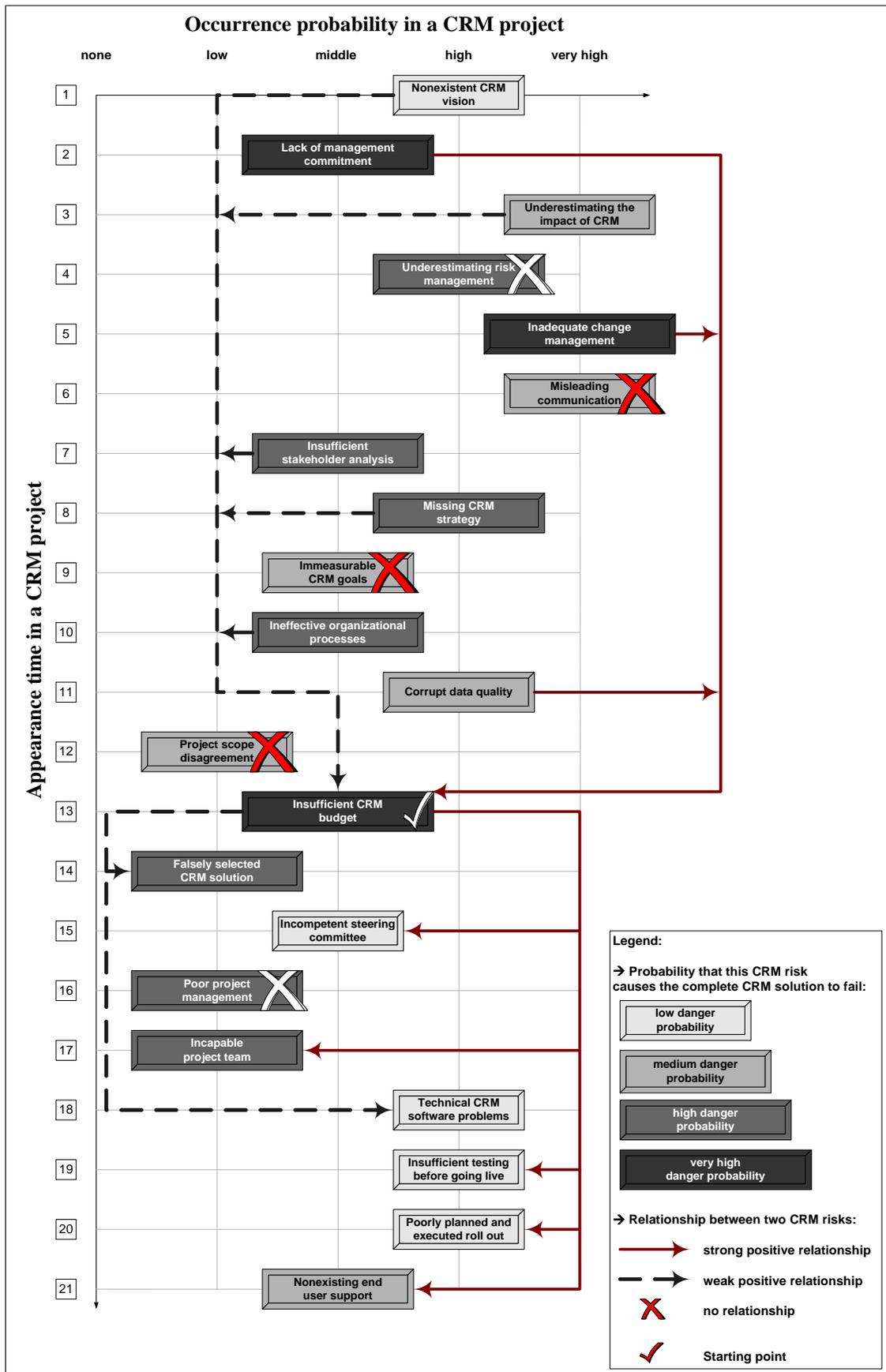


Figure 5.15: Systemic perspective of "insufficient CRM budget"

An "insufficient CRM budget" has a medium probability to occur in a CRM project. However, when it becomes a problem it has very high danger probability to cause the complete CRM project to fail. Only "lack of management commitment", "inadequate change management" and "insufficient CRM budget", have this very high danger potential to fail all CRM efforts. Various CRM project managers stated, when seeing these results, that they expected these dependencies, because when management commitment gets reduced, usually the budget gets reduced too. In most cases, when the budget is cut, change management is a service that is cut too since most managers do not see it as necessary.

Eight prior and seven following CRM risks are directly related to management commitment. Five risks are not related. Figure 5.15 shows that "insufficient CRM budget" has eight strong and seven weak relationships to other CRM risks. The budget is especially influencing the last three CRM risks. This could be an indicator that there is not enough budget towards the end of the project.

The participants in the survey named "no budget for training and change management" and "no budget for maintaining the system and supporting it", as two indicators that this risk will become a problem.

For an "insufficient CRM budget" it can be concluded that it is the thirteenth risk in order of appearance in a CRM project with eight strong and seven weak relationships to other CRM risks. It has a medium probability to occur in a CRM project, but when it becomes a problem it has a very high danger probability to cause the complete CRM project to fail.

5.3.13.2 Prerequisites of a successful approach

The CRM budget is based on the agreed scope of the project. The scope determines how large and complex the CRM project is and therefore the size of the budget. In a well prepared CRM project the budget is based on a calculated business case, which includes return on investment (ROI) and total cost of ownership (TCO). A positive ROI determines if a company should provide the budget for a CRM project and the TCO determines the budget amount (Dyche, 2001).

The ROI measures the economic return of a CRM project or investment. It determines the effectiveness of the investment by calculating how many times the net benefits - benefits from investment minus initial and ongoing costs - recover the original investment. As mentioned in the second chapter it is very difficult to calculate an exact ROI

before the CRM project has started. In addition, the ROI can vary, depending on who is calculating it, since there is no standard method.

The TCO can be defined as the systematic quantification of all costs generated over the lifetime of a CRM solution. The goal of TCO is to determine a figure that will reflect the effective cost of the investment including one time purchases and recurring costs. This is critical to a CRM solution, because the flexible costs of maintaining, updating and working with it are often neglected (Reynolds, 2002).

Based on this business case the project sponsor has to find an answer to the following three questions.

1. How much money is the company willing to spend for implementing and maintaining a CRM solution?
2. Is the CRM budget enough to cover the total costs and can the agreed scope be implemented based on the available budget?
3. Should the CRM project implementation be started or not?

The answers to these questions should be reflected carefully, because every CRM project that starts without finishing is a waste of money, even if the project begins with a reduced scope to stay within budget. The same is true for cutting budgets during the CRM project.

Every CRM budget requires a management reserve to be prepared for the unknowns which usually happen in large CRM projects.

In summary it was found that the ROI determines if a company should provide the budget for a CRM project and the TCO determines how high the budget has to be. The budget varies depending on the scope and the sponsor decides to start the project implementation and provides the budget. Every CRM project that is not completed is a waste of money.

5.3.14 Falsely selected CRM solution

5.3.14.1 Interpretation of research

"Falsely selected CRM solution" is the fourteenth risk occurring in a CRM project. Two thirds of CRM risk factors in this study have been investigated until this point.

A "falsely selected CRM solution" has a low probability to occur in a CRM project and a high probability to cause the complete project to fail. This indicates that most companies take their time to evaluate their future CRM software.

Various CRM experts mentioned, when seeing the results of this study, that the main reason for this in depth evaluation is the costs involved. The problem mostly occurs when companies that have only one or two software vendors are very likely to choose their CRM solution from them, even if functionality does not meet the requirements completely.

Nine prior and two of the following CRM risks are directly related to a "falsely selected CRM solution". Nine risks are not related. Figure 5.16 shows that a "falsely selected CRM solution" has three strong and eight weak relationships to other CRM risks. The two strong relationships from the previous risks come from "insufficient stakeholder analysis" and "missing CRM strategy".

This leads to the conclusion that the different shareholder perspectives and the future driven CRM strategy are crucial to choose the CRM solution. Because if the wrong one was selected, "technical CRM software problems" are destined, which are strongly influenced by a "falsely selected CRM solution".

The survey indicated two major factors that CRM software selection could be performed insufficiently. The first one and most often named failure is that "the CRM software is not in scope with the business processes". This is the case when the business processes have to be changed to match the CRM software. The second indicator is that "the needed functionality is not harmonized between the stakeholders". This is again a direct link to the stakeholder analysis.

For "falsely selected CRM solution" it can be concluded that it is the fourteenth risk in order of appearance in a CRM project with three strong and eight weak relationships to other CRM risks. It has a low probability to occur in a CRM project and high probability to cause the complete CRM project to fail. It is strongly influenced by "insufficient stakeholder analysis" and "missing CRM strategy" and strongly influences "technical CRM software problems".

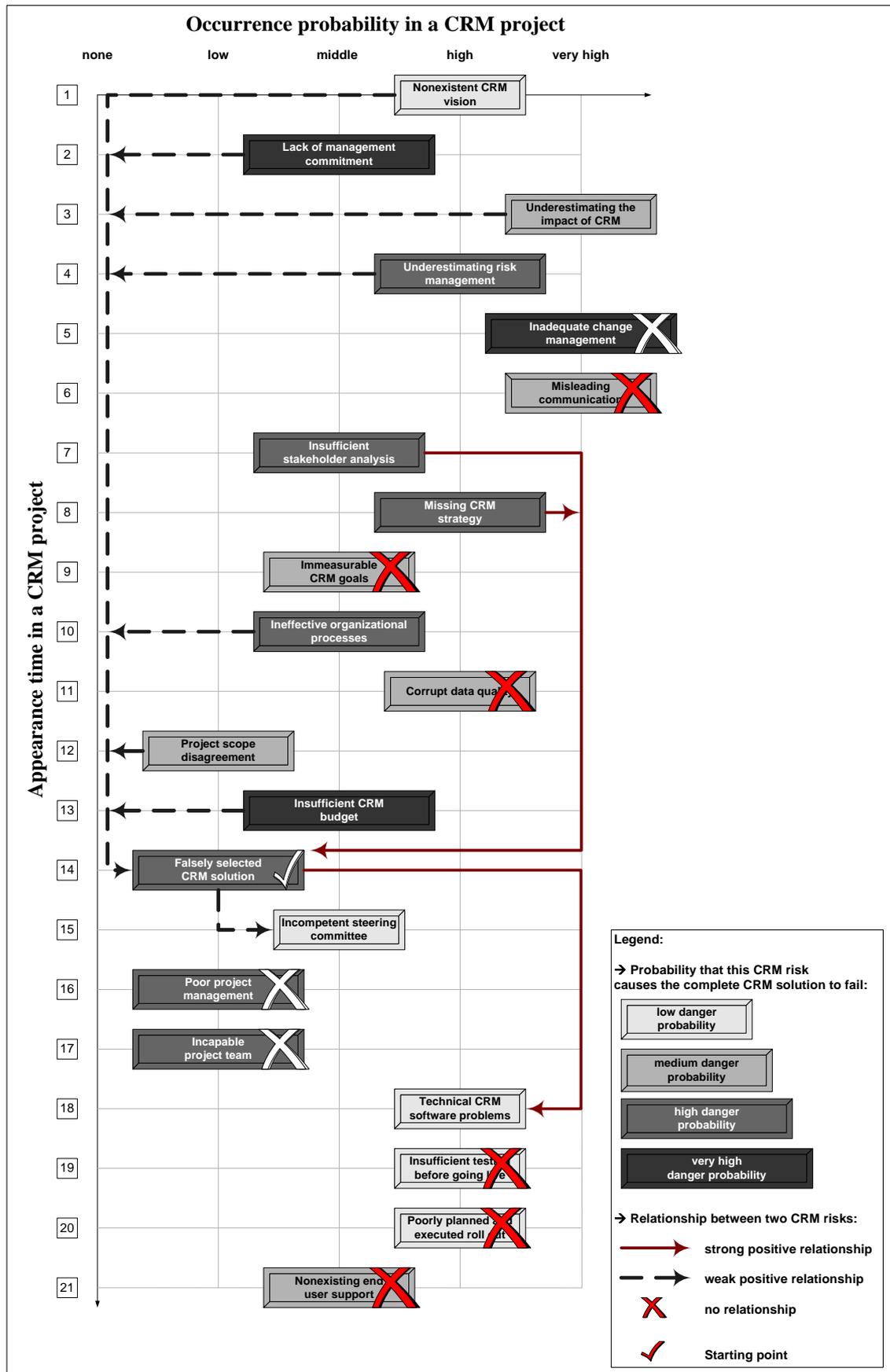


Figure 5.16: Systemic perspective of "falsely selected CRM solution"

5.3.14.2 Prerequisites of a successful approach

The selection of the right CRM solution can be quite challenging because there are many standardized and individualized CRM products on the market. It is necessary to narrow down the list of potential CRM solutions. Finding the right CRM partner involves different steps besides personal preferences⁷.

The first one is to match the scope and the price plus all concerns and problems with the provided functionality of the CRM solution. In general it can be concluded that the more complex the scope the shorter the list of CRM vendors. Companies that are not able to meet these requirements have to be excluded (Johnson, 2003).

The second step is to determine whether the CRM system can easily be adjusted to changing business requirements. CRM needs to be adaptable to all upcoming changes in the business climate, because organizations need to react quickly to the changes in their market segments.

The third step is the companies overall IT strategy. The new CRM solution has to match overall requirements. Some companies have one or two preferred software vendors and others follow a best-of-breed strategy and buy always the best products on the market, but face a high effort to integrate all these systems (Cotteleer & Frei, 2002).

The fourth step evaluates that a CRM solution is a long-term asset and the CRM vendor will become a partner to the business. Therefore, it is important to choose an established software vendor on the market. It is necessary that the CRM vendor will be available in the future should problems appear. It has to be a service organisation that takes responsibility for its software and grants support. In addition to the future perspective, the vendors should have the reputation to invest in continuous development and improvement of their CRM product. In addition, for reference there are different independent tests and analyst reports evaluating all CRM solutions on the market (Tourniaire, 2003).

The fifth step analyse whether the CRM vendor has served companies with similar CRM processes. This is more important than a CRM producer who has only industry knowledge, because the processes can still be very different. Many vendors have reference customers. They can be interviewed and questioned. There are many Internet

⁷ Appendix 6: Evaluation of business functions of the top 15 enterprise CRM software solutions in alphabetical order

communities about all large CRM producers. They discuss problems, benefits and news to provide businesses with a great deal of valuable information about CRM vendors.

After a company has selected its preferred software, it needs to decide on the matching hardware. The right hardware configuration is crucial to the software performance.

In summary it was found that a CRM solution needs to match the scope and the price of a company. It has to match the overall IT strategy of the company and needs to be adjustable to future needs.

The CRM vendor has to be a valuable partner to the company and provide support. In addition, the vendor should have customer and process experience in the selected industry.

5.3.15 Incompetent steering committee

5.3.15.1 Interpretation of research

An "incompetent steering committee" is the fifteenth risk in order of appearance in a CRM project.

Figure 5.17 shows that the risk, "incompetent steering committee", has a medium probability to appear in a project and a low probability to cause the complete project to fail. This could lead to the assumption that an "incompetent steering committee" in a CRM project is, compared to the previous risks, not dangerous. However, some CRM experts who reviewed the results of the survey mentioned that this risk becomes a very dangerous issue when the project management is incompetent too. Otherwise a strong project management is taking over the role and responsibility of a steering committee.

Another option is that no official steering committee is initiated and that the company's board acts as a steering committee. This has the advantage that strong management commitment is guaranteed and the risk that the CRM project is neglected when other company issues arise.

An "incompetent steering committee" is influenced by all previous risks except "insufficient stakeholder analysis" and influences all risks to follow except "technical CRM software problems". Altogether "incompetent steering committee" has thirteen prior and five following CRM risks that are directly related to it. Two risks are not related.

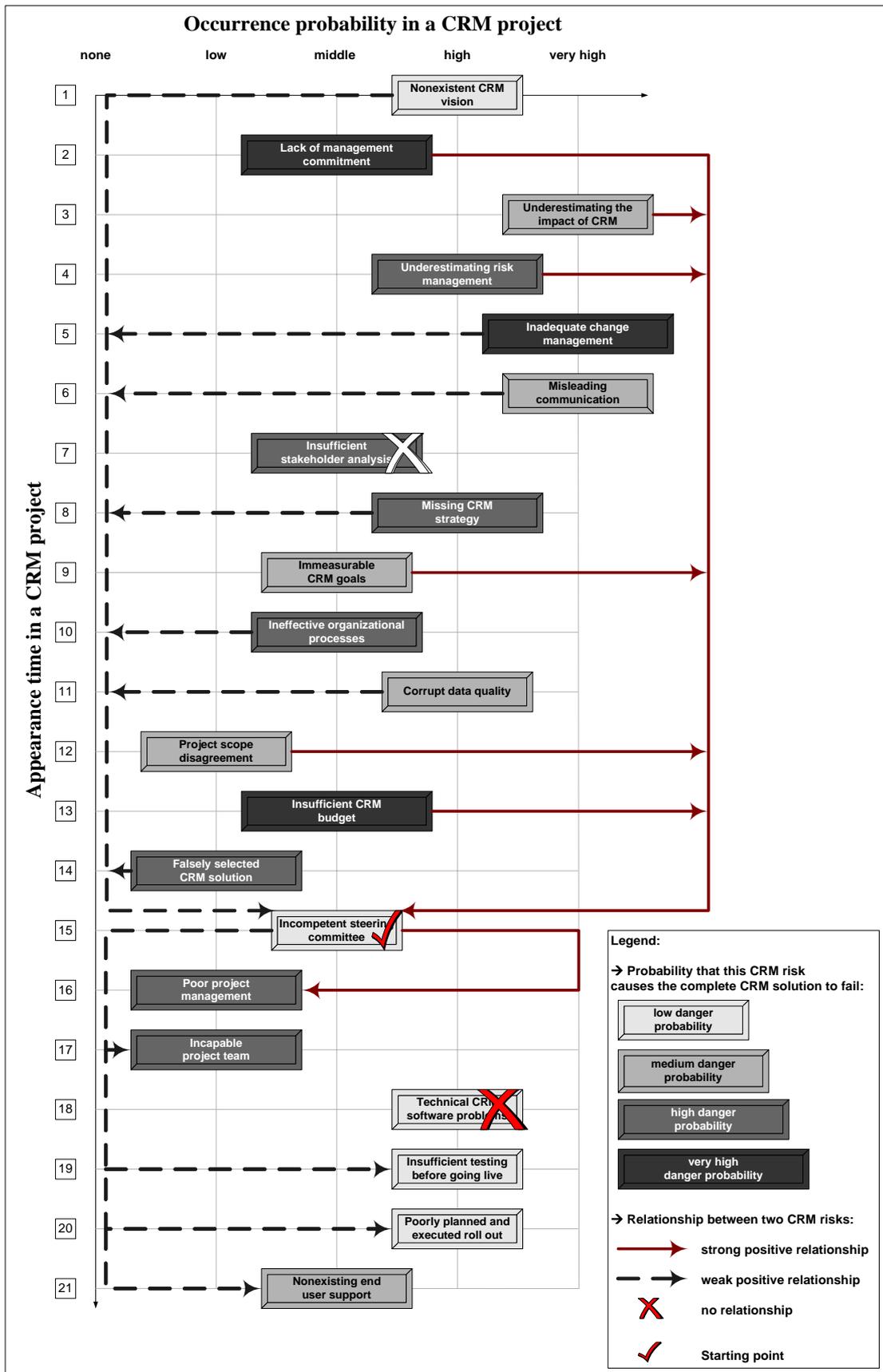


Figure 5.17: Systemic perspective of "incompetent steering committee"

Figure 5.17 shows that "incompetent steering committee" has seven strong and eleven weak relationships to other CRM risks. An "incompetent steering committee" is another risk that appears not dangerous in isolation. However, analysing the dependencies to other risks shows especially how strong the impacts from other risks can become.

The research revealed that a CRM project indicates steering committee problems if "they cannot agree on decisions" and "return often to discussions on goals".

For "incompetent steering committee" it can be concluded that it is the fifteenth risk in order of appearance in a CRM project with seven strong and eleven weak relationships to other CRM risks. It has medium probability to occur in a CRM project and low probability to cause the complete CRM project to fail. It is influenced by all risks except "insufficient stakeholder analysis" and influences all risks except "technical CRM software problems".

5.3.15.2 Prerequisites of a successful approach

The steering committee of a CRM project is the key body within the governance structure. It is responsible for all important business issues associated with the project like approving budget, deliverables, quality, timeline and others. It has to ensure and judge the project progress and outcomes (Kincaid, 2001).

The steering committee consists of different people. The number of members changes depending on the importance and the size of the CRM project. The memberships are determined by the project sponsor and normally consist of the sponsor, who usually chairs the meetings, selected stakeholders, experts and external representatives. These could be independent auditors, quality consultants and consulting managers from the implementation partner. The project manager reports to the steering committee but is not a member of it.

The role of a steering committee is to take on responsibility for the project's feasibility, business plan and achievement of outcomes. It has to ensure that the project scope aligns with the agreed requirements and provide all directly involved parties with guidance on project business issues. The steering committee has to show project commitment and has to ensure that effort and expenditure are appropriate to stakeholder expectations. It has to address any issue that has major implications on the CRM project, keep the project scope under control and ensure that strategies to address potential threats to the project's success have been identified, budgeted and approved. In addition it reconciles differences in opinion and approach and resolve disputes that cannot be handled by

project management. The steering committee reports on project progress to those responsible, usually at top-management level in CRM projects (Smith, 2003).

Some of these responsibilities are forwarded to the project manager but the final sign-off can only be done by the steering committee. However, the steering committee members should understand the strategic implications and outcomes of initiatives being pursued through project outputs and appreciate the significance of the project for some or all major stakeholders and perhaps represent their interests (Tanoury & Ireland, 2002). The members should be genuinely interested in the initiative and the outcomes being pursued in the project. In addition they should be advocates of the project's outcomes by being committed to and actively involved in pursuing the project's outcomes and have a broad understanding of project management issues and approach being adopted.

In summary it was found that the steering committee of a CRM project is the key body within the governance structure and that the role of a steering committee is to take on responsibility for the CRM project to guarantee success. The steering committee consists of different stakeholders selected by the project sponsor. The number of members depends on the importance and the size of the CRM project.

5.3.16 Poor project management

5.3.16.1 Interpretation of research

"Poor project management" is the sixteenth risk occurring in a CRM project. With the installation of a project manager the actual implementation process starts. But in the overall context only five more risk categories can take place. This leads to the conclusion that most CRM implementations fail before the implementation even starts and a potential partner is involved.

"Poor project management" has a low probability to occur in a CRM project and a high probability to cause the complete project to fail. This indicates that most companies select their project management offices very carefully. They view project management more critical than a steering committee. Various CRM experts judge project management and project team as the two most important success factors when only looking at the software implementation aspect.

Eleven prior and five of the following CRM risks are directly related to "poor project management". Four risks are not related. Figure 5.18 shows that "poor project management" has seven strong and nine weak relationships to other CRM risks.

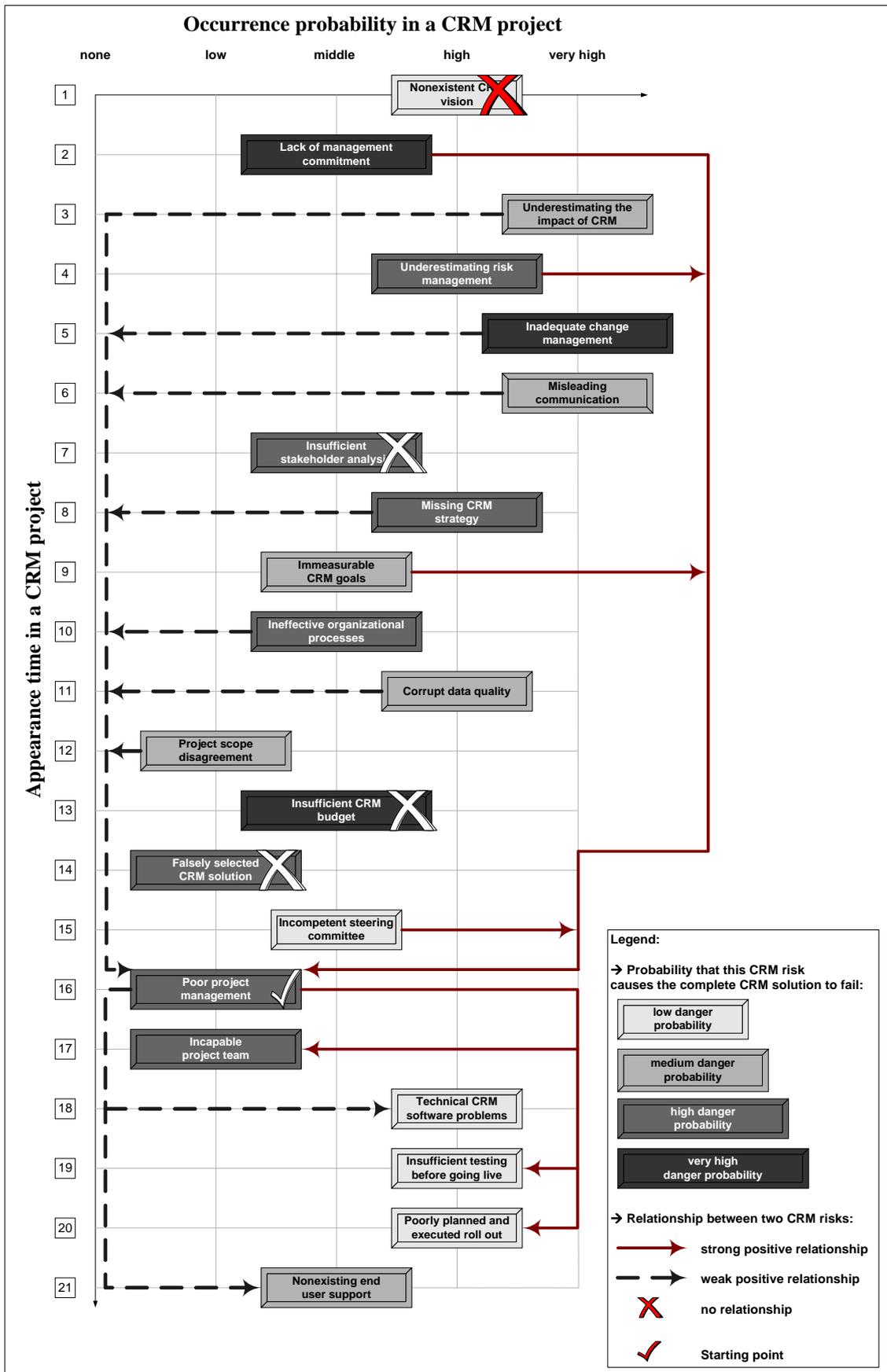


Figure 5.18: Systemic perspective of "poor project management"

"Poor project management" is strongly influenced by management commitment, risk management, CRM goals and steering committee. These four risk factors are directly related to the success of project management. All of the five risks to follow are influenced by project management, especially project team, testing and roll out strongly.

The survey indicated two major factors that cause project management to perform poorly. The first one is "a lack of experience in leading large projects". Most CRM projects are large and need a program manager and several project managers for different project areas to manage the work load. The second indicator is that "the project manager has no soft skill competencies", which are essential to manage the team.

For "poor project management" it can be concluded that it is the sixteenth risk in order of appearance in a CRM project and it has seven strong and nine weak relationships to other CRM risks. It has a low probability to occur in a CRM project and high probability to cause the complete CRM project to fail.

5.3.16.2 Prerequisites of a successful approach

Managing a CRM project is like running a business, perhaps similar to a division of a large company and should be treated this way. CRM project management is concerned with the overall planning and coordination of the CRM solution from initiation to closing aimed at meeting the companies' requirements and ensuring completion on time, within cost and to required quality standards. Project management is often summarised in a triangle. The three most important factors are time, cost and scope. These form the vertices with quality as a central theme. Should one of the three factors change, another one has to be changed as well to stay in balance. Most often in a CRM project the scope is extended without taking time and cost into calculation. As a result the triangle is not in balance anymore, but the project management is responsible to keep all the triangle dimensions equal (Futrell, et al., 2002).

The CRM project manager is assigned responsibility and accountability for the project and is given the necessary authority to undertake that responsibility. This requires a range of skills like leadership, people management, communication, negotiating, planning, contract management, problem solving, creative thinking and many others. The project manager reports to the project sponsor and is responsible for the daily management of the project. Project management knowledge and practices are best described in terms of their component processes. These processes can be placed into five process groups (Iyengar, 2003).

The first one is initiating the project. This is the starting point of a CRM project because it authorises it to begin. It is formally recognized as a new project and the organisational need is documented.

The second step is planning. This is one of the most important steps in a CRM project, since in most companies CRM has never been attempted before. Planning determines more specifically the scope, activities, resources, schedule, costs, quality and risks. This phase can take as long as the CRM implementation itself, especially for very complex CRM projects.

The third step is executing. The project plan is executed and the performed work is managed. The main task of the project management is to ensure that all members can focus on their key competence. The daily work, without any disturbing problems, is necessary to meet the timeline. During execution the project manager must effectively lead and manage the CRM team focussing on the project scope (Kessler, 2002).

The fourth step is controlling. Controlling is an ongoing process from project start until finish. It is necessary to monitor the project performance to identify variances of the plan. In case of significant variance, corrective actions have to be initiated. Effectively controlling the schedule, cost and quality involves managing the overall scope of the project.

The fifth step is closing. Closing includes contract closeout and administrative closure. All project records are closed and the lessons learned are documented.

In summary it was found that the CRM project management is like running a division of a company and needs to be handled with the same importance. A project manager should combine a set of skills that not many IT experts have. As a result selecting a highly qualified project manager is a prerequisite for CRM success. Project management can be placed into the five steps of initiating, planning, executing, controlling and closing.

5.3.17 Incapable project team

5.3.17.1 Interpretation of research

Figure 5.19 shows that "incapable project team" is the seventeenth risk occurring in a CRM project.

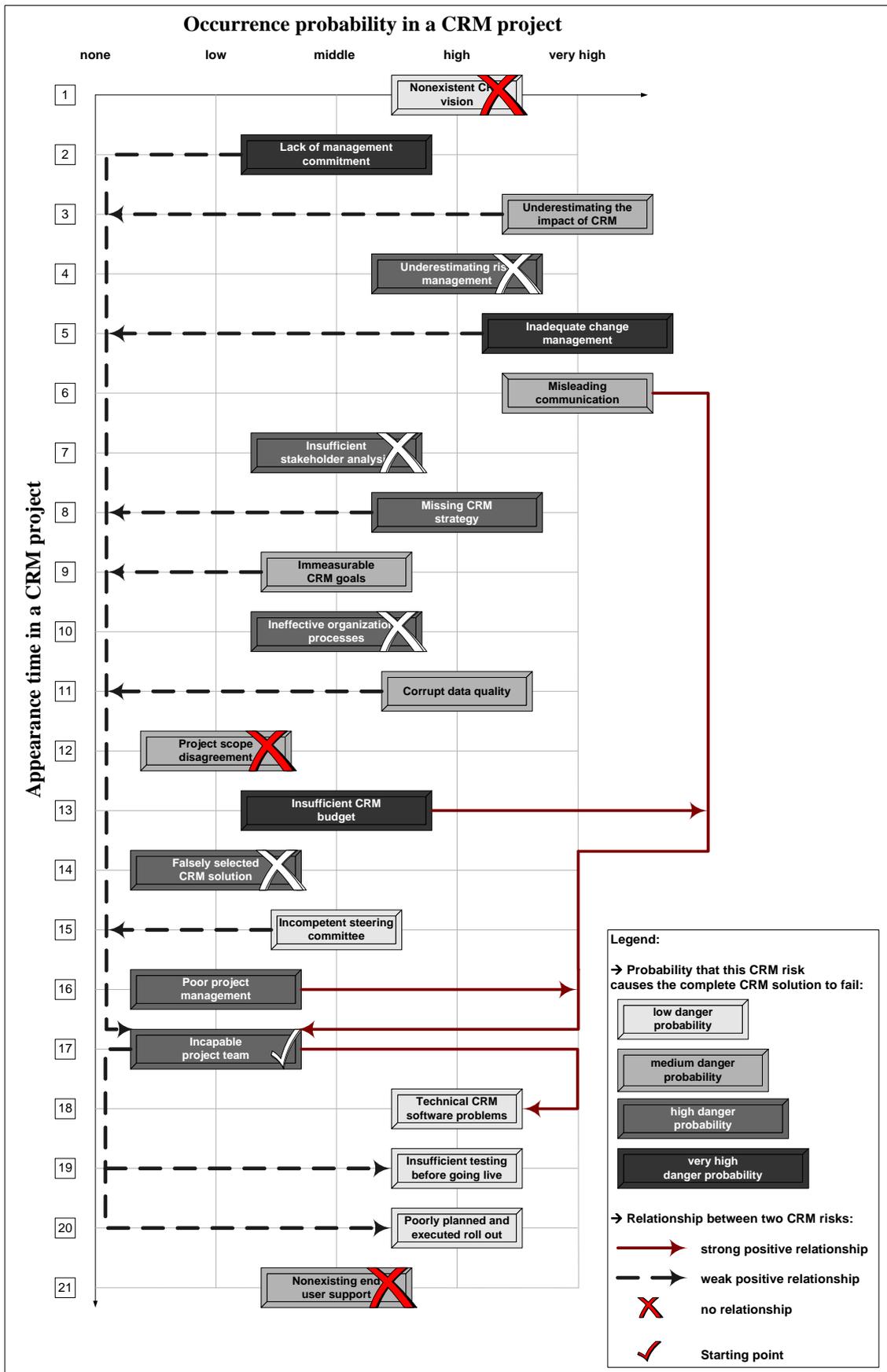


Figure 5.19: Systemic perspective of "incapable project team"

It has a low probability to occur in a CRM project and a high probability to cause the complete project to fail. Selecting a project team is usually done very carefully. However, various CRM experts stated that the selection of external team members happens usually with more accuracy than the selection of internal team members. They observed that internally often not the best fitted team members are selected, but instead the replaceable ones. This is an indicator that the functional managers do not judge the CRM project with the necessary priority.

Ten prior and three of the following CRM risks are directly related to "incapable project team". Seven risks are not related. An "incapable project team" has four strong and nine weak relationships to other CRM risks. It is strongly influenced by project communication, budget and project management. Of the risk factors to follow only "technical CRM software problems" is influenced strongly by the capability of the project team.

The only risk factor not related to "incapable project team" is "nonexistent end-user support". This leads to the conclusion that the project team leaves the project after completion with no concerns about handing over the CRM system to the company for daily business.

The research revealed that a CRM project indicates project team problems if "they make too many mistakes" and "do not reach the anticipated milestones".

For "incapable project team" it can be concluded that it is the seventeenth risk in order of appearance in a CRM project with four strong and nine weak relationships to other CRM risks. It has a low probability to occur in a CRM project and high probability to cause the complete CRM project to fail.

5.3.17.2 Prerequisites of a successful approach

Selecting a capable CRM project team is a process that needs some effort, because it requires planning, staffing and managing. The project team is a very expensive resource and deserves therefore a special project team strategy (Tourniaire, 2003).

The first step is to plan the CRM team. Based on the scope and the project schedule the project manager has to identify the resources that are needed to implement the CRM solution successfully. During this step only profiles and roles are classified, no specific experts are invited at this point. The desired scope of a company determines what skills are needed and the schedule identifies when these skill are needed. Both factors require detail planning.

Typical role players in a CRM project are the project manager, functional and technical team leaders, CRM subject matter expert, industry expert, CRM solution expert, change manager, technical expert, IT architect, trainer, rollout specialist, end-user, support user and many others depending of the size of the CRM solution.

After identifying all project roles it needs to be planned which of these skills are needed during which phase of the CRM project and how many are needed at any time. Usually the resource demand starts very low, increases during project planning, reaches the maximum during CRM implementation and drops dramatically at project closing (Pattison & Stanton, 2000).

The second step is to staff the CRM project. The goal of this step is to match the needed set of skills with a project team member. Companies usually have three options when selecting appropriate team members.

- Internal resources: They are essential to support the CRM solution, provide end-user requirements, including a company's insight perspective, get trained using the new CRM solution and promote CRM outside of the project to the rest of the employees. The internal resources should come from all departments that will work with the CRM solution to get the necessary buy-in. Some internal key resources have to be allocated to the entire CRM project.
- Consulting resources: These should all be experts providing a set of skills that the employees of a company do not have. Consultants should have experience from previous CRM projects and combine their knowledge with best practises. In addition, consultants have to be used on the CRM project when internal resources are not available. It is crucial that the consulting firm guarantees support after the implementation is finished, especially if the software is custom made or standard software is modified in a way that no one else understands. The partnership should not stop after the CRM solution is in place.
- Vendor resources: These are CRM professionals who have direct contact to the developers of the CRM solution. They have access to the newest product knowledge and know their CRM development strategy. They are the last instance to solve mostly technical issues nobody else is able to do.

Since most companies do not have the knowledge to implement new complex CRM solutions by themselves, they should staff their projects with a good mixture from these three resources (Bergey, et al., 1999).

Other critical factors include the price and the soft skill capabilities of the consulting and vendor resources in comparison to the internal team members. Depending on the financial situation, the consulting firms and vendors offer their support between very high daily rates or dumping prices to cover their fixed costs. Therefore, it is advisable to ask different consulting firms for offers. In addition a company needs to have a good feeling towards the relationship with the consulting firm and vendor. They have to be treated as a respected customer with a contact person on a management level in case of any problems. The personality of the consulting project manager and all other key players involved need to match the business culture of the CRM seeking company.

The third step is to manage the CRM team. This step is an ongoing process to administer, develop and control all team members. During this management process a critical success factor is to ensure a long-time engagement of the project team members. The impact of team turnover will increase as the CRM project progresses. Departing team members take valuable information with them on how the new CRM solution works and why decisions were made. Information gets lost and new team members need time to be fully integrated. Another critical issue during this process is to educate the internal resources so that they understand the CRM technology and the philosophy. Since not all end-users are involved during CRM implementation these key-users need to understand the advantages and communicate them (Reynolds, 2002).

In summary it was found that the CRM project team is an expensive cost factor and requires special attention. The CRM scope determines the need resource skills and the CRM schedule identifies when these skill are needed. Therefore, a CRM project should be staffed with internal, consulting and vendor resources to provide all relevant knowledge to the CRM solution. A well managed CRM project has a low resource turnover and provides effective key-user training.

5.3.18 Technical CRM software problems

5.3.18.1 Interpretation of research

"Technical CRM software problems" is the eighteenth risk occurring in a CRM project. Even if this risk occurs late compared to the other CRM risk factors, various CRM experts stated that it is a very long lasting risk. It is present during the complete implementation phase and can be subdivided in several technical risk categories.

Ten previous risks directly influence "technical CRM software problems". Figure 5.20 shows that three of them are strong and eight are weak relationships to other CRM risks.

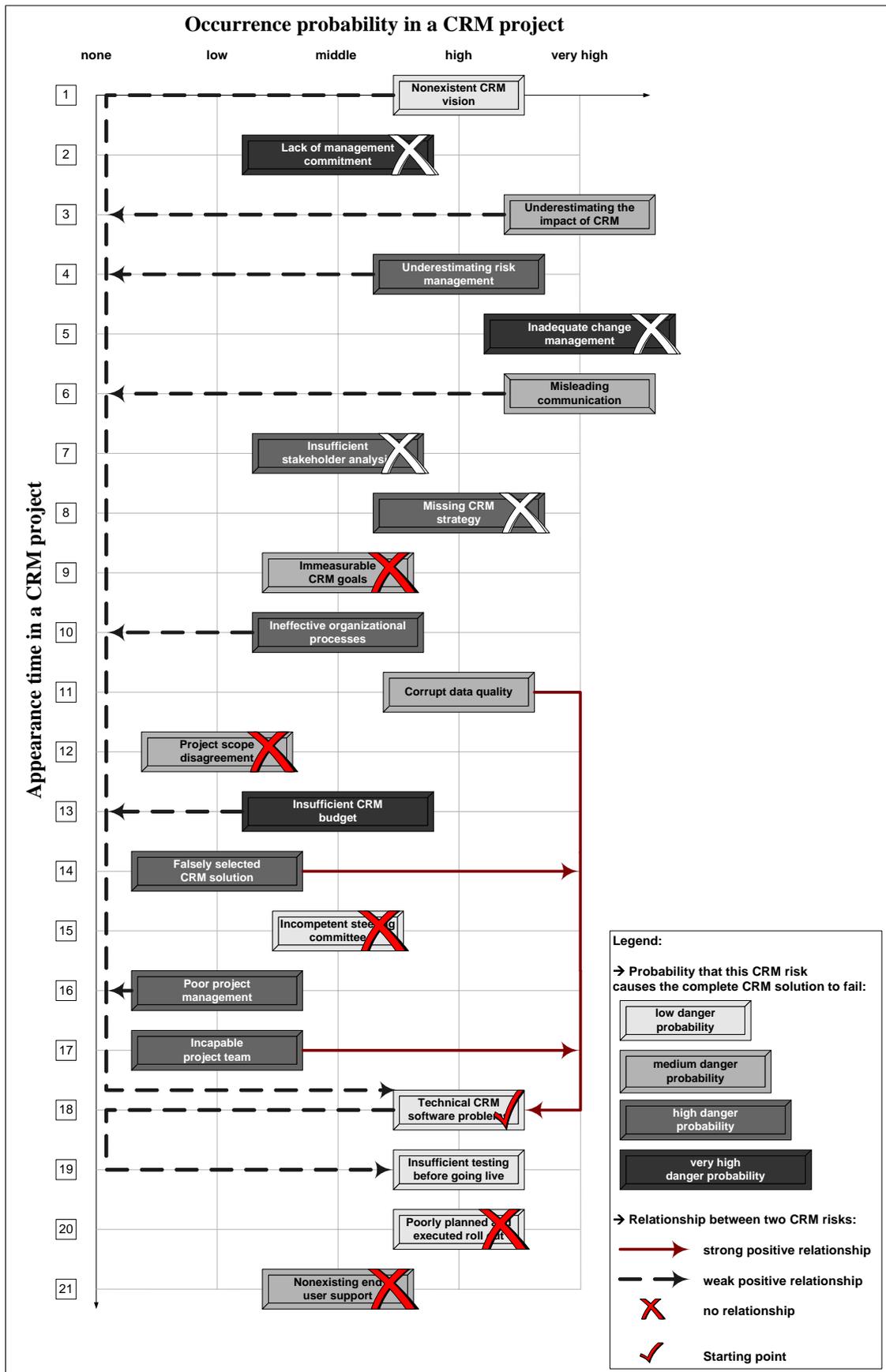


Figure 5.20: Systemic perspective of "technical CRM software problems"

The outcome of the survey shows that a "technical CRM software problems" has a high occurrence probability in a CRM project, but by itself only has a low danger probability to cause the complete CRM project to fail. This leads to the conclusion that technical issues are seldom the reasons to stop a CRM project. There are often ways to fix these problems, but usually they are time consuming and therefore increase the budget.

"Technical CRM software problems" is only related to one risk to follow, which is "insufficient testing before going live". This relationship is weak.

The participants in this research named "needed functionality is not available" and "too many problems appear simultaneously", as the most common factors to indicate that the risk "technical CRM software problems" will become a problem.

For a "technical CRM software problems" it can be concluded that it is the eighteenth risk in order of appearance in a CRM project and it is strongly related to three and weakly to eight other CRM risks. The risk has a high probability to occur in a CRM project and low probability to cause the complete CRM project to fail.

5.3.18.2 Prerequisites of a successful approach

Implementing a CRM solution is a technical challenge. CRM for large companies is not an out-of-the-box solution. To transfer the CRM strategy and the scope into a technical structure requires different process steps (Stengel, et al., 2001).

The first step is the development of a CRM blueprint. This is a specification paper, where all deliverables are documented and mapped to the business process requirements of the company. It states the company's intent to use a CRM solution. In addition, the blueprint includes the project scope and the description how the CRM technology will be implemented. During this step many workshops with business people take place to validate the scope and to discuss technical implementation strategies. Sometimes a prototype is developed to show a possible solution and to get a common understanding.

The second step is customising and developing the CRM solution based on the blueprint specifications. During this process it becomes very obvious that all CRM projects are unique. Depending on the scope and the business processes the technical CRM solution is custom tailored to the company's customer focus. Typical CRM technical challenges are the integration into the existing IT landscape, setting up the architecture, mapping software and hardware, customising and developing the customer requirements towards customer satisfaction, ensuring a high level of usability and security, solving program-

ming errors, stabilising performance and many others. In general this is the longest phase during a CRM project (Goldenberg, 2002).

The third step is monitoring the CRM implementation process under quality assurance aspects.

In summary it was found that CRM for large companies is no out-of-the-box solution and the implementation is a technical challenge to suit the company's particular requirements. The technical CRM implementation involves a large number of known and unknown issues since every CRM project is unique. This requires a CRM blueprint that includes the scope and the technical solution as to how it will be implemented. In addition, a continuous monitoring of the technical implementation process is required.

5.3.19 Insufficient testing before going live

5.3.19.1 Interpretation of research

"Insufficient testing before going live" is the nineteenth risk occurring in a CRM project. This risk usually appears for the first time when the CRM software is configured and implemented and is ready to be rolled-out to the users. Therefore, all errors that have not been detected until this point will be rolled-out to the end-users.

"Insufficient testing before going live" has a high probability to occur in a CRM project, but only a low potential to fail all CRM efforts. This is the same risk constellation like the previous risk "technical CRM software problems" and the following one "poorly planned and executed roll out".

Fifteen prior risks and one CRM risks to follow are directly related to management commitment. Four risks are not related. Figure 5.21 shows that "insufficient testing before going live" has six strong and ten weak relationships to other CRM risks. "Insufficient testing before going live" influences strongly "poorly planned and executed roll out". This leads to the conclusion that software errors restrict an efficient rollout. When seeing these survey findings some project managers stated that the new CRM solution is very hard to sell to the end-users if it is too slow or too many run-time errors appear. They all suggested never starting a rollout without stable CRM software.

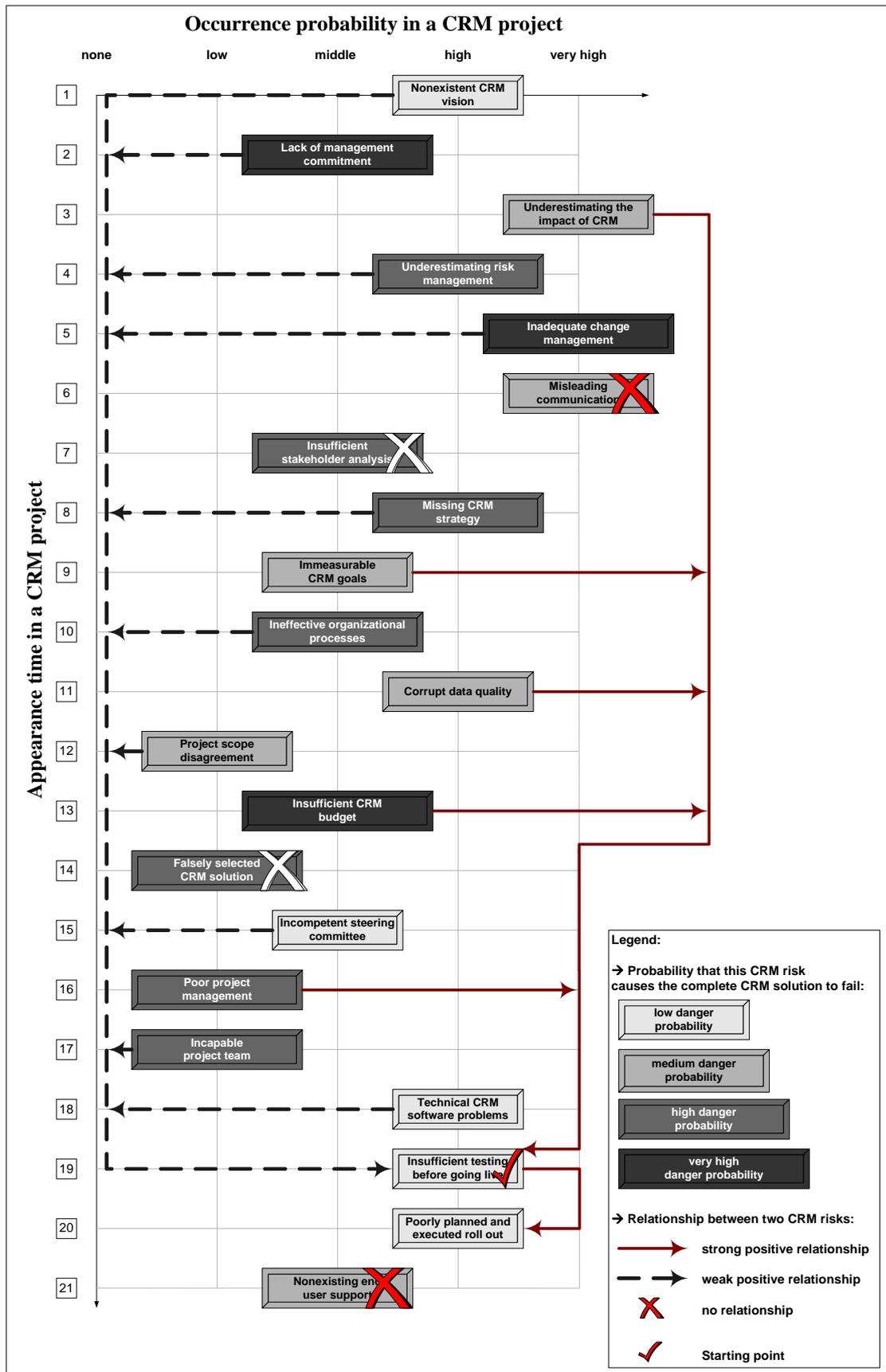


Figure 5.21: Systemic perspective of "insufficient testing before going live"

The participants in this research named "no time for testing is scheduled in the project plan" and "no independent resources are available", as the two most obvious indicators that the risk "insufficient testing before going live" will become a problem.

For "insufficient testing before going live" it can be concluded that it will be the nineteenth risk in order of appearance in a CRM project and it is strongly related to six and weakly to ten other CRM risks. It has a high probability to occur in a CRM project and low probability to cause the complete CRM project to fail.

5.3.19.2 Prerequisites of a successful approach

Software testing has to ensure that the technical CRM system meets the requirements of the company. It is necessary to provide confidence in the CRM solution and to identify areas of weakness. Testing allows identifying the gap of quality that CRM will deliver versus what the customer expects (Butscher, et al., 2002).

The prerequisite to test a CRM solution successfully is the installation of a software-testing infrastructure. This is the first of six steps to address the need to test CRM. It includes the initiation and formal acceptance of software testing during the CRM project. Based on this acceptance the testing activities have to be funded and included in the project schedule.

The second step is the planning of the continuous testing process. The goal of most companies should be to continually test during the CRM implementation to minimize the costs. This includes setting up test schedule, methods, activities and staffing of test team. The team is integrated in the CRM project. The test team leader has to decide with the technical team what functions and features need to be tested. The basis for this decision is the prioritization of the requirements. Identify the high-risk and high-importance CRM areas in order of priority. This risk and requirements-based testing enables the test team to focus on importance, risk and priority. This indicates that it is very difficult to get CRM software without any errors when going live. Therefore, test planning includes setting up measurement criteria to know when to stop testing. Software mistakes usually decrease during the test period. Based on the test results the project manager decides when to roll out the CRM solution (Chorafas, 2001).

The third step is based on the testing planning phase. Before the actual testing starts a variety of test plans have to be designed to verify if the CRM solution meets customer needs. Every test plan has to describe what needs to be tested and what steps need to be followed including pass and fail criteria. The tests should cover all areas of the CRM solution, some more in-depth than others (Cacciabue, 2004).

The fourth step is the actual testing process. This step is the peak of test resources. Testers with different level of CRM expertise follow the structured test cases. Depending on the test plan and the maturity level of the CRM software there are a variety of software tests that can be performed to ensure the requested quality standard like compatibility, conformance, functionality, load, performance, regression, stress and unit testing. Prior to delivery, the system needs to be tested in a stressed environment to prove stability. It is critical to prove that the CRM solution is both usable and operable.

The fifth step is the monitoring progress to show that the planned test activities contribute to improve the level of completion. This step loops back into the planning process if testing activities have to be adjusted.

The sixth and last step is the creation of reports to document the test findings. This step is essential to document the results of the test phase and to support the elimination of further mistakes after the CRM solution goes live.

In summary it was found that testing requires an infrastructure which is funded and included in the project schedule because too many errors cause user acceptance problems. The testing effort depends on the maturity level of the CRM software. CRM implementation is based on a continuous testing process; spot testing is not enough. The appearance of software mistakes decreases during the test period. There is always a trade-off between finding the last mistake and going live.

5.3.20 Poorly planned and executed rollout

5.3.20.1 Interpretation of research

Figure 5.22 shows that "poorly planned and executed rollout" is the twentieth risk occurring in a CRM project. This risk is usually at the end of the implementation project. After the CRM solution is rolled out CRM loses the project character and becomes an integrative component of the company.

"Poorly planned and executed rollout" has a high probability to occur in a CRM project, but only a low potential to fail all CRM efforts. This risk constellation seems common at the end of a CRM project; the two previous risks have the same danger potential.

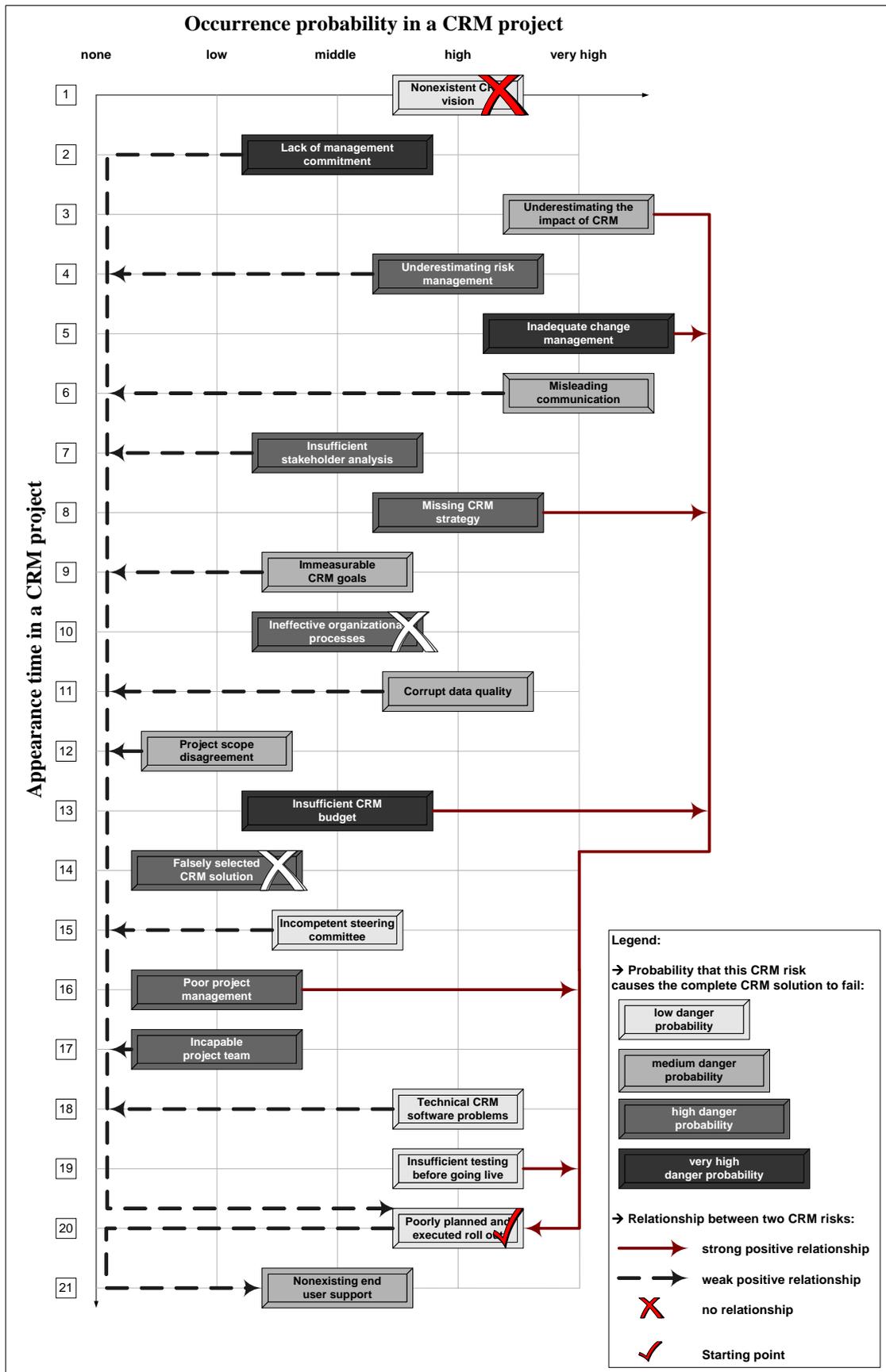


Figure 5.22: Systemic perspective of "poorly planned and executed rollout"

Sixteen prior and one following CRM risks are directly related to management commitment. Three risks are not related. "Poorly planned and executed roll out" has six strong and eleven weak relationships to other CRM risks. "Poorly planned and executed roll out" influences weakly "nonexistent end user support".

However, the rollout is influenced by sixteen other risks, which leads to the conclusion that there are many uncertainties in planning a successful roll out at the beginning of a CRM project.

The survey indicated two major factors that the rollout is performed insufficiently. The first one and most often named failure is that "the rollout is not in focus at the beginning of the project". Especially for large implementation projects rollout is often not seriously taken into account since it is sometimes years away. The second indicator is that there is "no integration of rollout activities in an early stage of the project". Some training activities can already be started during the project within the context of change management.

For "poorly planned and executed rollout" it can be concluded that it will be the twentieth risk in order of appearance in a CRM project and it is strongly related to six and weakly to eleven other CRM risks. It has a high probability to occur in a CRM project and low probability to cause the complete CRM project to fail.

5.3.20.2 Prerequisites of a successful approach

There are different opinions about the best rollout strategy for CRM projects. In the main two strategies are favoured. One is a phased approach where a CRM solution is rolled out step-by-step over a certain period of time until it is available for the selected target group of end-users. The other approach is called Big Bang where the CRM system is switched on ready to use the same day for all users. In addition, there are some mixed strategies that combine both methods.

Both strategies have their advantages and disadvantages and need to be planned carefully. The optimum rollout approach depends on the complexity of the project itself and the surrounding environment. The following approaches indicate the strategic advantages of a "Phased Rollout" and "Big Bang" (Newell & Godin, 2003; Kra, 2003).

Advantages of a "Phased Rollout" approach:

- The phased approach gives the project team a chance to identify and fix unanticipated data problems before further rollout. Most significant issues are dis-

covered during the first rollout wave. It is easier to deal with a few problems at one time than with all at once.

- Since large CRM projects are often a dramatic change to the company, it is recommended to deliver it partly as a phased approach depending on the degree of change the organisation and the end-users are willing to accept. Handling user resistance takes time and patience, but it can stop the rollout at any time.
- It is easier to steer the rollout because it is more flexible. The CRM solution can be rolled out by functionality, geographically, culturally, company departments and many others.
- Starting with business units, functions and geography that will generate the biggest profit can build confidence and motivate individuals to execute the rest of the phases outlined in the CRM roadmap.

Advantages of a "Big Bang" approach:

- Since all systems go live on the same day companies do not have to maintain old ones simultaneously for several months. Companies having multiple CRM systems that need to be replaced during the rollout do not need to consider if they want to run them in parallel, maintain customer information twice or create an interface between the old and new system until the roll out is completed.
- Usually, it is faster since it is available for everyone at the same time. This depends on how many corrective actions have to be implemented. However, the focus is on the new system and the project does not need to worry about old system issues.
- In total, a successful "Big Bang" is cheaper than a phased approach, because the implementation time is shorter and the productive CRM can generate faster revenue. The sooner a solution is rolled out to a business, the faster a company will begin to see a return on investment.

However, both rollout strategies have one thing in common; they both require the same amount of training. Training is the process by which the end users of a CRM solution learn how to efficiently operate the software application. Training is typically required and can run for days or months in duration. The type and the duration of the training depends, like the rollout strategy, on the complexity of the project itself and the surrounding environment. Since all employees make the CRM process work, they have to

learn how to use the new technology. Not every CRM user easily adapts to technology changes. Before any company can expect a CRM implementation to be successful, they have to ensure that all their employees are well trained. Qualifying the end users helps to integrate them into the new CRM philosophy and to reduce resistance (Blumberg, 2002).

Training has to be performed in two steps. The first one is the initial qualification of the CRM users. They need to learn everything that makes them comfortable to work with the CRM solution in their area of employment. The second one is ongoing training, which mostly relies on distance learning methods that enable end-users to enhance their skills with minimal disruptions to their daily work routine. Continuing CRM education is a necessity of keeping the CRM solution in the center of the business focus (Anderson, et al., 2002).

In summary it was found that the two most often used rollout strategies are a phased rollout or a Big Bang but there is no optimum rollout approach. This depends on the complexity of the project itself and the surrounding environment. Both strategies have their advantages and disadvantages and need to be planned carefully. Both CRM rollout approaches require the training of the end-users. Training is part of the rollout and is necessary to enable the end-users to work with the CRM system, reduce the resistance and to keep it in the center of business focus.

5.3.21 Nonexistent end user support

5.3.21.1 Interpretation of research

"Nonexistent end user support" is the last of twenty-one risks in order of appearance in a CRM project. This risk describes the transition from a CRM project to the daily work routine of a company. The set-up of a qualified end-user support and special trained key users is the duty of the CRM project, but the problem handling and maintaining the CRM system is the task of an established support unit within the company.

Figure 5.23 shows that the risk "nonexistent end user support" has a medium probability to appear in a project and a medium probability to cause the complete project to fail. This is the same risk constellation like "immeasurable CRM goals", which is twelve risks earlier. From a danger perspective "nonexistent end user support" can be seen as an isolated CRM risk, because it has no influence on other CRM risks since it is the last one.

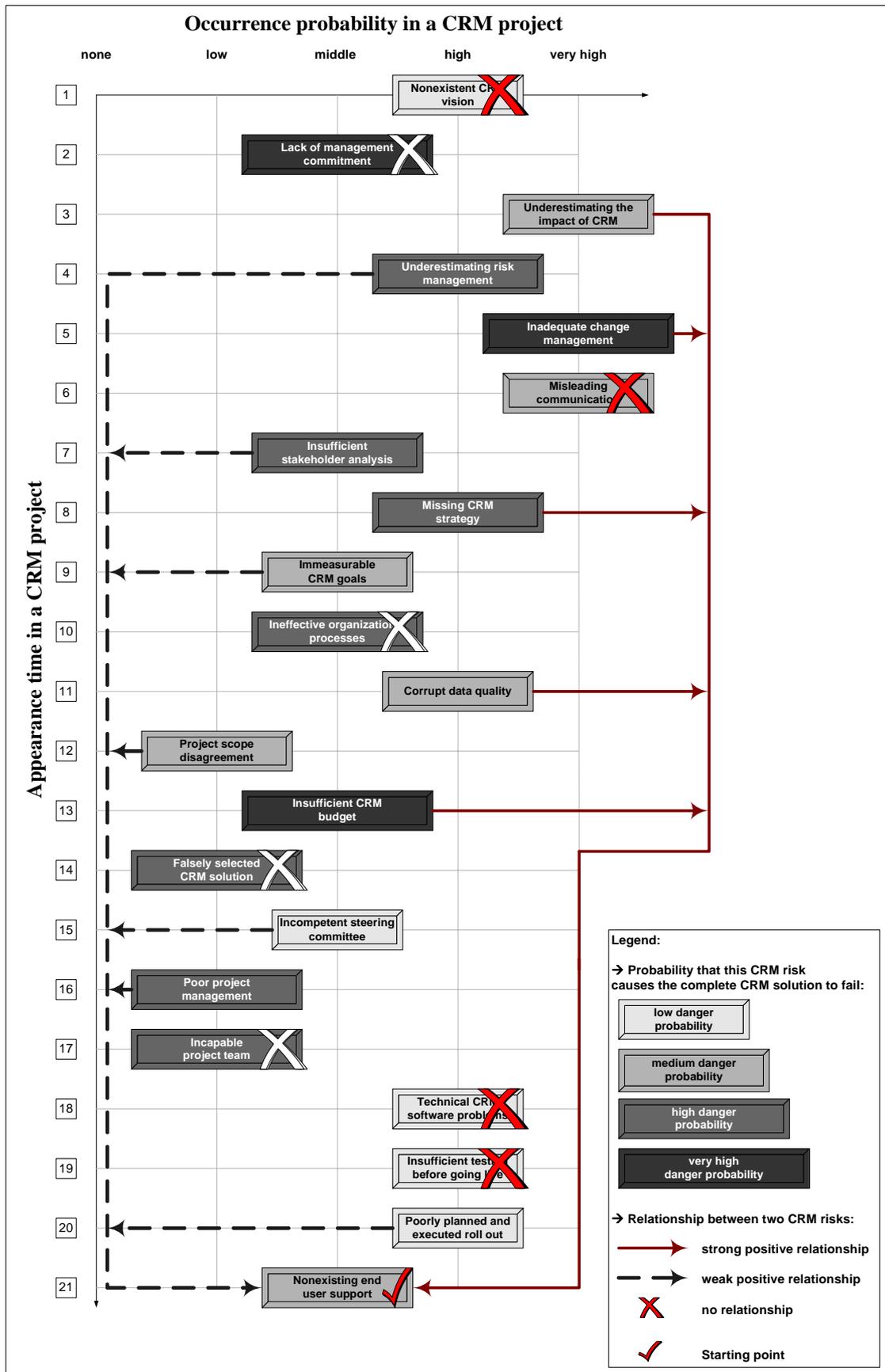


Figure 5.23: Systemic perspective of "nonexistent end user support"

However, it is the only CRM risk with no end date. As long as the company is using the CRM solution it requires a working end user support to keep the performance and the end-user acceptance up.

"Nonexistent end user support" has twelve prior CRM risks that are directly influencing it. Eight risks are not related. "Nonexistent end user support" has five strong and seven weak relationships to other CRM risks.

The research revealed that "bad data quality" and "users lose the motivation to work with the system" are two common indicators that the end user support is not handled seriously in CRM project.

For "nonexistent end user support" it can be concluded that it is the last risk in a CRM project with five strong and seven weak relationships to other CRM risks. It has medium probability to occur in a CRM project and medium probability to cause the complete CRM project to fail.

5.3.21.2 Prerequisites of a successful approach

The establishment of a CRM end-user support is necessary as long as a CRM solution is used, but especially in the first month after going live. It is an ongoing service that the company needs to provide to help end-users to get over many of the daily problems that could accompany a CRM solution (Daly, 2003).

The end-users need to know who to contact in case of CRM problems. It is important that they understand the service commitment of the help desk and do not feel left alone with the new CRM technology and philosophy. Otherwise resistance towards CRM will increase. It improves communication, establishes CRM knowledge and helps to increase user satisfaction and acceptance by providing fast and high quality solutions.

The task of a CRM end-user support is to assist all users of the new CRM solution. This includes all questions and issues related to the CRM system. The support team solves usage problems and explains CRM business processes. They handle technical issues and administer and handle security levels depending on the role of the end-users. The internal support is the interface to external specialists. This could be the implementation partner or the CRM software vendor. Additional support tasks may include training for new end users, training for new processes or functionality, internal information workshops, coordination of development requests, updates and posting of FAQ's for support self-service, participation in follow-on projects, implementation of workarounds and

installation of patches, fixes, upgrades, etc (Dyche, 2001). The end-user support team involves the following parties and roles:

- 1st level support: This is the first point of contact for the CRM end-users and addresses all general questions.
- 2nd level support: Specialists that handle critical CRM issues, when the 1st level support cannot provide help.
- IT support: Experts handling technical issues like hardware or network problems.
- Vendor support: They assist in vendor specific questions when the company's help desk is unable to deliver solutions.

The support team includes a combination of team leaders, key users and technical team members who have been helpful during the project and final handover. They have the authority as CRM support-user. This authority level allows them to perform many more actions than the normal end-users. This is necessary to help efficiently, but requires additional training. This training effort needs to be included in the project schedule. Highly qualified support-users can better prioritize incoming requests so that the most critical issues are addressed first.

It is crucial that the CRM vendor and if necessary the implementation partner guarantee support after the CRM solution is implemented. Especially if the software is custom made or standard software is modified extensively and this knowledge is not transferred to the customer completely. This expert support is necessary for all functional and technical CRM issues. The CRM support team addresses all questions, problems and concerns. Most companies are aware of this external support but often neglect the internal help of their CRM users (Ganeshram, 2003).

The support effort will reduce over time when the end-users get more familiar with CRM, but technical changes and upgrades increase the need for support. Depending on the volume and difficulty of help requests the number of CRM help desk employees has to be adjusted. The best end-user support is useless if it is not available. To avoid peaks other help functions should be available, like email services, web pages with frequently asked questions (FAQ's) and a growing knowledge base of solutions searchable by users to help them to better help themselves.

In addition to the general end-user support a CRM user group adds value to the solution. The user group consist of selected CRM end-users that exchange their experience.

The focus of a CRM user group is to evaluate the running solution and suggest continuously options to improve CRM. They judge the CRM solution during the daily use and contribute to the development and acceptance of processes and functionality (Tourniaire, 2003).

Monitoring the help requests is an indicator where CRM problems occur. Identifying recurring patterns of problems and issues more effectively addresses the root causes of the problems. Evaluating these causes allows the end-user support to offer concrete support and maybe additional training, equipment or consulting.

It summary it was found that a CRM end-user support is necessary as long as a CRM solution is used but especially in the first month after going live. A CRM support helps the end-users to work efficiently and reduces resistance towards the new business philosophy. The end-user support is responsible for technical changes and upgrades and includes different levels of end-user support need to be available to solve all issues and to answer all questions not only selected ones.

5.3.22 Conclusion: One CRM strategy framework

The second postulation of this research states that it is possible to develop a winning strategy to a successful CRM implementation knowing the following information:

- How threatening to a CRM project is each single problem by itself?
- When does each problem appear during a CRM implementation?
- What is the probability that a certain problem appears at all?
- How strong are CRM problems related to each other?

This postulation can only be accepted partly. It is possible to develop a CRM strategy framework based on this information, but it is not possible to develop one winning strategy for a successful CRM solution. There are mainly two reasons for this.

- The first one is that every company is unique. There are maybe some similar structures between competitors, but many factors like customers, branding or corporate culture create a manifold diversity.
- The second reason is that every CRM project is only one of its kind and has different success criteria.

Therefore, it is impossible to create a single CRM strategy that is successful for every company and every project. This CRM strategy framework delivers the basis to a successful implementation, but needs to be specified for every CRM project. CRM is too complex and chapter 6 points out additional research that could be done in this field to analyse more detail and to create a CRM handbook. However, there will always be multiple solutions and every company has to decide which approach is the best for their needs.

5.4 Conclusion

Based on the research undertaken, this chapter develops a systemic perspective of a CRM solution for businesses. In coherence with this CRM perspective two postulations were investigated and it was concluded that a CRM solution is very complex and requires careful strategic planning.

Every CRM implementation approach will fail to be successful if problems are only addressed when they become visible. The danger potential of CRM risks sometimes varies depending on the role of involvement, but there was no variation in answers depending on the industry or geography.

Every CRM implementation has many different risk factors and all of them could cause a CRM solution to fail. They all can appear at different and multiple times in a CRM project, but there is a sequence when they usually appear for the first time.

Most CRM risks depend on each other and increase their individual danger potential because of their relationships. These relationships are very difficult to predict because they involve direct, indirect and recurring dependencies.

This research proved that it is possible to develop a CRM strategy framework, based on the information of when a risk can appear, how dangerous it is to the overall project success and how it is related to other risks. However, it was not possible to develop one single strategy for a successful CRM solution, because every CRM project is unique and requires additional company and industry specific information.

This chapter delivers a real systemic perspective of a CRM solution for businesses, because the framework allows every company to plan their CRM activities more carefully. This strategy framework is based on twenty-one reasons which are described in the

third chapter why CRM may not work, and delivers a comprehensive approach in this chapter to avoid all of them.

CHAPTER 6

Summary and conclusion

6.1 Introduction

This chapter concludes this study by briefly outlining some of the important research considerations and approaches followed. It presents a summary of the major findings and conclusions and it provides recommendations towards a successful CRM solution to companies as well as suggestions for further academic research.

6.2 Research problem and its setting

CRM is not a new topic, but new technologies enable large companies to become more customer oriented, because they have faster access to the data of their clients. CRM is becoming more important since globalisation leads to higher market competition.

Many companies have failed when implementing a CRM solution and other companies are not sure how to successfully do it. The reason for this problem is that most CRM implementations are very risky because of a lack of information. The responsible CRM managers do not always have enough CRM knowledge to be prepared for all failure possibilities.

It is important to get an objective perspective to understand the reasons why so many customers are not pleased with their CRM solutions. It is less important how many CRM projects fail; it is more essential to know how to avoid a failure. Many reasons for failure appear, but the main breakdown explanation is often unknown. CRM is such a complex topic that the interaction process of many reasons for failure is not predictable.

Therefore, the research problem states that many CRM implementations fail to be successful and the involved parties do not know why and how to do it better. The goal of this research was to analyse this problem and to offer a solution.

6.3 Different views on CRM success

"When is a CRM solution successful?" This is a philosophical question and the answers differ depending on who is asked. Many companies have no clear success definition of a CRM solution.

There is no standard answer with a predefined list of CRM goals that have to be accomplished to call a CRM solution successful. Every company has its own goals they would like to reach, which makes it very difficult to compare CRM projects. This means that the same performance of a CRM solution is in some cases a success and sometimes it is not. In the case that a business has only one or two success criteria, which are easier to accomplish than ten or more, how can the business be sure that they did not miss something? If a business has more than ten success criteria, how can they be sure that they have chosen the right ones and if one is not accomplished, will the complete CRM be a failure? In addition, even if all targets are reached and CRM is considered successful, there is still a big chance that the CRM solution could have been even more successful.

However, all CRM success measurement methods like customer, financial or any other success method have one thing in common. They all need a working CRM solution, because the success cannot be calculated without this fundamental element. A company cannot go live with a non-working CRM solution and if they do, failure is destined. Only when the foundation of a working CRM solution is in place can other success methods be used to determine overall success.

Therefore, this paper defines CRM as a success when a company has implemented a working CRM solution that is internally accepted. This is the case when all failure risks that could stop the CRM approach can be avoided to become a problem.

6.4 Postulations

As a result of the research problem and success definition two postulations were investigated in this study to get a better understanding of this problem. These postulations are:

1. Every CRM implementation approach will fail to be successful when problems are only addressed when they become visible. This indicates that it is not possible to solve every problem in isolation when it appears. Many issues during the implementation of CRM have to be met before they become a problem, because they include follow up barriers that could lead to a complete CRM failure.

2. Based on the first postulation it is possible to develop a winning strategy for a working and internally acceptable CRM solution knowing the following information:

- What is the probability that a certain problem will appear during a CRM project?
- How threatening to a CRM project is every single problem by itself?
- When does a problem usually appear during a CRM implementation?
- How strong are CRM problems related with each other?

6.5 Research methodology

To analyse these two postulations the following three phased research methodology was used.

The first phase included three ways to collect information to get an understanding of different problems that could cause a CRM solution to fail. This was the basis for a questionnaire in the next phase. The first included the following:

1. Personal interviews with CRM managers, project team members and end users.
2. Case studies of different companies that implemented CRM.
3. Literature review via books, magazines, newspapers, Internet and research reports.

The second phase was the key focus for data collection of this study. It was an online survey to collect data that was based on the findings of the previous phase. The goal was to get information on how dangerous a certain problem can be to a CRM solution, in what timely order it appears and how it was influenced by others.

As a target group it was decided to take the "Global Fortune 500" companies of the year 2003 ranked on their world-wide revenues. Amongst the reasons for this selection were no industry and software dependency, many customers, high revenues coming from customers and probably CRM experience. These companies were asked via e-mail to let a CRM expert fill out an online questionnaire on the Webpage "www.crm-success.net". Since a world-wide target group was selected it was decided to use an electronic survey.

The survey was designed to get quantitative and qualitative results to build a strategy for successful CRM solutions and to point out CRM risks to support management decisions. Therefore a variety of questions were developed, on the foundation of twenty-one CRM risks, to deliver input. To collect this knowledge, open- and closed-ended questions were used.

The third phase was to validate the outcomes of the questionnaire. It double-checked the outcomes of the survey. This time the interviewees (CRM consultants and customers) were not asked to give input, instead they were confronted with the results of the poll to find out if they can relate to the outcomes. They were randomly selected depending on their CRM expertise and availability. In addition, inspections were performed at companies that implemented CRM to round off the new findings.

6.6 Review on literature and opinions of experts on CRM reasons for failure

The first phase of the research examined previous research on reasons that led to CRM failure. This included studies of CRM literature and personal interviews with people who work daily with a CRM system. These were CRM consultants and CRM key users from different companies that were selected according to their CRM involvement and willingness to get interviewed.

The literature and the CRM experts indicated a variety of CRM problems and problem areas that show they had a negative effect in the past and contain a steady disadvantage to any new project. Each of these problems or problem areas could influence the success of a CRM solution.

The studies of literature and personal interviews identified twenty-one reasons for failure to be very critical during any CRM implementation. All reasons were not software or industry specific and were viewed from the company's perspective that led to purchasing a CRM solution. To get a better overview of all identified reasons for CRM failure they were divided by their origin of first time appearance into three categories.

The first category includes the business issues nonexistent CRM vision; underestimating the impact of CRM; immeasurable CRM goals; missing CRM strategy; ineffective organisational processes; insufficient CRM budget; falsely selected CRM solution; and lack of management commitment.

The second category includes the project issues incompetent steering committee; poor project management; incapable project team; technical CRM software problems; insufficient testing before going live; and poorly planned and executed roll out.

The third category includes the mixture of business and project issues corrupt data quality; nonexistent end user support; insufficient stakeholder analysis; project scope disagreement; misleading communication; inadequate change management; and underestimated risk management.

From the study of literature and the personal interviews it was concluded that implementing CRM in any company involves many risk factors and a great potential for failure. This is critical because many CRM implementations start too naively, without thoughts about possible problems. Many companies follow the strategy to solve problems instead of avoiding them. They are not aware of issues that have to be handled before a CRM implementation can begin.

- There is no research that is all inclusive. Most CRM problems are recognized and proven by separate research.
- The majority of studies focus on single reasons for failure. They do not take into consideration the relationship between these problems.
- There are many strategies of how to avoid CRM failure. However, there are only a few based on empirical research.

6.7 Research findings

The research findings were the output of the second and third phase of the research. They represent the most valuable information that this study revealed.

The respondents of the survey could be clustered into the three groups, senior management, project management and end-users. The survey revealed many questions where the answers were different depending on the role of involvement in a CRM project. This indicates that the different interest groups directly involved with the CRM implementation not taking into account all other stakeholders, who could influence the positive outcome.

However, the companies participating in this survey did not give significantly different answers by country, industry, number of employees, CRM employees, CRM budget and number of customers.

A surprising finding was that only one company from the Asian continent participated in this research. They were contacted in the same way as all other companies, but did not respond. This behaviour leads to many possible conclusions, some of them were given in the fourth chapter, but a more concrete answer requires additional research. As a result of this outcome all 119 Asian companies were excluded from the population.

All participants had to list at the beginning of the research the three biggest CRM problems that they deal or dealt with. In 91% of the cases these were not the same three CRM risks to which they gave the highest failure ranking during the survey. This leads to the conclusion that the participants did not deal with some of the reasons or that they did not think of them.

The CRM risk factor assessment concluded that all investigated twenty-one CRM risks have an overall danger potential from medium to very high. They all have a great impact on the success of a CRM solution. No participant stated that one risk has no or an even low overall danger potential to fail the complete CRM solution. This is an indicator for every company implementing CRM that none of these CRM risks can be neglected and that the preparatory literature review was successful in identifying the critical problems with CRM success.

The number one failure reason for CRM is change management. Compared to change management the technical CRM implementation is fairly easy. The interesting part of the investigation was the review of the results with different CRM experts, who stated that change management is one of the first issues that gets reduced when the budget gets reduced.

The timeline sorted all twenty-one reasons in order of their first time experience in a CRM project. The order exposed the fact that a CRM implementation is spread over a long period of time and that over 70% of the analysed CRM failure risks recur before the technical implementation starts. This leads to the conclusion that most CRM projects fail because of internal reasons in a company. Companies having no CRM experience need professional help very early in the project.

The research investigated 210 relationships between twenty-one CRM risks. 62 of them were strong and 96 were soft positively related, indicating that when a risk gets stronger the other one gets stronger too. This creates a very difficult and complex CRM structure. The interaction of these CRM risks with direct and indirect dependencies makes every CRM project a challenge that is easily underestimated. Taking account of all these risks and relationships are nearly impossible for an inexperienced company.

All these research findings deliver valuable input to avoid CRM failure in the future and make companies more aware of what CRM really represents. It is fairly easy to calculate the benefits to the company, but getting a working CRM solution implemented involves many hurdles. However, they can all be solved when they get the attention they need.

6.8 Guideline to reduce CRM risks

The research and the findings presented a systemic perspective of a CRM solution for businesses. Based on these findings a guideline to create a working CRM solution was developed and is shown in figure 6.1. All investigated CRM success factors are presented in a question format.

This process flow chart is a conclusion of the investigated twenty-one CRM risks and their prerequisites for a successful implementation. It includes the order in which a company should address the CRM success factors. The flow chart does not distinguish which risk has a higher danger potential and how these risks are related, but it links to the chapter where a company can find more detailed information concerning a specific topic. Each risk on its own can fail the complete CRM solution.

In every case when one question is answered with "No" the company has to ask itself, if it really would like to have a working CRM solution. Based on their answer they can both rethink their CRM approach and analyse why they said "No" or they can stop their CRM effort. But saying "No" and simply continuing to implement a CRM solution will cause some risks to become a problem and eventually fail CRM because of the danger potential and the risk dependencies.

Every single step to implement a CRM solution successfully consists of carefully planning, executing and monitoring. Neglecting any of these CRM risk factors for whatever reason, wastes money and leads to dissatisfaction.

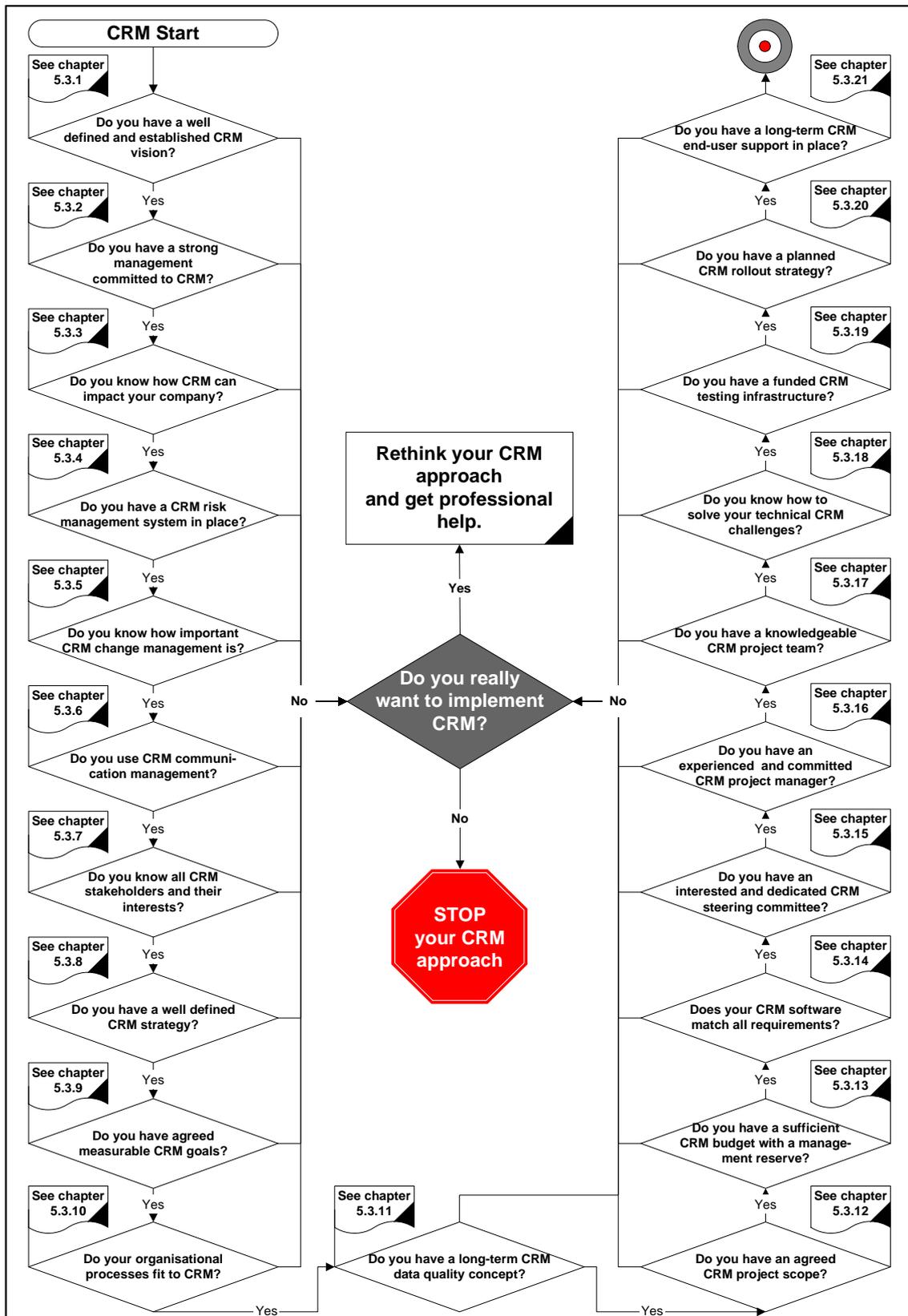


Figure 6.1: Guideline to a successful CRM solution

6.9 Recommendations

The following recommendations are made to senior management, project management and end-users to better judge the impact of a CRM implementation and to be well prepared for potential reasons for CRM failure. These were the three target groups answering the questionnaire and it became obvious that they have different perceptions toward CRM success.

6.9.1 Recommendations to senior management

Most top managers have a vision and goals, which they would like to reach, when they think about CRM. This is a good starting point, but it is not enough to become a customer focused company. To contribute to a successful CRM solution, the following recommendations are made to the company's decision makers.

At the moment when the decision is made to implement a CRM solution, all top managers of the company have to commit themselves to it and support it at all times. This is especially important when the daily business takes up a lot of their time or other difficult situations appear. Everybody in the company has to be aware that CRM is not just another project, but that it is a very central one to the company requiring a strong management attention. This commitment has to penetrate the complete company, especially to align lower management. There should be no doubt that CRM is important and that it has first priority for everybody who gets involved. In addition, they have to show this commitment by being a member of the steering committee to supervise the CRM progress and intervene whenever necessary. This way they stay informed and do not lose control.

There is a difference between setting-up a CRM system, having a CRM business philosophy and being a customer driven company. It takes a long time to become a CRM company particularly when being a product oriented company. Realising CRM is not a cheap investment and includes many decisions to guide the company in the future. Therefore, senior management needs to understand the consequences of implementing and having a CRM solution.

The CRM strategy is the enabler of the CRM vision. Therefore top management has to be strongly involved during the strategy development. They have to deliver input and sign-off the strategy. Top management is responsible that CRM and all other business strategies are aligned because they have the overview of all strategic activities in the company.

The end-users have to be involved in the CRM implementation process. The research discovered that change management is the number one failure risk for every CRM solution. Therefore top management needs to address this issue with correct priority. Involving the end-user delivers a lot of good input and avoids resistance.

6.9.2 Recommendations to project management

Project managers have the most difficult job during a CRM implementation. On one hand they are responsible for the project success and on the other they depend on many guidelines and stakeholders. To contribute to a successful CRM solution, the following recommendations are made to CRM project managers.

Being responsible for implementing a CRM solution is like running a small business or an own division of a company, it is never a part time job and usually a project management office is necessary. It is not possible to be everybody's favourite especially when dealing with a variety of interest groups. This requires expert CRM project management knowledge and even more soft skills. A goal of every project manager should be to continuously improve the skills set and adapt it to different project situations.

One of the most critical issues for project management is the scope. The scope of a CRM project can very easily shift during a project. The project manager has to ensure that the agreed scope is not changed or grown unnecessarily during the CRM project. A strict change request procedure with a change control board has to be in place.

Selecting a competent and experienced team helps a project manager to focus on management issues. A CRM project usually leaves no time to the project manager to worry about technical issues; instead a goal should be to create a good working environment.

Every CRM project requires communication processes and guidelines. The project manager has to include all stakeholders in a CRM project and determines who receives what kind of information. This is necessary to include all involved people and to avoid misunderstandings that could create acceptance barriers or in the worst case not getting the project signed off.

6.9.3 Recommendations to end-users

The end-users are a very ambiguous group within a CRM project. On one hand they are usually only partly involved in the decision making process, but have on the other hand the duty to work well with the CRM solution. To solve this ambiguity and to contribute

to a successful CRM solution, the following recommendations are made to the end-users.

As soon as the end-users become aware that management plans to implement a CRM solution, they need to address this issue and decide on key-users who will be involved in the CRM process. This should be a management or project management issue, but sometimes a direct approach from the end-users is necessary to guarantee that they can influence future decisions.

End-users need to put pressure on the company to receive a good training and an ongoing service support. They have to make clear that without understanding the CRM strategy and not being able to work with a CRM solution will harm the overall success.

6.9.4 Recommendations for further research

This study investigated twenty-one reasons that could fail a CRM solution. The research outputs show that this big picture is necessary to get a deeper understanding towards the complexity of CRM. Based on this research it was possible to develop a CRM strategy framework that helps future CRM projects to avoid typical mistakes and to prepare companies how to approach CRM.

Since this big picture is now available the next step has to be to break the following twenty-one factors in Table 6.1 into smaller pieces.

Table 6.1: Twenty-one CRM risks

1. Nonexistent CRM vision	12. Project scope disagreement
2. Lack of management commitment	13. Insufficient CRM project budget
3. Underestimating the impact of CRM	14. Falsely selected CRM solution
4. Underestimated risk management	15. Incompetent steering committee
5. Inadequate change management	16. Poor project management
6. Misleading communication	17. Incapable project team
7. Insufficient stake-holder analysis	18. Technical CRM software problems
8. Missing CRM strategy	19. Insufficient testing before going live
9. Immeasurable CRM goals	20. Poorly planned and executed roll out
10. Ineffective organi-sational processes	21. Nonexistent end user support
11. Corrupt data quality	

This is comparable with having a work-breakdown structure in a project that needs to be divided in more manageable packages. All of these CRM risk factors require additional research that needs to be performed on a more detailed level, when breaking down the success factors in sub-dimensions. A good solution would be to follow the same approach used in this study for every single CRM success factor.

After every success factor is divided into a reasonable amount of sub-dimensions, these need to be analysed according to their danger potential. They need to be evaluated on how likely they will appear and what consequences they will have when they emerge.

The next step would be to determine when they appear during a CRM project for the first time to prepare a response plan and to find out which aspects are related to each other and how strong this relationship is. Based on these three components a detailed strategy has to be developed to prevent this CRM aspect from failing. For each aspect it would be helpful to know how it changes depending on industry, CRM vendor, corporate culture, business strategy and other external factors.

CRM supported by software is a fairly new topic; therefore it would be interesting to emphasize on differences and similarities to other successful IT projects like "Enterprise Resource Planning", "Supply Chain Management", "Procurement "or "Management Information" solutions.

When this detailed research for all twenty-one CRM factors is completed, the next logical step will be to combine all of them. All risk factors and sub dimensions taken together would make a great CRM implementation handbook.

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Appendices

Appendix 1:

Perfect CRM - – A CRM story without technology.*

* Sims, D., 2000. Perfect CRM. <http://www.crmguru.com/content/features/sims10.html>. Accessed: 23.03.2003. CRM Guru. USA.

Let me show you the most perfectly practiced CRM in business today.

I walk into Ashland Coffee & Tea and whoever's working says "Hi David." They hand me the mug for the Bottomless Cup of coffee -- except when I need to upgrade to The Racehorse: five shots of espresso in a fireproof cup. When I ask for "the toasted bagel with cheese deal," whoever's working knows to use an Everything bagel if they have one, and use Poppy-Seed and Plain in that order if they don't, slice and toast the bagel and then apply thinly-sliced cheddar cheese, instead of melting the cheese onto the bagel.

There's never a charge for an improperly done bagel and cheese. New hires are told that when the guy with the laptop -- David -- comes in and asks for the toasted bagel with cheese, that this is what he gets. I avail myself of their free lending library, and contribute books from home.

Once in a while they ask me which CD from their collection I'd like to have put on the house stereo, and don't complain when I ask for Tom Waits. When there's some live music in the evenings I'm coming to hear they put a couple of the locally-brewed Legend Lagers away on ice for me, since they're usually the first to go. (I notice they've stocked extra Legends since I started ordering them.) The owners know my wife and kids' names and ask after them. They let me use the phone to call home, and if my wife calls they hand me the phone. If I'm short of cash that day I can settle up next time I'm in.

The masseuse who has her flyer posted here has sold me a couple therapeutic massages. An artist I met one snowy day when we were the only two customers got a nice commission for some work I needed done. The owner introduced me to another regular -- there are a lot of us, as you can imagine -- who will do me the favour of reading something I wrote and provide objective feedback. I'll meet him at his framing shop down the street -- and bring along a couple things it's been in the back of my mind to have framed. An employee who just came back from Egypt brought me the hieroglyphic baubles for my kids I'd asked for. The owner, a long-time Ashland resident -- we're new here -- has advised us about neighbourhoods and schools when it comes to buying a house and will recommend an agent.

They've cross-sold me T-shirts, pricey tea leaves for my wife, frequent upgrades from bagels and muffins to sandwiches and all the beer me and my friends drink at the music evenings. I contribute generously to the standing tip jar.

This, my friends, is perfect CRM. It cannot be improved upon. There is no way I'm going to cultivate another coffee shop, the exit barriers are way too high. I don't want to go through all the getting to know the preferences with someone else -- who, after all, might

not care about them as much. Ashland Coffee & Tea will get my revenue stream for as long as I'm living around here.

Why do I burn the gas and time to drive past half a dozen other coffee shops every time I come here when there's nothing as commoditized as a cup of coffee and a bagel? Simple -- they let me plug my laptop in the wall.

When we moved here I went to a coffee shop close to home, ordered coffee and a bagel, sat down, plugged in and started working. The owner brought my order and she said she'd prefer I not use the store's electricity ("So why don't you paint over the outlets?"). I unplugged, ran my battery down, paid the bill and haven't been back since. I drove farther down the road the next day, found another coffee shop, and asked if I could plug in before I ordered. They said no, I walked out and haven't been back.

Driving past those two places the next day I saw "Ashland Coffee & Tea" on a sign. I parked, walked in and asked the owner if I could plug in while I worked. She looked at me as if I'd asked permission to seat myself in one of their chairs, and took me around the shop locating all the outlets in the store for my benefit. I haven't tried another coffee shop since.

What, I ask, is the customer acquisition cost of a couple hours' worth of free electricity for a desirable prospect who has been one of the most profitable of customers? At current rates (sorry), less than a nickel.

By practicing flawless CRM Ashland Tea & Coffee has assured themselves of a revenue stream annuity amounting to hundreds and hundreds of dollars a year. My wife has taken to dropping by when she's in the neighbourhood as well, and buys juice for the kids and a cranberry scone with a cup of tea. I've told some people at church about this place. Someday I'll do the owners of those other two coffee shops a favour and tell them as well.

Appendix 2:

Customer management total revenue forecast, share and growth rate by revenue type, 2003- 2008*

* AMR-RESEARCH (2004) The Customer Management Applications Report, 2003-2008. Report: Market Sizing Series (USA).

Customer management total revenue growth rates, 2003–2008

Revenue Type	Growth Rate, 2003	Growth Rate, 2004	Growth Rate, 2005	Growth Rate, 2006	Growth Rate, 2007	Growth Rate, 2008	Five-Year CAGR
Application Software License	-2%	6%	8%	10%	12%	9%	9%
Application Hosting/ Subscription	8%	25%	15%	17%	12%	9%	15%
Software Maintenance	8%	8%	4%	6%	6%	9%	7%
Implementation, etc.	8%	2%	7%	8%	7%	9%	7%
Hardware and Other Equipment	12%	10%	6%	6%	6%	9%	7%
Total	4%	6%	7%	8%	9%	9%	8%

Appendix 3:

Customer management total revenue forecast, share and growth rate by application segment, 2003- 2008*

* AMR-RESEARCH (2004) The Customer Management Applications Report, 2003-2008. Report: Market Sizing Series (USA).

Customer management total revenue growth rates by application segment, 2003–2008

Application Type	Growth Rate, 2003	Growth Rate, 2004	Growth Rate, 2005	Growth Rate, 2006	Growth Rate, 2007	Growth Rate, 2008	Five-Year CAGR
Marketing Automation and Analytics	7%	9%	11%	12%	13%	12%	11%
Price Management	4%	6%	7%	8%	9%	9%	8%
Order Management	16%	10%	11%	12%	13%	13%	12%
Sales force Automation (SFA)	5%	4%	5%	6%	7%	7%	6%
Online Sales/E-Commerce Suites	1%	1%	3%	4%	5%	4%	3%
Customer Service	2%	6%	4%	6%	6%	7%	6%
Call Center Infrastructure	2%	6%	5%	7%	7%	8%	7%
Web Self-Service Applications	2%	6%	10%	11%	11%	12%	10%
Field Service	2%	5%	14%	15%	15%	15%	13%
Other CM Applications	-9%	-5%	0%	1%	1%	1%	0%
Total	4%	6%	7%	8%	9%	9%	8%

Appendix 4:

Customer management license revenue and share by vertical industry, 2002–2003*

* AMR-RESEARCH (2004) The Customer Management Applications Report, 2003-2008. Report: Market Sizing Series (USA).

CM license revenue and share by vertical industry, 2002–2003 (manufacturing)

Industry	Revenue, 2002 (\$M)	Revenue, 2003 (\$M)	Revenue Share, 2002	Revenue Share, 2003	Growth Rate, 2002–2003
Manufacturing	1455	1425	38%	38%	-2%
Textiles	41	36	1%	1%	-13%
Apparel	29	32	1%	1%	12%
Wood Products, Paper, Printing	40	35	1%	1%	-12%
Petro Products, Chemicals,	87	92	2%	2%	5%
Pharmaceuticals/Biotechnology	154	143	4%	4%	-7%
Primary/Fabricated Metal	39	43	1%	1%	10%
Machinery	72	75	2%	2%	5%
Computers and Electronics	411	380	11%	10%	-7%
Automotive and Auto Parts	176	181	5%	5%	3%
Aerospace and Defense	86	91	2%	2%	6%
Food, Beverages,	151	151	4%	4%	0%
Other Manufacturing	168	166	4%	4%	-2%

CM license revenue and share by vertical industry, 2002–2003 (non-manufacturing)

Industry	Revenue, 2002 (\$M)	Revenue, 2003 (\$M)	Revenue Share, 2002	Revenue Share, 2003	Growth Rate, 2002– 2003
Non - Manufacturing	2396	2330	62%	62%	-3%
Resource Extraction (Metal, Oil and Gas)	54	50	1%	1%	-6%
Utilities (Electric, Gas, Water, Sewer)	125	123	3%	3%	-2%
Telecommuni- cation Services	503	469	13%	12%	-7%
Wholesale Trade	79	83	2%	2%	5%
Retail Trade	183	197	5%	5%	8%
Transportation and Warehousing	89	87	2%	2%	-3%
Information (Publishing, Media, Services)	191	185	5%	5%	-3%
Finance and Insurance	551	513	14%	14%	-7%
Healthcare and Social Assistance	158	157	4%	4%	-1%
Education	124	120	3%	3%	-4%
Public Administration	134	136	3%	4%	1%
Other Services	205	210	5%	6%	2%

Appendix 5:

Global Fortune 500 of the year 2003*

* Fortune, 2003. FORTUNE GLOBAL 500.
<http://www.fortune.com/fortune/500archive/0,19744,00.html>. Accessed: 02.02.2003. Fortune
Magazin. USA.

Appendices

Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
1	1	Wal-Mart Stores, Inc.	246.525	8.039	94.685	39.337	1.300.000	General Merchandisers	USA	www.walmart.com
2	3	General Motors Corporation	186.763	1.736	370.782	6.814	350.000	Motor vehicles and Parts	USA	www.gm.com
3	2	ExxonMobil Corporation	182.466	11.460	152.644	74.597	92.500	Petroleum Refining	USA	www.exxonmobil.com
4	8	Royal Dutch/Shell Group	179.431	9.419	152.691	60.064	116.000	Petroleum Refining	United Kingdom	www.shell.com
5	4	BP p.l.c.	178.721	6.845	159.125	69.409	115.250	Petroleum Refining	United Kingdom	www.bp.com
6	5	Ford Motor Company	163.871	-980	289.357	5.590	350.321	Motor vehicles and Parts	USA	www.ford.com
7	7	DaimlerChrysler	141.421	4.461	196.570	36.637	365.571	Motor vehicles and Parts	Germany	www.daimlerchrysler.com
8	10	Toyota Motor Corporation	131.754	7.753	174.923	62.913	264.096	Motor vehicles and Parts	Japan	www.toyota.co.jp
9	9	General Electric Company	131.698	14.118	575.244	63.706	315.000	Diversified Financials	USA	www.ge.com
10	12	Mitsubishi Corporation	109.386	495	68.291	7.902	47.370	Trading	Japan	www.mitsubishicorp.com
11	13	Mitsui & Co., Ltd.	108.631	256	55.157	7.271	37.734	Trading	Japan	www.mitsui.co.jp
12	18	Allianz AG	101.930	-1.103	894.096	22.846	181.651	Insurance: P&C (stock)	Germany	www.allianzgroup.com
13	11	CitiGroup	100.789	15.276	1.097.190	86.718	252.500	Banks: Commercial and Savings	USA	www.citigroup.com
14	15	Total Fina Elf S.A.	96.945	5.617	89.539	33.732	121.469	Petroleum Refining	France	www.total.com
15	14	ChevronTexaco Corporation	92.043	1.132	77.359	31.604	53.014	Petroleum Refining	USA	www.chevrontexaco.com
16	16	Nippon Telegraph & Telephone Corp.	89.644	1.915	166.837	47.542	207.400	Telecommunications	Japan	www.ntt.co.jp
17	20	ING Groep N.V.	88.102	4.255	751.716	19.155	115.000	Insurance: Life, Health (stock)	The Netherlands	www.ing.com
18	17	Itochu	85.856	165	37.834	3.594	39.109	Trading	Japan	www.itochu.co.jp
19	19	IBM	83.132	3.579	96.484	22.782	315.889	Computers, Office Equipment	USA	www.ibm.com
20	21	Volkswagen AG	82.204	2.443	114.269	25.849	324.892	Motor vehicles and Parts	Germany	www.volkswagen.de
21	22	Siemens AG	77.205	2.387	77.022	23.244	426.000	Electronics, Electrical Equip.	Germany	www.siemens.com
22	23	Sumitomo Corporation	75.745	232	41.016	5.281	31.589	Trading	Japan	www.sumitomocorp.co.jp
23	25	Marubeni Corporation	72.165	249	36.444	2.193	27.000	Trading	Japan	www.marubeni.co.jp
24	26	Verizon Communications Inc.	67.625	4.079	167.468	32.616	229.497	Telecommunications	USA	www.verizon.com
25	34	American International Group, Inc.	67.482	5.519	561.229	59.103	80.000	Insurance: P&C (stock)	USA	www.aig.com
26	32	Hitachi, Ltd.	67.228	229	85.844	15.628	339.572	Electronics, Electrical Equip.	Japan	www.hitachi.co.jp
27	29	US Postal Service	66.463	-676	59.015	-3.002	854.376	Mail, Package, Freight Delivery	USA	www.usps.gov
28	41	Honda Motor Co., Ltd.	65.420	3.502	64.777	22.177	126.900	Motor vehicles and Parts	Japan	www.honda.co.jp
29	35	Carrefour SA	64.979	1.299	40.845	6.467	396.662	Food and Drug Stores	France	www.carrefour.com
30	24	Altria Group, Inc.	62.182	11.102	87.540	19.478	166.000	Tobacco	USA	www.altria.com
31	30	AXA	62.051	897	466.596	24.881	78.142	Insurance: Life, Health (stock)	France	www.axa.com
32	37	Sony Corporation	61.335	948	70.590	19.235	161.100	Electronics, Electrical Equip.	Japan	www.sony.com
33	33	Nippon Life Insurance Company	61.175	927	370.338	15.646	72.784	Insurance: Life, Health (mutual)	Japan	www.nissay.co.jp
34	45	Matsushita Electric Industrial	60.744	-160	66.071	26.804	288.324	Electronics, Electrical Equip.	Japan	www.matsushita.co.jp
35	38	Royal Ahold	59.455	367	30.445	5.759	270.739	Food and Drug Stores	The Netherlands	www.ahold.com
36	188	ConocoPhillips	58.384	-295	76.836	29.517	57.300	Petroleum Refining	USA	www.conocophillips.com
37	46	The Home Depot, Inc.	58.247	3.664	30.011	19.802	300.000	Specialty Retailers	USA	www.homedepot.com
38	55	Nestle S.A.	57.279	4.859	63.175	25.182	254.199	Food Consumer Products	Switzerland	www.nestle.com
39	57	McKesson HBOC Inc.	57.129	555	14.353	4.529	24.500	Wholesalers: Health Care	USA	www.mckesson.com
40	70	Hewlett-Packard Company	56.588	-903	70.710	36.262	141.000	Computers, Office Equipment	USA	www.hp.com

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
41	58	Nissan Motor Co.	56.041	4.064	61.976	15.250	127.625	Motor vehicles and Parts	Japan	www.nissan-global.com
42	51	Vivendi Universal S.A.	54.977	NA	72.719	14.691	284.182	Entertainment	France	www.vivendiuniversal.com
43	42	The Boeing Co.	54.069	492	52.342	7.696	165.000	Aerospace and Defense	USA	www.boeing.com
44	50	Assicurazioni Generali	53.599	-713	246.305	8.241	59.753	Insurance: Life, Health (stock)	Italy	www.generali.com
45	52	Fannie Mae	52.901	4.619	887.257	16.288	4.700	Diversified Financials	USA	www.fanniemae.com
46	49	Fiat S.P.A.	52.613	-3.733	97.086	8.018	189.969	Motor vehicles and Parts	Italy	www.fiatgroup.com
47	27	Deutsche Bank	52.133	375	795.772	31.471	77.442	Banks: Commercial and Savings	Germany	www.deutsche-bank.de
48	31	Credit Suisse	52.122	-2.126	691.150	20.623	78.457	Banks: Commercial and Savings	Switzerland	www.credit-suisse.com
49	79	Munich Re Group	51.980	1.022	206.133	14.636	41.396	Insurance: P&C (stock)	Germany	www.munichre.com
50	62	Merck & Company, Inc.	51.790	7.150	47.561	18.201	77.300	Pharmaceuticals	USA	www.merck.com
51	56	The Kroger Company	51.760	1.205	20.102	3.850	289.000	Food and Drug Stores	USA	www.kroger.com
52	65	Peugeot	51.466	1.598	58.771	11.526	198.600	Motor vehicles and Parts	France	www.psa.fr
53	61	Cardinal Health	51.136	1.056	16.438	6.393	50.000	Wholesalers: Health Care	USA	www.cardinal.com
54	44	BNP Paribas	51.127	3.115	745.366	27.750	87.685	Banks: Commercial and Savings	France	www.bnpparibas.com
55	75	Deutsche Telekom AG	50.760	NA	132.029	32.979	256.000	Telecommunications	Germany	www.telekom.de
56	63	State Farm Insurance Companies	49.654	-2.796	117.811	31.770	76.938	Insurance: P&C (mutual)	USA	www.statefarm.com
57	48	Aviva	49.533	-802	297.708	15.566	64.562	Insurance: Life, Health (stock)	United Kingdom	www.aviva.com
58	72	Metro AG	48.715	419	24.054	4.345	191.512	Food and Drug Stores	Germany	www.metro.de
59	105	Samsung Electronics Co., Ltd.	47.606	5.636	54.766	20.499	80.000	Electronics, Electrical Equip.	South Korea	www.samsungelectronics.com
60	123	Vodafone Group plc	46.987	NA	242.282	203.384	66.667	Telecommunications	United Kingdom	www.vodafone.com
61	40	AT&T	46.727	NA	55.272	12.312	71.000	Telecommunications	USA	www.att.com
62	77	Toshiba Corporation	46.416	152	44.181	4.816	166.000	Electronics, Electrical Equip.	Japan	www.toshiba.co.jp
63	71	ENI	46.328	4.342	69.055	27.553	80.655	Petroleum Refining	Italy	www.eni.it
64	47	Bank Of America Corporation	45.732	9.249	660.458	50.319	133.944	Banks: Commercial and Savings	USA	www.bankofamerica.com
65	102	Electricite de France	45.720	455	151.985	14.568	171.995	Utilities: Gas and Electric	France	www.edf.fr
66	68	Unilever	45.636	2.013	46.799	6.157	247.000	Food Consumer Products	United Kingdom	www.unilever.com
67	319	AmerisourceBergen Corp.	45.235	345	11.213	3.316	13.100	Wholesalers: Health Care	USA	www.amerisourcebergen.net
68	28	E.ON	44.941	2.626	118.644	26.919	107.856	Trading	Germany	www.eon.com
69	81	China National Petroleum	44.864	5.400	88.934	54.421	1.146.194	Petroleum Refining	China	www.cnpc.com.cn
70	86	Sinopec	44.503	446	69.696	22.879	917.100	Petroleum Refining	China	www.sinopecgroup.com.cn
71	97	France Telecom	44.086	NA	111.846	-10.442	243.573	Telecommunications	France	www.francetelecom.fr
72	89	Target Corporation	43.917	1.654	28.603	9.443	306.000	General Merchandisers	USA	www.target.com
73	85	Fortis	43.598	503	509.733	11.407	65.989	Banks: Commercial and Savings	Belgium	www.fortis.com
74	99	Suez	43.575	-815	88.303	11.099	198.750	Energy	France	www.suez.com
75	54	JP Morgan Chase & Co.	43.372	1.663	758.800	42.306	94.335	Banks: Commercial and Savings	USA	www.jpmorganchase.com
76	69	SBC Communications	43.138	5.653	95.057	33.199	175.980	Telecommunications	USA	www.sbc.com
77	76	Dai-ichi Mutual Life Insurance	43.134	464	244.371	6.661	58.398	Insurance: Life, Health (mutual)	Japan	www.dai-ichi-life.co.jp
78	101	Berkshire Hathaway, Inc.	42.353	4.286	169.544	64.037	146.500	Insurance: P&C (stock)	USA	www.berkshirehathaway.com
79	59	UBS AG	42.330	2.271	854.208	28.199	69.061	Banks: Commercial and Savings	Switzerland	www.ubs.com
80	98	AOL Time Warner Inc.	41.676	NA	115.450	52.817	91.250	Entertainment	USA	www.aoltimewarner.com

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81	83	Sears, Roebuck & Company	41.366	1.376	50.409	6.753	289.000	General Merchandisers	USA	www.sears.com
82	53	RWE	41.114	993	105.221	6.746	131.765	Energy	Germany	www.rwe.com
83	96	Zurich Financial Services	40.638	-3.430	285.856	16.805	67.824	Insurance: P&C (stock)	Switzerland	www.zurich.com
84	114	Tesco PLC	40.387	1.451	25.991	10.263	188.182	Food and Drug Stores	United Kingdom	www.tesco.com
85	80	Tokyo Electric Power	40.370	1.356	119.559	18.940	52.322	Utilities: Gas and Electric	Japan	www.tepco.co.jp
86	93	The Procter & Gamble Company	40.238	4.352	40.776	13.706	102.000	Household and Personal Products	USA	www.pg.com
87	112	BMW	39.975	1.910	58.250	14.555	101.395	Motor vehicles and Parts	Germany	www.bmwgroup.com
88	130	Deutsche Post	39.956	623	170.672	5.346	334.952	Mail, Package, Freight Delivery	Germany	www.dpwn.de
89	64	HSBC Holdings PLC	39.730	6.239	759.246	52.406	184.405	Banks: Commercial and Savings	United Kingdom	www.hsbc.com
90	108	Freddie Mac	39.663	5.764	721.739	24.629	4.000	Diversified Financials	USA	www.freddiemac.com
91	103	Tyco International	38.971	-9.412	66.414	24.791	267.500	Electronics, Electrical Equip.	Bermuda	www.tyco.com
92	111	Costco Wholesale Corporation	38.763	700	11.620	5.694	69.000	Specialty Retailers	USA	www.costco.com
93	84	NEC Corporation	38.531	-202	34.604	3.023	145.807	Electronics, Electrical Equip.	Japan	www.nec.com
94	133	Hyundai Motor	38.459	1.146	38.890	8.713	49.855	Motor vehicles and Parts	South Korea	www.hyundai-motor.com
95	92	Pemex	37.974	-3.156	66.645	9.623	138.701	Mining, Crude-oil production	Mexico	www.pemex.com
96	74	Nissho Iwai Corporation	37.908	-606	17.745	171	11.597	Trading	Japan	www.nn-holdings.com
97	88	Fujitsu	37.896	-1.002	35.633	5.923	157.044	Computers, Office Equipment	Japan	www.fujitsu.com
98	107	Credit Agricole	36.745	2.172	609.451	31.225	95.537	Banks: Commercial and Savings	France	www.credit-agricole.fr
99	91	HypoVereinsbank	36.356	-784	725.259	14.932	65.926	Banks: Commercial and Savings	Germany	www.hvb.de
100	126	Sumitomo Life Insurance	36.305	15	185.402	2.924	50.544	Insurance: Life, Health (mutual)	Japan	www.sumitomolife.co.jp
101	121	Johnson & Johnson	36.298	6.597	40.556	22.697	108.300	Pharmaceuticals	USA	www.jnj.com
102	115	Royal Bank of Scotland	36.035	4.619	663.279	43.551	111.800	Banks: Commercial and Savings	Scotland	www.rbs.co.uk
103	100	Albertson's Inc.	35.916	485	15.211	5.197	202.000	Food and Drug Stores	USA	www.albertsons.com
104	106	Prudential plc	35.819	675	244.964	5.905	21.930	Insurance: Life, Health (stock)	United Kingdom	www.prudential.co.uk
105	131	Dell Computer Corporation	35.404	2.122	15.470	4.873	39.100	Computers, Office Equipment	USA	www.dell.com
106	127	Pfizer Inc.	35.281	9.126	46.356	19.950	98.000	Pharmaceuticals	USA	www.pfizer.com
107	113	Safeway, Inc.	34.799	-828	16.047	3.628	184.000	Food and Drug Stores	USA	www.safeway.com
108	120	SK	34.683	-1.916	34.879	581	22.000	Petroleum Refining	South Korea	www.sk.com
109	90	ABN AMRO Holding	34.591	2.087	583.452	11.313	106.438	Banks: Commercial and Savings	The Netherlands	www.abnamro.com
110	94	Repsol YPF	34.499	1.846	39.942	14.256	32.602	Petroleum Refining	Spain	www.repsol-ypf.com
111	125	Renault	34.353	1.849	55.854	12.412	132.351	Motor vehicles and Parts	France	www.renault.com
112	128	Metropolitan Life Insurance Company	34.104	1.605	277.385	17.385	48.512	Insurance: Life, Health (stock)	USA	www.metlife.com
113	116	Thyssen Krupp	33.723	199	30.794	8.190	191.254	Industrial and Farm Equipment	Germany	www.thyssenkrupp.com
114	135	Robert Bosch GmbH	33.069	554	28.831	8.955	224.341	Motor vehicles and Parts	Germany	www.bosch.com
115	118	Samsung Corporation	32.960	59	9.526	2.861	4.105	Trading	South Korea	www.samsungcorp.com
116	73	Morgan Stanley	32.415	2.988	529.499	21.885	55.726	Securities	USA	www.morganstanley.com
117	124	JC Penney	32.347	405	17.867	6.370	228.000	General Merchandisers	USA	www.jcpenney.net
118	171	Mitsubishi Motors Corporation	31.882	307	20.453	2.364	45.275	Motor vehicles and Parts	Japan	www.mitsubishi-motors.co.jp
119	140	GlaxoSmithKline plc	31.874	5.913	35.944	10.595	104.499	Pharmaceuticals	United Kingdom	www.gsk.com
120	134	United Parcel Service of America	31.272	3.182	26.357	12.455	360.000	Mail, Package, Freight Delivery	USA	www.ups.com

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
121	104	Kmart Corp.	30.762	-3.219	11.238	-301	212.000	General Merchandisers	USA	www.kmart.com
122	164	Statoil	30.545	2.111	29.653	8.230	17.115	Petroleum Refining	Norway	www.statoil.com
123	142	BASF Aktiengesellschaft	30.458	1.422	36.817	17.362	89.389	Chemicals	Germany	www.basf.com
124	143	Royal Philips Electronics	30.084	-3.031	33.882	14.606	170.087	Electronics, Electrical Equip.	The Netherlands	www.philips.com
125	150	HBOS plc	29.912	2.879	571.643	22.167	56.081	Banks: Commercial and Savings	United Kingdom	www.hbosplc.com
126	141	Mitsubishi Electric Corporation	29.865	-97	30.980	3.328	110.279	Electronics, Electrical Equip.	Japan	www.mitsubishielectric.com
127	145	Olivetti S.p.A.	29.694	-731	87.498	12.214	106.620	Telecommunications	Italy	www.olivetti.com
128	144	The Allstate Insurance Company	29.579	1.134	117.426	17.438	39.802	Insurance: P&C (stock)	USA	www.allstate.com
129	146	Aegon	29.445	1.463	249.959	14.933	25.974	Insurance: Life, Health (stock)	The Netherlands	www.aegon.com
130	139	BT Group plc	29.301	4.155	44.601	4.176	104.700	Telecommunications	United Kingdom	www.btplc.com
131	137	Sumitomo Mitsui Banking Corporation	28.776	-3.819	882.165	20.443	24.024	Banks: Commercial and Savings	Japan	www.smfj.co.jp
132	183	Walgreen Company	28.681	1.019	9.879	6.230	117.000	Food and Drug Stores	USA	www.walgreens.com
133	155	Saint-Gobain	28.622	983	31.636	11.873	172.357	Building materials, Glass	France	www.saint-gobain.com
134	160	Wells Fargo & Company	28.473	5.434	349.259	30.358	127.500	Banks: Commercial and Savings	USA	www.wellsfargo.com
135		Veolia Environnement SA	28.438	321	44.092	6.642	302.000	zMiscellaneous	France	www.veoliaenvironnement.com
136	147	Nokia Corporation	28.378	3.197	24.478	14.986	51.748	Network and Communications	Finland	www.nokia.com
137	175	Microsoft Corporation	28.365	7.829	67.646	52.180	50.500	Computer Services and Software	USA	www.microsoft.com
138	169	Enel S.p.A.	28.341	1.674	65.682	21.797	71.204	Utilities: Gas and Electric	Italy	www.enel.it
139	153	EADS	28.270	-283	49.739	13.395	103.967	Aerospace and Defense	The Netherlands	www.eads-nv.com
140	95	Merrill Lynch & Company, Inc.	28.253	2.513	447.928	22.875	52.400	Securities	USA	www.ml.com
141	149	United Technologies Corporation	28.212	2.236	29.090	8.355	155.000	Aerospace and Defense	USA	www.utc.com
142	82	Mizuho Holdings	28.199	NA	1.130.312	24.128	30.944	Banks: Commercial and Savings	Japan	www.mizuho-fg.co.jp
143	158	Bayer AG	28.008	1.002	43.749	16.092	122.600	Chemicals	Germany	www.bayer.com
144	156	ConAgra, Inc.	27.630	783	15.496	4.308	89.000	Food Consumer Products	USA	www.conagra.com
145	152	Dow Chemical Company	27.609	-338	39.562	7.626	49.959	Chemicals	USA	www.dow.com
146	110	Marathon Oil Corporation	27.470	516	17.812	5.082	28.166	Petroleum Refining	USA	www.marathon.com
147	166	Delphi Corp.	27.427	343	19.316	1.279	192.000	Motor vehicles and Parts	USA	www.delphi.com
148	161	Ito-Yokado	27.207	171	20.937	9.147	47.393	Food and Drug Stores	Japan	www.itoyokado.iyg.co.jp
149	167	Sprint Corp.	27.180	630	45.293	12.294	72.200	Telecommunications	USA	www.sprint.com
150	336	Valero Energy Corporation	26.976	92	14.465	4.308	19.830	Petroleum Refining	USA	www.valero.com
151	184	J. Sainsbury plc	26.962	702	19.017	7.908	108.700	Food and Drug Stores	United Kingdom	www.j-sainsbury.co.uk
152	151	Telefonica, S.A.	26.861	-5.273	71.399	17.835	152.845	Telecommunications	Spain	www.telefonica.com
153	182	Lockheed Martin Corporation	26.806	500	25.758	5.865	125.000	Aerospace and Defense	USA	www.lockheedmartin.com
154	157	Prudential Financial	26.797	194	292.746	21.330	54.086	Insurance: Life, Health (stock)	USA	www.prudential.com
155	162	Intel Corporation	26.764	3.117	44.224	35.468	78.700	Semiconductors	USA	www.intel.com
156	138	Motorola Incorporated	26.679	-2.485	31.152	11.239	97.000	Network and Communications	USA	www.motorola.com
157	154	Barclays Plc	26.589	3.351	648.896	24.479	77.200	Banks: Commercial and Savings	United Kingdom	www.barclays.co.uk
158	197	Nippon Mitsubishi Oil Corporation	26.492	265	28.253	7.843	13.882	Petroleum Refining	Japan	www.eneos.co.jp
159	216	Lowe's Companies Inc.	26.491	1.472	16.020	8.302	130.000	Specialty Retailers	USA	www.lowes.com
160	136	Santander Central Hispano Group	26.312	2.503	340.205	24.996	104.178	Banks: Commercial and Savings	Spain	www.bsch.es

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
161	176	Meiji Life Insurance Company	26.228	423	137.589	3.971	34.437	Insurance: Life, Health (mutual)	Japan	www.meiji-life.co.jp
162	199	Groupe Auchan	26.058	276	18.501	4.111	142.956	Food and Drug Stores	France	www.auchan.com
163	181	Pinault-Printemps-Redoute	25.882	1.503	31.505	6.788	113.453	General Merchandisers	France	www.pprgroup.com
164	168	DZ Bank	25559,8	52	354944,5	5951,9	25247	Banks: Commercial and Savings	Germany	www.dzbank.de
165	177	The Walt Disney Company	25329	1236	50045	23445	112000	Entertainment	USA	www.disney.com
166	159	PepsiCo, Inc.	25.112	3.313	23.474	9.298	140.000	Food Consumer Products	USA	www.pepsico.com
167	198	UnitedHealth Group	25.020	1.352	14.164	4.428	32.000	Health Care	USA	www.unitedhealthgroup.com
168	163	International Paper Company	24.976	-880	33.792	7.374	91.000	Forest and Paper Products	USA	www.ipaper.com
169	196	AEON Co., Ltd.	24.745	285	18.304	2.881	43.114	Food and Drug Stores	Japan	www.aeon.info
170	170	New York Life Insurance Company	24.721	424	117.228	7.986	7.500	Insurance: Life, Health (mutual)	USA	www.newyorklife.com
171	200	Viacom Inc.	24.606	726	89.754	62.488	90.955	Entertainment	USA	www.viacom.com
172	172	Dupont Co.	24.522	-1.103	34.621	9.063	79.000	Chemicals	USA	www.dupont.com
173	191	Societe Generale	24.205	1.321	525.997	18.261	88.278	Banks: Commercial and Savings	France	www.socgen.com
174	215	CVS Corporation	24.182	717	9.645	5.197	74.500	Food and Drug Stores	USA	www.cvs.com
175	/	Millea Holdings	24.038	465	83.874	15.221	21.203	Insurance: P&C (stock)	Japan	www.millea.co.jp
176	209	American Express	23.807	2.671	157.253	13.861	75.500	Diversified Financials	USA	www.americanexpress.com
177	211	Wachovia Corporation	23.591	3.579	341.839	32.078	80.778	Banks: Commercial and Savings	USA	www.wachovia.com
178	190	Canon Inc.	23.481	1.523	24.797	13.415	97.802	Computers, Office Equipment	Japan	www.canon.com
179	240	Archer Daniels Midland Co.	23.454	511	15.416	6.755	24.746	Food Production	USA	www.admworld.com
180	468	Tyson Foods, Inc.	23.367	383	10.372	3.662	120.000	Food Production	USA	www.tyson.com
181	217	SYSCO Corporation	23.351	680	5.990	2.133	46.800	Wholesalers: Food and Grocery	USA	www.sysco.com
182	173	Georgia-Pacific Corporation	23.271	-735	24.629	4.560	61.000	Forest and Paper Products	USA	www.gp.com
183	391	Arcelor	23.194	-176	27.111	7.064	104.241	Metals	Luxembourg	www.arcelor.com
184	208	KDDI Corporation	22.859	471	23.461	7.545	13.341	Telecommunications	Japan	www.kddi.com
185	194	ABB Ltd.	22.855	-783	29.533	1.013	139.051	Electronics, Electrical Equip.	Switzerland	www.abb.com
186	132	Goldman, Sachs & Company	22.854	2.114	355.574	19.003	19.739	Securities	USA	www.gs.com
187	165	Mitsubishi Tokyo Financial Group	22.754	-1.325	836.355	25.691	21.367	Banks: Commercial and Savings	Japan	www.mtfg.co.jp
188	247	Best Buy Co., Inc.	22.673	99	7.663	2.730	98.000	Specialty Retailers	USA	www.bestbuy.com
189	185	Petrobras	22.612	2.311	32.018	9.301	46.723	Petroleum Refining	Brazil	www.petrobras.com.br
190	229	Nippon Steel	22.563	-424	31.685	6.658	47.200	Metals	Japan	www.nsc.co.jp
191	226	Indian Oil Corporation	22.506	1.360	11.978	4.091	37.829	Petroleum Refining	India	www.iocl.com
192	179	Ingram Micro Inc.	22.459	-275	5.144	1.636	12.700	Electronics and Office Equipment	USA	www.ingrammicro.com
193	189	BellSouth	22.440	1.423	49.479	17.646	77.020	Telecommunications	USA	www.bellsouth.com
194	231	Rallye	22.425	40	18.608	282	122.043	General Merchandisers	France	
195	206	Lloyds TSB	22.391	2.676	406.915	12.834	79.537	Banks: Commercial and Savings	United Kingdom	www.lloydstsb.com
196	265	The Standard Life Assurance Co.	22.376		123.419		14.222	Insurance: Life, Health (mutual)	United Kingdom	www.standardlife.com
197	195	Honeywell International Inc.	22.274	-220	27.559	8.925	108.000	Aerospace and Defense	USA	www.honeywell.com
198	186	BANK ONE Corporation	22.171	3.295	277.383	22.440	73.685	Banks: Commercial and Savings	USA	www.bankone.com
199	235	Swiss Reinsurance Company	22.109	-59	117.058	12.068	8.287	Insurance: P&C (stock)	Switzerland	www.swissre.com
200	221	Electronic Data Systems	21.782	1.116	18.880	7.022	137.000	Computer Services and Software	USA	www.eds.com

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
201	270	Centrica	21.510	718	14.054	3.619	38.051	Utilities: Gas and Electric	United Kingdom	www.centrica.com
202	224	The Kansai Electric Power Company	21.462	660	62.425	13.056	35.554	Utilities: Gas and Electric	Japan	www.kepcocorp.co.jp
203	238	CNP Assurances	21.451	540	161.670	4.931	2.735	Insurance: Life, Health (stock)	France	www.cnp.fr
204	284	Petronas	21.430	3.975	46.845	20.620	28.378	Petroleum Refining	Malaysia	www.petronas.com.my
205	248	LG International	21.394	76	2.731	459	896	Trading	South Korea	www.lgicorp.com
206	204	Mitsubishi Heavy Industries	21.288	282	30.923	10.718	61.292	Industrial and Farm Equipment	Japan	www.mhi.co.jp
207	228	Alstom	21.237	-1.374	27.047	878	109.671	Industrial and Farm Equipment	France	www.alstom.com
208	269	Franz Haniel & Cie. GmbH	21.236	218	11.727	2.897	44.597	Wholesalers: Health Care	Germany	www.haniel.de
209	273	Toyota Tsusho Corporation	21.144	155	8.099	1.345	11.223	Trading	Japan	www.toyotsu.co.jp
210	233	East Japan Railway Company	21.056	804	57.795	8.280	78.760	Railroads	Japan	www.jreast.co.jp
211	266	Bouygues SA	21.033	630	26.006	5.258	121.604	Engineering, Construction	France	www.bouygues.fr
212	274	SNCF	20.966	60	41.575	4.491	242.162	Railroads	France	www.sncf.com
213	192	Banco Bilbao Vizcaya Argentaria	20.823	1.625	293.335	18.060	93.093	Banks: Commercial and Savings	Spain	www.bbva.es
214	257	Novartis Group	20.823	4.698	45.709	28.699	72.877	Pharmaceuticals	Switzerland	www.novartis.com
215	174	UFJ Holdings, Inc.	20.687	-4.997	676.397	15.722	22.317	Banks: Commercial and Savings	Japan	www.ufj.co.jp
216	205	Alcoa Inc.	20.618	420	29.810	9.927	127.000	Metals	USA	www.alcoa.com
217	246	FedEx Corporation	20.607	710	13.812	6.545	184.953	Mail, Package, Freight Delivery	USA	www.fedex.com
218	251	Fuji Photo Film Co.	20.564	399	24.948	14.173	72.633	Scientific, Photo, Control Equip.	Japan	www.fujifilm.com
219	225	Rabobank Group	20.508		393.209	17.409	51.867	Banks: Commercial and Savings	The Netherlands	www.rabobank.com
220	223	TUI AG	20.431	30	16.283	3.054	70.299	Miscellaneous	Germany	www.tui.com
221	291	Norsk Hydro ASA	20.413	1.098	29.910	10.951	42.615	Metals	Norway	www.hydro.com
222	249	Massachusetts Mutual Life Insurance	20.247	1.430	94.267	6.105	11.797	Insurance: Life, Health (mutual)	USA	www.massmutual.com
223	232	Caterpillar Incorporated	20.152	798	32.851	5.472	68.990	Industrial and Farm Equipment	USA	www.cat.com
224	264	Johnson Controls	20.103	601	11.165	3.500	111.000	Motor vehicles and Parts	USA	www.johnsoncontrols.com
225	245	Delhaize	19.932	169	11.375	3.703	143.894	Food and Drug Stores	Belgium	www.delhaizegroup.com
226	/	JFE Holdings Inc.	19.917	131	32.313	5.014	54.100	Metals	Japan	www.jfe-holdings.co.jp
227	254	CIGNA Corporation	19.915	-398	88.950	3.867	41.200	Health Care	USA	www.cigna.com
228	178	Aetna Inc.	19.879	-2.523	40.048	6.980	28.371	Health Care	USA	www.aetna.com
229	187	TIAA-CREF	19.791	-137	261.588	9.672	6.467	Insurance: Life, Health (mutual)	USA	www.tiaa-cref.org
230	287	China Mobile Communications	19.783	3.706	44.517	28.746	120.773	Telecommunications	China	www.chinamobile.com
231	193	Commerzbank	19.763	-282	442.962	9.243	36.566	Banks: Commercial and Savings	Germany	www.commerzbank.com
232	275	HCA	19.729	833	18.741	5.702	178.000	Health Care	USA	www.hcahealthcare.com
233	222	Royal & Sun Alliance	19.700	-1.413	96.507	4.899	50.479	Insurance: P&C (stock)	United Kingdom	www.royalsunalliance.com
234	239	The Coca-Cola Company	19.564	3.050	24.501	11.800	56.000	Beverages	USA	www.coca-cola.com
235	236	Gazprom	19.552	3.874	68.379	50.155	310.700	Energy	Russia	www.gazprom.ru
236	286	Samsung Life Insurance	19.536	792	58.191	4.614	6.220	Insurance: Life, Health (stock)	South Korea	www.samsunglife.com
237	243	Industrial Commercial Bank of China	19.529	789	577.111	21.530	405.000	Banks: Commercial and Savings	China	www.icbc.com.cn
238	230	Aventis	19.497	1.977	32.606	11.894	78.099	Pharmaceuticals	France	www.aventis.com
239	241	AutoNation USA	19.479	382	8.585	3.910	28.500	Specialty Retailers	USA	www.autonation.com
240	296	Mazda Motor Corporation	19.405	198	14.792	1.637	36.184	Motor vehicles and Parts	Japan	www.mazda.co.jp

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
241	297	Groupe Caisse	19.350	900	374.754	9.757	44.600	Banks: Commercial and Savings	France	www.caisse-epargne.fr
242	227	Supervalu Inc.	19.160	257	5.896	2.009	57.400	Wholesalers: Food and Grocery	USA	www.supervalu.com
243	267	AB Volvo	19.159	143	27.455	8.984	70.546	Motor vehicles and Parts	Sweden	www.volvo.com
244	252	Denso Corporation	19.145	911	19.857	11.789	89.380	Motor vehicles and Parts	Japan	www.globaldenso.com
245	288	Roche Group	19.096	-2.586	46.283	15.050	69.659	Pharmaceuticals	Switzerland	www.roche.com
246	283	Washington Mutual Inc.	19.037	3.896	268.298	20.134	52.459	Banks: Commercial and Savings	USA	www.wamu.com
247	213	Cisco Systems, Inc.	18.915	1.893	37.795	28.656	36.000	Network and Communications	USA	www.cisco.com
248	311	Sinochem	18.763	97	5.120	1.341	9.604	Trading	China	www.sinochem.com
249	344	Weyerhaeuser Company	18.521	241	28.219	6.623	56.787	Forest and Paper Products	USA	www.weyerhaeuser.com
250	278	Visteon Corporation	18.395	-352	11.170	2.978	76.946	Motor vehicles and Parts	USA	www.visteon.com
251	259	Credit Lyonnais	18.177	807	256.969	9.084	40.950	Banks: Commercial and Savings	France	www.creditlyonnais.com
252	218	Bristol-Myers Squibb Company	18.119	2.066	24.874	8.967	44.000	Pharmaceuticals	USA	www.bms.com
253	301	AstraZeneca	18.032	2.836	21.576	11.172	58.700	Pharmaceuticals	United Kingdom	www.astrazeneca.com
254	214	China Telecommunications	18.013	938	58.483	28.787	365.778	Telecommunications	China	www.chinatelecom.com.cn
255	271	British American Tobacco	17.960	1.731	26.219	8.347	60.867	Tobacco	United Kingdom	www.bat.com
256	285	Bridgestone Corporation	17.952	362	18.066	6.708	106.846	Motor vehicles and Parts	Japan	www.bridgestone.co.jp
257	293	SANYO Electric Co.	17.912	-598	23.145	4.058	79.025	Electronics, Electrical Equip.	Japan	www.sanyo.co.jp
258	237	Daiei	17.884	1.102	19.270	559	24.216	General Merchandisers	Japan	www.daiei.co.jp
259	279	Chubu Electric Power Company	17.859	874	52.981	11.024	26.303	Utilities: Gas and Electric	Japan	www.chuden.co.jp
260	373	Northrop Grumman Corporation	17.837	64	42.266	14.322	117.300	Aerospace and Defense	USA	www.northropgrumman.com
261	202	LG Electronics Inc.	17.836	274	16.920	2.392	55.248	Electronics, Electrical Equip.	South Korea	www.lge.com
262	/	Nippon Mining Holdings	17.752	30	13.735	1.728	10.914	Petroleum Refining	Japan	www.shinnikko-hd.co.jp
263	309	Abbott Laboratories, Inc.	17.685	2.794	24.259	10.665	71.819	Pharmaceuticals	USA	www.abbott.com
264	356	Deutsche Bahn	17.666	-457	48.294	5.884	250.690	Railroads	Germany	www.bahn.de
265	256	Dexia Group	17.655	1.228	368.239	9.539	20.723	Banks: Commercial and Savings	Belgium	www.dexia.com
266	282	Sara Lee Corporation	17.628	1.010	13.753	1.742	154.900	Food Consumer Products	USA	www.saralee.com
267	325	Fleming Companies, Inc.	17.562	-84	3.998	514	22.712	Wholesalers: Food and Grocery	USA	www.fleming.com
268	242	IntesaBCI	17.556	189	294.584	14.639	71.501	Banks: Commercial and Savings	Italy	www.bancaintesa.it
269	318	George Weston	17.476	439	10.548	2.774	142.850	Food and Drug Stores	Canada	www.weston.ca
270	308	Vinci	17.438	452	21.282	2.726	127.380	Engineering, Construction	France	www.vinci.com
271	272	Almanij	17.410	678	265.252	7.868	52.969	Banks: Commercial and Savings	Belgium	www.almanij.be
272	410	Wellpoint Health Networks	17.339	703	11.303	3.977	16.200	Health Care	USA	www.wellpoint.com
273	276	Bertelsmann AG	17.313	877	23.283	7.015	80.632	Entertainment	Germany	www.bertelsmann.com
274	258	AMR Corporation	17.299	-3.511	30.267	957	105.500	Airlines	USA	www.amrcorp.com
275	289	SK Global	17.152	-2.522	10.202	-2.922	4.190	Trading	South Korea	www.skglobal.com
276	294	Landesbank Baden-Wuerttemberg	17.139	267	336.265	9.278	10.342	Banks: Commercial and Savings	Germany	www.lbbw.de
277	399	Japan Air Lines	17.099	96	18.319	2.144	54.885	Airlines	Japan	www.jal.jp
278	255	Tomen Corp.	17.094	-550	8.195	115	8.429	Trading	Japan	www.tomen.co.jp
279	324	Korea Electric Power Corp.	17.075	2.436	59.451	29.892	16.852	Utilities: Gas and Electric	South Korea	www.kepco.co.kr
280	295	Raytheon Company	16.962	-640	23.946	8.870	76.400	Aerospace and Defense	USA	www.raytheon.com

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
281	250	Pharmacia Corporation	16.929	597	18.517	7.983	43.000	Pharmaceuticals	USA	www.pnu.com
282	322	Coca-Cola Enterprises Inc.	16.889	494	24.375	3.347	74.000	Beverages	USA	www.cokecce.com
283	260	Loews Corporation	16.828	912	70.520	11.235	25.800	Insurance: P&C (stock)	USA	www.loews.com
284	212	Lehman Brothers Holdings Inc.	16.781	975	260.336	8.942	12.343	Securities	USA	www.lehman.com
285	323	Idemitsu Kosan Co.	16.588	19	19.748	2.497	8.794	Petroleum Refining	Japan	www.idemitsu.co.jp
286	381	Suzuki Motor	16.539	255	12.965	5.468	39.127	Motor vehicles and Parts	Japan	www.suzuki.co.jp
287	307	Japan Tobacco Inc.	16.475	618	24.942	13.684	38.628	Tobacco	Japan	www.jti.co.jp
288	346	Sharp Corporation	16.440	268	16.907	7.608	46.633	Electronics, Electrical Equip.	Japan	www.sharp.co.jp
289	329	La Poste	16.386	32	53.809	1.727	325.000	Mail, Package, Freight Delivery	France	www.laposte.fr
290	/	China Life Insurance	16.379	97	36.233	941	65.232	Insurance: Life, Health (stock)	China	www.chinalife.com.cn
291	316	3M	16.332	1.974	15.329	5.993	68.744	zMiscellaneous	USA	www.3m.com
292	314	Kingfisher	16.282	258	15.307	7.335	78.523	Specialty Retailers	United Kingdom	www.kingfisher.com
293	337	Banco Bradesco	16.125	693	40.331	3.064	74.393	Banks: Commercial and Savings	Brazil	www.bradesco.com.br
294	313	Adecco Group	16.116	227	6.118	1.408	29.000	Diversified Outsourcing Services	Switzerland	www.adecco.com
295	298	Yasuda Mutual Life Insurance	16.105	524	80.053	1.735	20.263	Insurance: Life, Health (mutual)	Japan	www.yasuda-life.co.jp
296	338	Lufthansa Group	16.045	678	20.081	4.329	93.796	Airlines	Germany	www.lufthansa.com
297	334	Nationwide Insurance Enterprise	15.949	172	129.565	9.829	31.000	Insurance: P&C (stock)	USA	www.nationwide.com
298	119	Asahi Mutual Life Insurance	15.933	51	55.667	916	22.162	Insurance: Life, Health (mutual)	Japan	www.asahi-life.co.jp
299	328	Publix Supermarkets Inc.	15.931	632	4.790	3.008	90.100	Food and Drug Stores	USA	www.publix.com
300	310	Northwestern Mutual	15.916	158	102.935	7.217	4.298	Insurance: Life, Health (mutual)	USA	www.northwesternmutual.com
301	332	The Hartford Financial Services	15.907	1.000	182.043	10.734	29.000	Insurance: P&C (stock)	USA	www.thehartford.com
302	281	BHP	15.906	1.690	29.552	12.356	51.037	Mining, Crude-oil production	Australia	www.bhpbilliton.com
303	253	FleetBoston Financial Corporation	15.868	1.188	190.453	16.833	50.290	Banks: Commercial and Savings	USA	www.fleetboston.com
304	300	Xerox Corporation	15.849	91	25.458	2.443	67.100	Computers, Office Equipment	USA	www.xerox.com
305	358	Endesa	15.826	1.201	50.553	8.440	26.354	Utilities: Gas and Electric	Spain	www.endesa.es
306	331	Rite Aid Corp.	15.801	-1.12	6.134	-1.12	56.160	Food and Drug Stores	USA	www.riteaid.com
307	330	Mitsui Sumitomo Insurance Co., LTD.	15.760	269	54.626	8.787	16.013	Insurance: P&C (stock)	Japan	www.ms-ins.com
308	280	Abbey National plc	15.745	-1.800	331.190	10.291	32.364	Banks: Commercial and Savings	United Kingdom	www.abbeynational.plc.uk
309	290	Tech Data Corporation	15.739	-200	3.248	1.339	7.900	Electronics and Office Equipment	USA	www.techdata.com
310	39	Duke Energy Corporation	15.663	1.034	60.966	15.078	22.000	Utilities: Gas and Electric	USA	www.duke-energy.com
311	207	Alcatel	15.644	-4.486	27.157	5.254	75.940	Telecommunications	France	www.alcatel.com
312	/	AT&T Wireless Services	15.632	-2.324	45.806	19.697	31.000	Telecommunications	USA	www.attws.com
313	409	Compass Group PLC	15.610	326	14.441	4.452	392.352	Food Services	United Kingdom	www.compass-group.com
314	36	American Electric Power	15.583	-519	34.741	7.064	26.763	Energy	USA	www.aep.com
315	387	AdvancePCS	15.541	168	3.713	971	6.000	Health Care	USA	www.advancepcs.com
316	305	Nichimen Corporation	15.496	-398	9.906	254	7.626	Trading	Japan	www.nn-holdings.com
317	350	Mitsubishi Chemical	15.490	176	17.853	2.954	37.633	Chemicals	Japan	www.m-kagaku.co.jp
318	244	Qwest Communications	15.487	NA	31.228	-1.094	50.788	Telecommunications	USA	www.qwest.com
319	292	Federated Department Stores Inc.	15.435	818	14.441	5.762	113.000	General Merchandisers	USA	www.fds.com
320	304	US Bancorp	15.422	3.289	180.027	18.101	52.046	Banks: Commercial and Savings	USA	www.usbank.com

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
321	340	McDonald's Corporation	15.406	894	23.971	10.281	413.000	Food Services	USA	www.mcdonalds.com
322	302	Kajima Corporation	15.386	83	17.071	1.341	17.376	Engineering, Construction	Japan	www.kajima.co.jp
323	465	Sun Life Financial Co. of Canada	15.311	636	111.528	9.437	14.905	Insurance: Life, Health (stock)	Canada	www.sunlife.com
324	320	Bayerische Landesbank	15.308	223	358.137	9.264	9.605	Banks: Commercial and Savings	Germany	www.bayernlb.de
325	342	Michelin	15.222	549	17.116	4.542	126.285	Motor vehicles and Parts	France	www.michelin.com
326	364	News Corporation	15.184	-6.260	40.105	19.418	33.800	Entertainment	Australia	www.newscorp.com
327	343	Man Aktiengesellschaft	15.165	128	12.269	2.760	75.054	Motor vehicles and Parts	Germany	www.man-group.com
328	341	Anglo American	15.145	1.563	33.581	16.261	177.000	Mining, Crude-oil production	United Kingdom	www.angloamerican.co.uk
329	360	Bombardier, Inc.	15.116	-393	18.940	1.790	70.411	Aerospace and Defense	Canada	www.bombardier.com
330	/	Kookmin Bank	15.075	1.016	157.772	8.518	18.347	Banks: Commercial and Savings	South Korea	www.kbstar.com
331	321	UniCredito Italiano	15.034	1.703	223.876	12.866	66.555	Banks: Commercial and Savings	Italy	www.unicredit.it
332	277	Bank of China	15.031	1.141	434.202	26.538	192.468	Banks: Commercial and Savings	China	www.bank-of-china.com
333	210	Telefonaktiebolaget LM Ericsson	14.999	-1.956	23.902	8.448	64.621	Network and Communications	Sweden	www.ericsson.com
334	317	Skanska AB	14.979	-86	8.994	1.632	76.358	Engineering, Construction	Sweden	www.skanska.com
335	333	Exelon Corp.	14.955	1.440	37.478	7.742	25.000	Utilities: Gas and Electric	USA	www.exeloncorp.com
336	347	Karstadt Quelle AG	14.952	153	10.720	1.759	104.536	General Merchandisers	Germany	www.karstadtquelle.com
337	299	Royal Bank Of Canada	14.772	1.841	243.971	11.980	59.549	Banks: Commercial and Savings	Canada	www.rbc.com
338	437	Banco do Brasil S.A.	14.679	695	57.795	2.598	78.619	Banks: Commercial and Savings	Brazil	www.bb.com.br
339	359	Household International Inc.	14.672	1.558	97.861	10.416	33.000	Diversified Financials	USA	www.household.com
340	354	Wyeth	14.584	4.447	25.995	8.156	52.762	Pharmaceuticals	USA	www.wyeth.com
341	349	Liberty Mutual Group	14.544	508	55.827	6.447	36.067	Insurance: P&C (stock)	USA	www.libertymutual.com
342	363	Gap Inc.	14.455	478	9.902	3.658	165.000	Specialty Retailers	USA	www.gapinc.com
343	369	Lear Corporation	14.425	13	7.483	1.662	115.000	Motor vehicles and Parts	USA	www.lear.com
344	327	Onex Corp.	14.424	-92	12.590	661	98.000	Semiconductors	Canada	www.onex.com
345	219	Hyundai	14.324	-144	829	-125	386	Trading	South Korea	www.hyundaicorp.com
346	315	United Air Lines	14.286	-3.212	23.656	-2.483	72.000	Airlines	USA	www.united.com
347	379	Ricoh	14.266	595	15.896	5.545	74.600	Computers, Office Equipment	Japan	www.ricoh.co.jp
348	445	Sompo Japan Insurance Inc.	14.262	-240	44.963	4.300	17.636	Insurance: P&C (stock)	Japan	www.sompo-japan.co.jp
349	578	Cendant	14.243	846	35.897	9.315	85.000	Miscellaneous	USA	www.cendant.com
350	375	Swiss Life Insurance & Pension Co.	14.125	-1.088	115.401	3.016	11.541	Insurance: Life, Health (stock)	Switzerland	www.swisslife.com
351	303	National Australia Bank Limited	14.110	1.795	205.050	12.597	41.428	Banks: Commercial and Savings	Australia	www.national.com.au
352	148	TXU Corporation	14.086	-4.210	30.891	5.066	19.200	Energy	USA	www.txucorp.com
353	/	Bunge Limited	14.074	255	8.349	1.472	24.207	Food Production	USA	www.bunge.com
354	382	Deere & Company	13.947	319	23.768	3.163	43.051	Industrial and Farm Equipment	USA	www.deere.com
355	424	TENET Healthcare Corp.	13.913	785	13.814	5.619	96.796	Health Care	USA	www.tenethealth.com
356	348	Dentsu	13.894	189	10.013	3.728	13.623	Miscellaneous	Japan	www.dentsu.com
357	421	General Dynamics Corporation	13.863	917	11.731	5.199	54.000	Aerospace and Defense	USA	www.gd.com
358	352	The Goodyear Tire & Rubber Company	13.850	-1.106	13.147	651	92.742	Motor vehicles and Parts	USA	www.goodyear.com
359	357	Schlumberger Limited	13.825	-2.320	19.435	5.606	78.500	Oil and Gas Equipment, Services	USA	www.slb.com
360	326	Emerson	13.824	122	14.545	5.741	111.500	Electronics, Electrical Equip.	USA	www.gotoemerson.com

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
361	416	Lafarge Corporation	13.813	431	27.953	7.325	77.547	Building materials, Glass	France	www.lafarge.com
362	203	PG&E Corporation	13.784	-874	33.696	3.613	21.814	Utilities: Gas and Electric	USA	www.pgecorp.com
363	367	Nippon Express Co., Ltd.	13.762	192	10.163	3.100	65.160	Mail, Package, Freight Delivery	Japan	www.nittsu.co.jp
364	400	Gaz de France	13.752	3.415	29.944	9.716	35.694	Utilities: Gas and Electric	France	www.gazdefrance.com
365	386	Electrolux AB	13.700	524	9.804	3.171	81.971	Electronics, Electrical Equip.	Sweden	www.electrolux.com
366	453	Old Mutual plc	13.650	236	79.800	4.485	46.462	Insurance: Life, Health (stock)	South Africa	www.oldmutual.com
367	417	Groupama	13.648	-146	50.893	4.092	27.400	Insurance: P&C (mutual)	France	www.groupama.com
368	180	Lucent Technologies	13.568	NA	17.791	-4.734	47.000	Network and Communications	USA	www.lucent.com
369	397	Anheuser-Busch Companies, Inc.	13.566	1.934	14.120	3.052	23.176	Beverages	USA	www.anheuser-busch.com
370	345	Kimberly-Clark Corporation	13.566	1.675	15.586	5.650	63.900	Household and Personal Products	USA	www.kimberly-clark.com
371	389	China Construction Bank	13.539	520	372.499	12.956	306.809	Banks: Commercial and Savings	China	www.ccb.com.cn
372	406	Coles Myer	13.538	186	4.512	1.800	164.000	Food and Drug Stores	Australia	www.colesmyer.com
373	415	L'Oreal	13.508	1.208	15.712	7.788	50.491	Household and Personal Products	France	www.loreal.com
374	220	Mitsui Mutual Life Insurance Co.	13.508	425	64.708	1.708	16.203	Insurance: Life, Health (mutual)	Japan	www.mitsui-seimei.co.jp
375	378	Taisei Corporation	13.497	123	15.968	1.472	17.159	Engineering, Construction	Japan	www.taisei.co.jp
376	351	The May Department Stores Co.	13.491	542	11.936	4.035	116.000	General Merchandisers	USA	www.maycompany.com
377	422	Lukoil	13.453	1.843	22.001	14.000	150.000	Petroleum Refining	Russia	www.lukoil.com
378	388	Flextronics International	13.379	-84	8.394	4.542	95.000	Semiconductors	Singapore	www.flextronics.com
379	418	Safeway plc	13.363	260	7.930	3.495	55.285	Food and Drug Stores	United Kingdom	www.safeway.co.uk
380	362	Delta Air Lines Incorporated	13.305	-1.272	24.720	893	75.100	Airlines	USA	www.delta.com
381	486	Anthem Insurance Companies, Inc.	13.282	549	12.293	5.362	19.500	Health Care	USA	www.anthem.com
382	374	Legal & General Group Plc	13.240	-271	171.765	5.126	8.487	Insurance: Life, Health (stock)	United Kingdom	www.legalandgeneral.com
383	407	Akzo Nobel N.V.	13.238	773	13.420	2.202	67.900	Chemicals	The Netherlands	www.akzonobel.com
384	392	COFCO	13.218	116	5.143	1.785	28.000	Trading	China	www.cofco.com
385	262	Diageo plc	13.216	2.332	28.189	9.147	55.350	Beverages	United Kingdom	www.diageo.com
386	413	KT Corporation	13.102	1.556	24.118	6.480	44.012	Telecommunications	South Korea	www.kt.co.kr
387	371	Tohoku Electric Power Company Inc.	13.080	508	35.496	7.104	18.678	Utilities: Gas and Electric	Japan	www.tohoku-epco.co.jp
388	442	Woolworths	13.075	295	3.213	693	145.000	Food and Drug Stores	Australia	www.woolworthslimited.com.au
389	440	Cathay Life Insurance Co., Ltd.	13.072	372	36.973	1.975	31.745	Insurance: Life, Health (stock)	Taiwan	www.cathlife.com.tw
390	339	BCE	13.021	1.576	25.043	8.147	66.000	Telecommunications	Canada	www.bce.ca
391	456	Magna International	12.971	554	10.142	5.421	73.000	Motor vehicles and Parts	Canada	www.magnaint.com
392	427	Migros	12.969	114	11.878	5.800	62.400	Food and Drug Stores	Switzerland	www.migros.ch
393	398	Winn-Dixie Stores, Inc.	12.943	87	2.938	812	76.700	Food and Drug Stores	USA	www.winn-dixie.com
394	383	Eastman Kodak Company	12.841	770	13.369	2.777	70.000	Scientific, Photo, Control Equip.	USA	www.kodak.com
395	425	Royal Mail Group	12.838	-865	9.860	3.300	200.000	Mail, Package, Freight Delivery	United Kingdom	www.royalmailgroup.com
396	394	Groupe Danone	12.815	1.213	16.254	5.338	92.209	Food Consumer Products	France	www.danonegroup.com
397	372	Otto Versand Gmbh & Co.	12.771	128	5.692	851	56.471	Specialty Retailers	Germany	www.otto.de
398	405	Shimizu Corporation	12.718	56	15.346	1.802	13.455	Engineering, Construction	Japan	www.shimz.co.jp
399	454	Air France Group	12.619	119	13.758	4.358	71.525	Airlines	France	www.airfrance.com
400	377	Halliburton Company	12.572	-998	12.844	3.558	83.000	Oil and Gas Equipment, Services	USA	www.halliburton.com

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
401	412	Sunoco Inc.	12.550	-47	6.441	1.394	14.000	Petroleum Refining	USA	www.sunocoinc.com
402	408	Alcan Aluminum Ltd.	12.540	374	17.538	8.625	48.000	Metals	Canada	www.alcan.com
403	43	El Paso Energy Corp.	12.503	-1.467	46.224	8.377	11.855	Energy	USA	www.elpaso.com
404	268	Sun Microsystems, Inc.	12.496	-587	16.522	9.801	39.400	Computers, Office Equipment	USA	www.sun.com
405	429	Lagardere Groupe	12.495	-275	19.067	3.866	45.826	Publishing, Printing	France	www.lagardere.com
406	439	Marks & Spencer	12.495	743	10.678	4.803	47.756	General Merchandisers	United Kingdom	www.marksandspencer.com
407	426	Union Pacific Corporation	12.491	1.341	32.764	10.651	60.947	Railroads	USA	www.up.com
408	527	Comcast Corporation	12.460	-274	113.105	38.329	82.000	Telecommunications	USA	www.comcast.com
409	446	Christian Dior SA	12.450	168	28.124	3.980	55.314	Apparel	France	www.dior.com
410	517	San Paolo IMI S.p.A	12.337	841	213.827	11.057	45.650	Banks: Commercial and Savings	Italy	www.sanpaoloimi.com
411	365	RAG Aktiengesellschaft	12.315	6	20.039	1.842	81.990	Mining, Crude-oil production	Germany	www.rag.de
412	261	Solectron Corporation	12.276	-3.110	11.014	4.773	68.500	Semiconductors	USA	www.solectron.com
413	492	Investimentos Itau S.A.	12.274	527	32.386	1.805	54.648	Banks: Commercial and Savings	Brazil	www.itausa.com.br
414	550	Express Scripts Inc.	12.261	203	3.207	1.003	7.561	Health Care	USA	www.express-scripts.com
415	/	FirstEnergy Corp.	12.247	629	33.581	7.455	17.560	Utilities: Gas and Electric	USA	www.firstenergycorp.com
416	431	Sumitomo Electric Industries Ltd.	12.219	-163	13.719	5.172	79.197	Electronics, Electrical Equip.	Japan	www.sei.co.jp
417	390	BAE Systems	12.135	-1.031	25.121	9.138	68.100	Aerospace and Defense	United Kingdom	www.baesystems.com
418	432	Power Corporation of Canada	12.109	411	44.395	3.410	19.000	Insurance: Life, Health (stock)	Canada	www.powercorp.com
419	423	Stora Enso Oyj	12.085	-210	19.113	8.559	42.461	Forest and Paper Products	Finland	www.storaenso.com
420	419	Nordea Group	12.069	839	261.935	12.484	37.562	Banks: Commercial and Savings	Sweden	www.nordea.com
421	478	Alliance UniChem plc	12.057	164	5.159	1.395	29.854	Wholesalers: Health Care	United Kingdom	www.alliance-unichem.com
422	459	LVMH	12.000	526	22.474	7.419	52.991	Apparel	France	www.lvmh.com
423	395	Norinchukin Bank	11.992	537	516.658	14.902	3.503	Banks: Commercial and Savings	Japan	www.nochubank.or.jp
424	396	Cinergy Corporation	11.990	361	13.307	3.294	7.823	Energy	USA	www.cinergy.com
425	470	The TJX Companies, Inc.	11.981	578	3.941	1.409	89.000	Specialty Retailers	USA	www.tjx.com
426	353	Edison SpA	11.950	-659	19.092	4.697	5.397	Energy	Italy	www.edison.it
427	376	Amerada Hess Corporation	11.932	-218	13.262	4.249	11.662	Petroleum Refining	USA	www.hess.com
428	451	Royal KPN N.V.	11.930	-9.021	26.402	4.730	40.195	Telecommunications	The Netherlands	www.kpn.com
429	428	British Airways	11.893	111	20.390	3.253	51.505	Airlines	United Kingdom	www.ba.com
430	430	Carso Global Telecom, S.A. de C.V.	11.682	304	16.567	913	63.775	Telecommunications	Mexico	www.cgtelecom.com.mx
431	438	Kyushu Electric Power	11.664	528	35.458	7.086	19.060	Utilities: Gas and Electric	Japan	www.kyuden.co.jp
432	366	Bank Of Nova Scotia	11.633	1.142	189.322	9.439	44.633	Banks: Commercial and Savings	Canada	www.scotiabank.com
433	474	Cosmo Oil	11.610	28	10.514	1.633	5.710	Petroleum Refining	Japan	www.cosmo-oil.co.jp
434	469	Staples, Inc.	11.596	446	5.721	2.659	43.864	Specialty Retailers	USA	www.staples.com
435	487	Wolseley plc	11.586	419	6.083	2.499	37.136	Miscellaneous	United Kingdom	www.wolseley.com
436	380	Accenture Ltd.	11.574	245	5.479	439	75.000	Computer Services and Software	Bermuda	www.accenture.com
437	201	Westdeutsche Landesbank	11.574	-1.636	278.706	5.241	9.910	Banks: Commercial and Savings	Germany	www.westlb.com
438	420	Edison International	11.562	1.077	33.284	4.437	15.038	Utilities: Gas and Electric	USA	www.edison.com
439	/	Reliant Resources	11.558	-560	17.637	5.653	6.002	Energy	USA	www.reliantresources.com
440	519	Aisin Seiki Co., Ltd.	11.555	394	10.325	3.614	42.500	Motor vehicles and Parts	Japan	www.aisin.co.jp

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Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
441	476	Sodexho Alliance	11.517	167	8.379	2.352	315.141	Food Services	France	www.sodexho.com
442	401	Taiyo Mutual Life Insurance	11.505	13	55.234	973	3.296	Insurance: Life, Health (mutual)	Japan	www.taiyo-seimei.co.jp
443	494	POSCO	11.472	871	16.084	9.523	27.100	Metals	South Korea	www.posco.co.kr
444	450	Office Depot, Inc.	11.438	311	4.766	2.297	43.000	Specialty Retailers	USA	www.officedepot.com
445	506	Pechiney	11.395	-47	8.640	3.163	34.000	zMiscellaneous	France	www.pechiney.com
446	/	Eurohypo AG Europaeische	11.389	277	239.740	4.984	2.559	Banks: Commercial and Savings	Germany	www.eurohypo.com
447	/	Tokyu Corporation	11.370	28	21.177	1.280	31.320	Engineering, Construction	Japan	www.tokyu.co.jp
448	443	Computer Sciences Corporation	11.347	440	10.433	4.606	90.000	Computer Services and Software	USA	www.csc.com
449	457	Toys 'R' Us, Inc.	11.305	229	9.397	4.030	65.000	Specialty Retailers	USA	www.toysrusinc.com
450	462	Fuji Heavy Industries	11.263	275	11.335	3.468	27.478	Motor vehicles and Parts	Japan	www.fhi.co.jp
451	493	Humana Inc.	11.261	143	4.600	1.607	13.500	Health Care	USA	www.humana.com
452	460	Central Japan Railway	11.186	403	47.045	5.854	23.617	Railroads	Japan	www.jr-central.co.jp
453	433	PacificCare Health Systems Inc.	11.157	-758	4.251	1.328	7.800	Health Care	USA	www.pacificare.com
454	444	Waste Management Inc.	11.142	822	19.631	5.308	53.000	zMiscellaneous	USA	www.wm.com
455	505	TPG N.V.	11.139	566	8.674	2.982	150.365	Mail, Package, Freight Delivery	The Netherlands	www.tpg.com
456	441	Eli Lilly & Company	11.078	2.708	19.042	8.274	43.700	Pharmaceuticals	USA	www.lilly.com
457	404	Isuzu Motors	11.075	-1.184	8.676	223	20.690	Motor vehicles and Parts	Japan	www.isuzu.co.jp
458	556	GUS plc	11.054	388	11.488	4.020	58.528	Specialty Retailers	United Kingdom	www.gusplc.co.uk
459	491	Whirlpool Corporation	11.016	-394	6.631	739	65.000	Electronics, Electrical Equip.	USA	www.whirlpoolcorp.com
460	447	Obayashi Corporation	11.005	26	16.433	2.196	13.170	Engineering, Construction	Japan	www.obayashi.co.jp
461	532	OAD NK YUKOS	10.914	3.058	14.394	10.555	100.000	Petroleum Refining	Russia	www.yukos.com
462	411	Telstra	10.886	1.916	21.106	7.920	40.427	Telecommunications	Australia	www.telstra.com.au
463	/	Seiko Epson Corporation	10.853	103	10.100	2.373	73.797	Computers, Office Equipment	Japan	www.epson.com
464	361	Canadian Imperial Bank Of Commerce	10.836	415	174.574	7.878	42.552	Banks: Commercial and Savings	Canada	www.cibc.com
465	598	Edeka Zentrale	10.818	111	3.225	359	27.426	Wholesalers: Food and Grocery	Germany	www.edeka.de
466	452	Corus Group	10.801	-688	10.353	4.382	50.900	Metals	United Kingdom	www.corusgroup.com
467	458	The Great Atlantic & Pacific Tea Co	10.794	-194	2.885	498	52.140	Food and Drug Stores	USA	www.aptea.com
468	504	Continental AG	10.786	214	8.602	1.800	64.379	Motor vehicles and Parts	Germany	www.conti-online.com
469	480	Dai Nippon Printing	10.743	236	12.228	7.945	35.182	Publishing, Printing	Japan	www.dnp.co.jp
470	263	Nortel Networks Corporation	10.701	-3.585	15.971	1.960	36.960	Network and Communications	Canada	www.nortelnetworks.com
471	557	Kinki Nippon Railway Co., Ltd.	10.698	-414	19.544	1.054	38.851	Railroads	Japan	www.kintetsu.co.jp
472	414	Textron, Inc.	10.658	-124	15.505	3.406	49.000	Aerospace and Defense	USA	www.textron.com
473	499	Asahi Glass Co. Ltd	10.628	-32	15.066	4.671	53.728	Building materials, Glass	Japan	www.agc.co.jp
474	496	Marriott International, Inc.	10.619	277	8.296	3.573	144.000	zMiscellaneous	USA	www.marriott.com
475	482	Manpower Inc.	10.611	113	3.702	1.000	21.400	Diversified Outsourcing Services	USA	www.manpower.com
476	370	The Toronto-Dominion Bank	10.598	-48	177.606	8.330	42.817	Banks: Commercial and Savings	Canada	www.td.com
477	495	Southern Company	10.549	1.318	31.799	8.710	26.178	Utilities: Gas and Electric	USA	www.southernco.com
478	551	Fortum Corporation	10.540	630	18.846	6.187	13.670	Petroleum Refining	Finland	www.fortum.com
479	483	ManuLife Financial	10.527	872	88.635	5.537	31.000	Insurance: Life, Health (stock)	Canada	www.manulife.com
480	560	Thales	10.499	105	18.852	2.245	60.662	Aerospace and Defense	France	www.thalesgroup.com

Appendices

Revenue Rank 2002	Revenue Rank 2001	COMPANY NAME	Revenue \$ millions	Profits \$ millions	Assets \$ millions	Stockholder's Equity \$ millions	Number of Employees	INDUSTRY	Country	CORPORATE WEBSITE
481	481	Kreditanstalt fur Wiederaufbau	10.493	250	273.809	6.812	2.665	Banks: Commercial and Savings	Germany	www.kfw.de
482	472	Sekisui House	10.481	279	10.497	5.384	19.432	Engineering, Construction	Japan	www.sekisuihouse.co.jp
483	518	Kuraya Sanseido	10.460	41	5.385	947	7.741	Wholesalers: Health Care	Japan	www.kurayasanseido.co.jp
484	509	Marsh & McLennan Securities Corp.	10.440	1.365	13.855	5.018	59.500	Diversified Financials	USA	www.mmc.com
485	497	MBNA Corporation	10.431	1.766	52.857	9.101	26.100	Banks: Commercial and Savings	USA	www.mbna.com
486	/	Vattenfall AB	10.395	779	31.707	5.179	34.248	Utilities: Gas and Electric	Sweden	www.vattenfall.se
487	533	AES Corporation	10.346	-3.509	33.776	-341	36.630	Utilities: Gas and Electric	USA	www.aesc.com
488	471	Agricultural Bank of China	10.335	139	305.422	16.088	490.999	Banks: Commercial and Savings	China	www.abchina.com
489	463	Resona Holdings	10.335	-6.874	361.712	2.621	19.307	Banks: Commercial and Savings	Japan	www.resona-hd.co.jp
490	484	Dana Corporation	10.283	-182	9.553	1.482	63.100	Motor vehicles and Parts	USA	www.dana.com
491	/	N.V. Nederlandse Gasunie	10.282	34	3.285	191	1.390	Energy	The Netherlands	www.nvnederlandsegasunie.nl
492	489	Toppan Printing Co., Ltd.	10.272	239	11.110	6.033	33.292	Publishing, Printing	Japan	www.toppan.co.jp
493	534	AFLAC Incorporated	10.257	821	45.058	6.394	6.086	Insurance: Life, Health (stock)	USA	www.aflac.com
494	335	XCEL Energy Inc.	10.254	-2.218	27.258	4.770	14.642	Utilities: Gas and Electric	USA	www.xcelenergy.com
495	565	Nippon Yusen Kabushiki Kasha	10.252	117	10.855	2.432	18.016	Miscellaneous	Japan	www.nykline.com
496	477	Dominion	10.218	1.362	37.909	10.213	17.000	Utilities: Gas and Electric	USA	www.dom.com
497	503	Health Net Inc.	10.202	229	3.467	1.309	9.400	Health Care	USA	www.health.net
498	573	Fluor Corporation	10.190	164	3.142	884	44.809	Engineering, Construction	USA	www.fluor.com
499	515	Schering-Plough Corporation	10.180	1.974	14.136	8.142	30.500	Pharmaceuticals	USA	www.schering-plough.com
500	564	Kawasaki Heavy Industries, Ltd.	10.173	107	9.691	1.472	28.642	Industrial and Farm Equipment	Japan	www.khi.co.jp

Appendix 6:

Evaluation of business functions of the top 15 enterprise CRM software solutions in alphabetical order*

* ISM. 2005. The ISM top 15 enterprise Customer Relationship Management (CRM) software solutions. Information Systems Marketing. USA.

Evaluation of the CRM software by Amdocs Limited

Amdocs Clarify CRM v. 12	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management		X	
Account Management			X
Sales Management		X	
Time Management			X
Customer Contact Center			X
Customer Service			X
Field Service		X	
Telemarketing/Telesales			X
Marketing			X
Lead Management		X	
PRM		X	
Knowledge Management		X	
Business Analytics		X	
e-Business		X	
Supply Chain Management	X		
Project Management	X		
ERM	X		
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Clear Technologies, Inc.

C2 CRM v. 7.07	Evaluation of Business Functions		
	limited	good	strong
Business Functions			
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center		X	
Customer Service			X
Field Service		X	
Telemarketing/Telesales		X	
Marketing			X
Lead Management			X
PRM		X	
Knowledge Management		X	
Business Analytics			X
e-Business		X	
Supply Chain Management	Not available		
Project Management		X	
ERM		X	
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Oncontact Software Corporation

CMS v. 8.0	Evaluation of Business Functions		
	limited	good	strong
Business Functions			
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center	X		
Customer Service			X
Field Service		X	
Telemarketing/Telesales			X
Marketing		X	
Lead Management			X
PRM		X	
Knowledge Management	X		
Business Analytics			X
e-Business	X		
Supply Chain Management	X		
Project Management		X	
ERM	X		
Configuration			X
Customization			X
Data Conversion			X
User Friendliness/Support			X

Evaluation of the CRM software by E.piphany, Inc.

Epiphany E6 v. 6.5	Evaluation of Business Functions		
	limited	good	strong
Business Functions			
Contact Management		X	
Account Management		X	
Sales Management		X	
Time Management			X
Customer Contact Center		X	
Customer Service		X	
Field Service	X		
Telemarketing/Telesales			X
Marketing			X
Lead Management			X
PRM		X	
Knowledge Management		X	
Business Analytics			X
e-Business		X	
Supply Chain Management	X		
Project Management	Not available		
ERM	Not available		
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Optima Technologies, Inc.

ExSelligence v. 4.8	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management			X
Account Management		X	
Sales Management			X
Time Management			X
Customer Contact Center	X		
Customer Service		X	
Field Service	X		
Telemarketing/Telesales		X	
Marketing		X	
Lead Management			X
PRM		X	
Knowledge Management	X		
Business Analytics			X
e-Business	X		
Supply Chain Management	X		
Project Management			X
ERM	X		
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Firstwave Technologies, Inc.

Firstwave CRM 2004	Evaluation of Business Functions		
	limited	good	strong
Business Functions			
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center		X	
Customer Service			X
Field Service		X	
Telemarketing/Telesales		X	
Marketing	X		
Lead Management		X	
PRM		X	
Knowledge Management	X		
Business Analytics			X
e-Business	X		
Supply Chain Management	X		
Project Management			X
ERM	X		
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Software Innovation

growBusiness Solutions 2.5	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center		X	
Customer Service		X	
Field Service		X	
Telemarketing/Telesales		X	
Marketing			X
Lead Management			X
PRM		X	
Knowledge Management		X	
Business Analytics			X
e-Business			X
Supply Chain Management		X	
Project Management			X
ERM			X
Configuration			X
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Saratoga Systems, Inc.

iAvenue v. 6.4	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management		X	
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center	X		
Customer Service		X	
Field Service	X		
Telemarketing/Telesales			X
Marketing		X	
Lead Management			X
PRM		X	
Knowledge Management		X	
Business Analytics			X
e-Business	X		
Supply Chain Management	Not available		
Project Management		X	
ERM		X	
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by SAP AG

mySAP CRM 4.0	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center			X
Customer Service			X
Field Service		X	
Telemarketing/Telesales			X
Marketing		X	
Lead Management			X
PRM			X
Knowledge Management		X	
Business Analytics		X	
e-Business			X
Supply Chain Management		X	
Project Management			X
ERM			X
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Onyx Software

Onyx Enterprise CRM v. 5.0	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center		X	
Customer Service		X	
Field Service	Not available		
Telemarketing/Telesales			X
Marketing			X
Lead Management		X	
PRM			X
Knowledge Management		X	
Business Analytics			X
e-Business		X	
Supply Chain Management	X		
Project Management	Not available		
ERM	Not available		
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by PeopleSoft, Inc. (Oracle-owned)

PeopleSoft CRM 8.9	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center		X	
Customer Service			X
Field Service			X
Telemarketing/Telesales			X
Marketing			X
Lead Management			X
PRM			X
Knowledge Management		X	
Business Analytics		X	
e-Business		X	
Supply Chain Management			X
Project Management		X	
ERM		X	
Configuration			X
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Pivotal Corporation

Pivotal CRM Suite 5.1	Evaluation of Business Functions		
	limited	good	strong
Business Functions			
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center			X
Customer Service		X	
Field Service	X		
Telemarketing/Telesales			X
Marketing			X
Lead Management			X
PRM		X	
Knowledge Management		X	
Business Analytics			X
e-Business		X	
Supply Chain Management	X		
Project Management	X		
ERM	Not available		
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Siebel Systems, Inc.

Siebel 7.7	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management			X
Account Management			X
Sales Management			X
Time Management			X
Customer Contact Center			X
Customer Service			X
Field Service			X
Telemarketing/Telesales			X
Marketing			X
Lead Management			X
PRM			X
Knowledge Management			X
Business Analytics			X
e-Business		X	
Supply Chain Management	X		
Project Management			X
ERM			X
Configuration			X
Customization		X	
Data Conversion			X
User Friendliness/Support			X

Evaluation of the CRM software by SSA Global

SSA CRM	Evaluation of Business Functions		
	limited	good	strong
Business Functions			
Contact Management			X
Account Management			X
Sales Management		X	
Time Management		X	
Customer Contact Center		X	
Customer Service	X		
Field Service		X	
Telemarketing/Telesales		X	
Marketing		X	
Lead Management	X		
PRM		X	
Knowledge Management		X	
Business Analytics		X	
e-Business	X		
Supply Chain Management		X	
Project Management	X		
ERM	Not available		
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X

Evaluation of the CRM software by Tibco

Tibco Process RM v. 9.0	Evaluation of Business Functions		
Business Functions	limited	good	strong
Contact Management			X
Account Management			X
Sales Management			X
Time Management		X	
Customer Contact Center		X	
Customer Service			X
Field Service		X	
Telemarketing/Telesales			X
Marketing			X
Lead Management		X	
PRM		X	
Knowledge Management	X		
Business Analytics			X
e-Business	X		
Supply Chain Management	X		
Project Management	Not available		
ERM		X	
Configuration		X	
Customization		X	
Data Conversion		X	
User Friendliness/Support			X