CRM implementation misfits in large enterprises

A framework to potentially resolve misfits in CRM implementations in large enterprises

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Master thesis

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Abstract

Companies are increasingly choosing to implement enterprise systems as part of their core business. Systems like Customer Relationship Management (CRM) are standard packages that can be implemented. However, business requirements do not match the system when implementing standard packages and vice versa. Such misfits are unavoidable during system implementations.

This research identified a literature gap. Previous literature on implementation misfits mostly focuses on Small and Medium Enterprises (SMEs) rather than Large Enterprises (LEs), and Enterprise Resource Planning (ERP) systems rather than CRM systems. As a result, it is unclear what misfits occur during a CRM implementation in LEs and how they can be solved. The following research question is formulated to solve this problem: *"What are the potential solutions to the misfits in CRM implementations in large enterprises?"*.

To answer the research question, a literature review was carried out, followed by an exploratory case study. Four pilot interviews and seven case study interviews were conducted during the case study. The collected data were analyzed by transcribing and coding to generate new theoretical insights about the misfits and potential solutions of CRM implementations in large enterprises.

During the case study, four types of misfits have been identified: latent structure misfits, user interface misfits, process logic misfits, and access control misfits. The misfits can be tackled by customizing the system to align the business needs with the system. Two customization approaches discussed in this research are extension and configuration. Initially, both approaches can solve all four kinds of misfits. However, choosing between the two approaches depends on the level of specificity of a business requirement. The more specific a requirement is, the more likely it is that extension is preferred. The research has shown that extension is mainly applied to the latent structure, user interface, and process logic misfit, while configuration is mainly applied to the process logic and access control misfit.

This research provides a significant theoretical contribution and managerial implications to LEs in CRM implementations.

Keywords: *CRM, CRM implementation, Misfits, Customization, Extension, Configuration, System implementation, Customization approaches, Misalignment*

Preface

In front of you lies the master thesis *"CRM implementation misfits in large enterprises"*. This master thesis is written to fulfill the graduation requirements of the master Information Management at Tilburg University. The graduation project took place between September 2022 and January 2023.

I experienced the thesis period as challenging and instructive. It was challenging because I have never written an academic thesis before. Also, choosing and framing the research was not easy, but as the process continued, I got the hang of it, which eventually led to this research. Writing this thesis provided me (new) insights into system implementations, customization approaches, and academic writing and thinking. It also provided me insights into the use and amount of Microsoft technologies and IT consulting work.

The issue that led to the creation of this thesis was addressed by Avanade. With the assistance of my company supervisor I. Varga and university supervisor C. Ma, I can present this thesis to you. I want to express my gratitude to the people that helped me during the thesis period.

First, I would like to thank C. Ma for providing helpful feedback, guiding me on the right track, and providing tips and information on thinking and writing academically.

Second, I would like to thank Avanade and I. Varga for giving me the opportunity to write my thesis at Avanade. I learned a lot about the consultancy world and Microsoft technologies. In addition, I am thankful for the resources I could use, and for all the knowledge I have gained by talking to my supervisor and other colleagues.

Third, I want to thank my colleagues and the clients from Avanade for their time and willingness to participate in my interviews.

Finally, I want to thank my family and friends for their unconditional support and encouragement during the thesis period. Without the help and support of everyone mentioned above, this thesis would not have been the same.

I hope you enjoy reading it.

Jane Wang

The Hague, January 12, 2023

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1. Introduction

1.1 Research background

Nowadays, most organizations consider enterprise systems such as ERP or CRM as part of their core business (vom Brocke et al., 2017). As cited in Seddon et al.'s (2010) article, *"enterprise systems are large-scale, real-time, integrated application-software packages that use the computational, data storage, and data transmission power of modern information technology (IT) to support processes, information flows, reporting, and business analytics within and between complex organizations"* (p. 305). This substantiates why enterprise systems are part of a company's core business.

An ERP system is a software system that helps enterprises automate and manage business processes across the organization (Microsoft; Oracle; SAP). It is used to manage day-to-day business activities, and it ties together various business processes and their data flow (Microsoft). In contrast, CRM system is a software that manages the relationships and interactions with customers and potential customers to improve business relationships (Salesforce).

According to Statista (2022), IT spending on enterprise systems is growing and will surpass 570 billion US dollars in 2022. Figure 1 shows that enterprise systems are widely used and will keep increasing in the future.

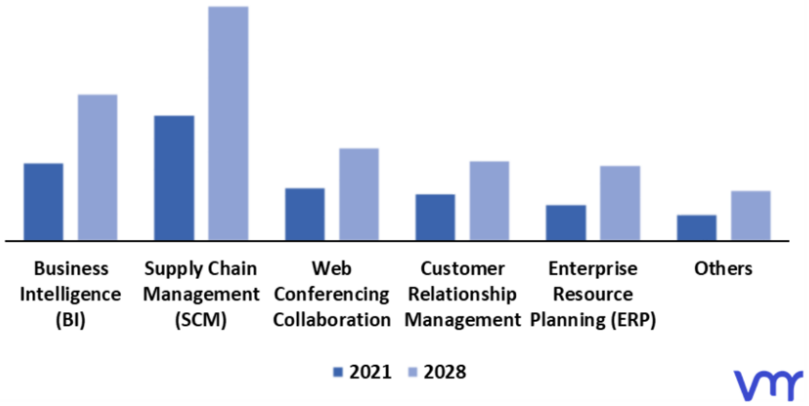

Figure 1 - Global enterprise software market (VerifiedMarketResearch, 2022)

As a result, there are consultancy companies that help other companies implement enterprise systems. Before the implementation, the question arises whether the client's processes match

the system. The second question is if it is needed to change the process, or if it is better to customize the system to fit the business process. This issue is also addressed in Sia and Soh's paper (2007), which states that there are two ways to approach a misalignment. The first approach is that organizations can adapt to the package, and the second approach is that organizations can customize the package during a misalignment with the software package. However, it remains unclear what option is best for a particular situation.

1.1.1 Misalignment in system implementation

A misalignment is the gap between the organizational needs and the degree to which an 'off-the-shelf' system can meet these needs (van Beijsterveld & van Groenendaal, 2016). It is a poor misfit between the IT strategy implemented in the system, and the business strategy the company aims for. Most implementations are seen as unsuccessful due to misfits (Yen et al., 2011). Markus et al. (2000) also stated that for the success of a technical innovation, a fit between the organization and the technical validity is essential. Generally, enterprise systems are generic and thus inflexible; the software is not built according to the enterprise's specific needs, but most of the time, the organization is adapting to the software (Li, 2021; Strong & Volkoff, 2010). Several studies claim that generic functionalities do not meet the organization's expectations, resulting in adverse consequences for the company and end users (Berente et al., 2019; Li, 2019). Misalignment between the system and the organizational needs is a problem that many, if not all, organizations encounter while implementing enterprise systems.

Existing literature has shown that gaps always exist between the system and the business processes and that it is hard to find the right fit (Hustad et al., 2016; Yen et al., 2011). According to Soh et al. (2003), there are two major solutions to deal with a misfit, which are customization and changing the organizational structures to adapt to the system's structure. Other solutions that are not so extreme, are accepting the deficiency in the system's functionalities and creating a workaround (Soh et al., 2000).

This research is partly based on the study done by Van Beijsterveld and Van Groenendaal (2016). Their research focused on misfits in ERP implementations in SMEs, but this research will focus on misfits in CRM implementations in LEs. In this research, one of the goals is to see if the misfits in LEs match the misfits in SMEs, and how the misfits are being solved. The findings of this study may lead to the development of a new theory about resolving CRM implementation misfits in LEs.

1.1.2 Customization: extension and configuration

To tackle the misfits, firms typically adopt several solutions. One of the major solutions is customization. There are several customization approaches, but extension and configuration are the most used approaches (Ali et al., 2019). As a result, the most used customization approaches will be defined in this sub-chapter. In addition, the target company at which the research will be conducted, also makes a distinction between extension and configuration.

Customization and extension

Customization is seen as the altering, modifying, or enlarging of a standardized enterprise system's functionality to achieve a "fit" between the system and a company's business operations that are supported by the system (Parthasarathy & Daneva, 2014). Another definition of customization, given by Singh and Pekkola (2021), is that customization is the ability and practice of providing clients with solutions that meet the needs of their requirements. IT customization is the result of detailed information gathering, process definition, and implementation of best practices.

The company by which the research will be conducted, gives the following definition to customization: Performing modifications to achieve a certain objective or functionality that the out-of-the-box features of CRM do not provide right away. Modification in this context is adding custom code to the out-of-the-box functionalities, or completely building your own functionality in the system. The company's definition of customization does not match the literature's definition of customization. However, the company's definition matches the literature's definition of extension. Extension means expanding the system's functionality by adding custom code at pre-defined places in the application's code (Ali et al., 2019).

Configuration

According to Brehm et al. (2001) and Cavusoglu et al. (2009), configuration is the process of setting software quality parameters to meet specific user requirements. It does not need any package modification and is therefore part of the embedded structure of the enterprise system (van Beijsterveld & van Groenendaal, 2016). When talking about configuration, McCarthy (1998, as cited in (Cavusoglu et al., 2009) also includes default ("out-of-the-box") settings.

The company by which the research will be conducted, gives the following definition to configuration: Adjusting settings of both the CRM system and the out-of-the-box features so that the CRM system works according to the client's preferences, without using any code.

Based on the definitions of the literature and the company, it can be stated that customization is the overarching terminology, and that extension and configuration are customization approaches. The difference between extension and configuration is that extension involves custom code to create functionality that is beyond the configurable limit. On the other hand, configuration is about adjusting the settings of the CRM system and out-of-the-box features without adding code to the system.

1.1.3 SMEs and LEs

Existing literature does not provide a precise definition of a large enterprise. However, Ali and Miller (2017) stated that LEs are identified by certain characteristics such as *"capital intensity, number of years in existence, variety of products, size of market share resource usage"* (p. 671), and number of employees.

One of the differences between SMEs and LEs is that the resistance to change in LEs is more significant than in SMEs (Ghobadian & Gallear, 1997). Ghobadian and Gallear (1997) listed several key factors that contribute to this difference, such as the number of employees involved in the change, and the high degree of standardization. During an implementation in LEs, there are more stakeholders, which means that there are more needs to consider. This can lead to more/different misfits compared to SMEs since it is impossible to meet all requirements.

The organizational structure in SMEs also differs from the structure in LEs. Generally, SMEs have a flatter and less complex structure than LEs (Zach, 2012). As a result, more processes will be involved in the implementation in large enterprises. This in turn can lead to more misfits, compared to SMEs.

1.2 Problem statement

Research about system implementation is done in the area of both SMEs and LEs. However, research about implementation, focused on misfits, is mainly done in SMEs (van Beijsterveld & van Groenendaal, 2016). Another point to note is that research about implementation with the focus on misfits is primarily done in the area of ERP systems rather than in the area of CRM systems (Soh et al., 2003; Wei et al., 2005). Furthermore, literature in the field of CRM implementation in large enterprises does exist, but it misses the part on implementation misfits (Finnegan & Currie, 2010).

Maleki and Anand (2008) claim that ERP and CRM have similarities, but also differences. The implementation of ERP systems and CRM systems should not only be viewed from a software implementation perspective, but also from a strategic point of view. Although, each system has its own focus/goal: ERP systems focus on internal processes, and CRM systems focus more on the customers. Thus, with a few differences, implementing CRM systems are in some ways similar to ERP implementations. The differences will be explored in this research.

Furthermore, it is not clear how to use the different customization approaches to solve system implementation misfits. The application process of extension and configuration is not clear in the literature. It would also be beneficial for businesses to know what kind of misfits exist in CRM implementations and how they can be solved.

1.3 Research question

Since this research is about the misfits in CRM implementations and the question whether to use extension or configuration, the following research question is formulated: *"What are the potential solutions to the misfits in CRM implementations in large enterprises?"*.

In order to answer the research question, the following questions need to be answered first:

1. What are the misfits in CRM implementations?
2. In which parts of the system do the misfits occur?
3. What mechanisms are used when solving a misfit with extension?
4. What mechanisms are used when solving a misfit with configuration?

1.4 Research approach and objectives

To answer the previous research questions, this study adopted a taxonomy theory methodology (the literature review), combined with an exploratory case study. The aim of the research is to identify CRM implementation misfits and how the misfits can be solved, which is an under-explored topic in the literature. According to Yin (2009), the best research strategy for gaining a better understanding of an under-researched topic, is the exploratory approach.

This takes the following approach to answer the research question. First, the researcher conducted a literature review to gain a basic understanding of the concepts involved in system implementation misfits and resolution strategies. Second, pilot interviews were conducted to familiarize with the content to gain knowledge about the pros and cons of the different

solutions. After the pilot interviews, the researcher conducted case study interviews and read through archived data to collect data. The data were then analyzed through coding, after which a conclusion was drawn. The findings and conclusion ultimately led to a framework that answers the main question of this research. The steps that have been taken to conduct this research, are shown in figure 2 and will be explained in detail in chapter 3.

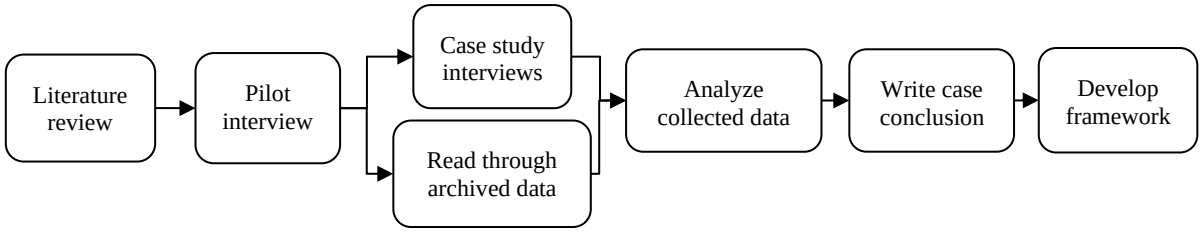

Figure 2 - Research steps

1.5 Research outline

This paper is divided into several parts. First, chapter 2 discusses this research's relevant literature and explains key concepts related to this study in detail. Subsequently, chapter 3 describes the context in which this research is carried out, and how data is collected and analyzed. Chapter 4 shows the results of the case interviews that are conducted. After presenting the results, the results are interpreted, summarized, and discussed in chapter 5. The discussion eventually leads to a framework that is presented in chapter 5.3. The conclusion can be found in chapter 6. In chapter 6, the research is briefly summarized, and the contribution, practical implications, limitations, and future research of this research are also mentioned.

2. Literature review

In this chapter, the literature review is carried out. The relevance of this study and the relevant literature related to this study is explained to provide in-depth background information. Also, important concepts will be defined and explained. In chapter 2.1, the difference between ERP systems and CRM systems is explained. In chapter 2.2, a literature review is carried out about large enterprises and small and medium enterprises, and their characteristics. Chapter 2.3 is about implementation misfits and how the misfits can be solved. Chapter 2.4 gives in-depth information about the different customization approaches. Chapter 2.5 shows different layers in enterprise systems where customization can occur. Lastly, in chapter 2.6, the research gap is formulated, and it also mentions the contribution of this research.

2.1 ERP and CRM systems

In this sub-chapter, a more detailed explanation is given about ERP and CRM systems. Since most of the literature about implementation misfits is based on ERP systems (Soh et al., 2003; Wei et al., 2005), ERP systems are also briefly discussed.

2.1.1 ERP systems

An ERP system is used across all functional units within an organization. It provides information that supports several organizational functions, such as strategy, operations, management analysis, and decision-making functions. It also integrates the different business functions to share common data, information, and knowledge throughout the enterprise. An ERP system is used by top management and employees who use the system on their day-to-day operations, where business processes are being managed and automated (Jagoda & Samaranayake, 2017; Matende & Ogao, 2013).

2.1.2 CRM systems

Nowadays, businesses widely embrace CRM systems (Bohling et al., 2006; Pohludka & Štverková, 2019). The industries that use CRM the most, are the retail, banking, hotel, financial, insurance, and consulting industries (Gessner, 2022; Labus & Stone, 2010; Liu, 2007; Sakunthala, 2020).

CRM systems generally come in three types: operational CRM, analytical CRM, and collaborative CRM (Hadi, 2015).

- Operational CRM concentrates on collecting customers' data at different touchpoints. As a result, this CRM type offers a consistent perspective of customers throughout an organization (Buttle et al., 2006). Additionally, it covers tasks like enterprise marketing management, contact management, personnel management, and sales force automation.
- Organizations can utilize analytical CRM to employ data warehouse, data mining, and text mining to address business challenges. By analytical CRM, technology is used to collect and analyze customer-related data that organizations can use to implement business strategies (Payne & Frow, 2005).
- Collaborative CRM focuses on using methods and technologies to improve cooperation between the organization and its clients (Hadi, 2015). Businesses frequently implement CRM systems to boost customer loyalty and customer service quality.

2.1.3 ERP and CRM implementations

Maleki and Anand (2008) claim that one of the similarities between both ERP and CRM systems, is that both systems should be viewed from a strategic point of view and a software implementation perspective. Although there are similarities, implementations of ERP and CRM differ in organizational goals. ERP systems focus on internal processes, and CRM systems focus more on the customers. Thus, besides the differences in the systems' organizational goals, CRM implementations are in certain ways similar to ERP implementations.

Literature in the field of CRM implementation in large enterprises does exist, but it misses the part of implementation misfits (Finnegan & Currie, 2010). It is often about CRM implementations regarding organizational performance (Dah et al., 2021; Reinartz et al., 2004; Suoniemi et al., 2022), customer-/organizational-centric view (Kim et al., 2012), CRM implementation strategies (Finnegan & Currie, 2010; Khashab et al., 2022), and a successful CRM implementation as a whole (Farhan et al., 2018; Saeed et al., 2011).

Previous studies have examined relevant issues, such as organizational performance, CRM implementation strategies, and successful CRM implementations. Nevertheless, previous studies lack the focus on misfits that occur during implementation misfits. Even though the articles are not directly related to this research, there are still links that can be made. Farhan et

al.'s research (2018) maps out the critical success factors (CSF) for CRM systems that lead to a successful CRM implementation. This research adds to Farhan's research (2018) by elaborating on the detailed misalignment between the CRM system and the organization, which was one of the CSF in Farhan et al.'s research (2018).

Almotairi (2018) is also one of the researchers that developed a framework for successful CRM implementation and stated that one of the four perils for CRM implementation to overcome, is rolling out CRM before changing an organization to match the system. With this, Almotairi (2018) indicates that it is not self-evident that there is an immediate fit between the organization and the system to be implemented. In his framework, one of the steps is "assessing the readiness of the organization in terms of its human, technological, and organizational (process) capabilities to implement CRM", which comes down to aligning the organizational needs with the system. According to the framework, this is a critical practice during the implementation phase. This study contributes to this line of research by investigating how organizational needs can be aligned with the system.

2.2 System implementation in LEs versus SMEs

This sub-chapter provides the differences between large enterprises and small and medium enterprises. First, an overview will be provided with the differences in characteristics between both enterprises. Then, each characteristic will be discussed briefly, and finally, an explanation will be given on how organizational characteristics influence system implementations.

2.2.1 Distinction between LEs and SMEs

The distinction between LEs and SMEs is identified by certain characteristics, such as capital intensity and the number of employees. In this research, an enterprise is defined as large when it has more than 250 employees, based on former research (van Beijsterveld & van Groenendaal, 2016; White et al., 1999). Other differences between LEs and SMEs include how the organization is structured, the degree of resistance to change, cultural differences, and how an organization is managed (Ali & Miller, 2017; Ghobadian & Gallear, 1997; Zach, 2012).

In essence, SMEs and LEs have their own characteristics. Zach (2012) divided SME characteristics into three dimensions based on former research (Bernroider & Koch, 2000; Ghobadian & Gallear, 1997). The characteristics are categorized into organizational,

environmental, and technical characteristics. However, such an overview is not provided for large enterprises. Therefore, table 1 provides an overview of the SME characteristics based on Zach's (2012) overview, and the LE characteristics, which are based on former research (Bagale et al., 2021; Bernroider & Koch, 2000; Chang et al., 2010; Ghobadian & Gallear, 1997; Josiassen et al., 2014; Leung & Bockstedt, 2009; Pohludka & Štverková, 2019; Shiau et al., 2009; Thong, 1999). Only the characteristics related to enterprise system implementation are included in the overview. Hence, the environmental characteristics are left out in the overview provided in table 1. Followed by the overview, the differences between LEs and SMEs regarding organizational and information system characteristics will be explained.

Table 1 - Overview: Characteristics SMEs vs. LEs

SMEs characteristics	LEs Characteristics
Organizational characteristics	
Resources • Financial resources • Human capital • Resources for employees' training	**Resources** • Greater financial resources • More available resources • Customized training and educational programs
Ownership, management, and decision making • Owner is the CEO • Time constraints of owner-managers • Top management highly visible and active • Few layers of management • Centralized decision making • Short-term decision making cycle • Intuitive decision process	**Ownership, management, and decision making** • Owner is the product owner/business unit manager • Limited top management visibility • Several layers of management • Fragmented decision making • Extended decision making cycle • Fact-based decision making
Structure • Simpler, flatter, and less complex structure • Flexible structure and information flows • Organic structure • Limited and unclear division of activities • Low degree of employees' specialization	**Structure** • Hierarchical and complex structure • Rigid structure and information flows • Hierarchical authority • Clear and extensive function division of activities • High degree of employees' specialization
Culture • Unified culture • Few interests groups • Common corporate mindset • Low resistance to change • Organic and fluid culture • Influenced by owner-managers	**Culture** • Cultural diversity • Many interests groups • Strong departmental/functional mindset • Normally slow response to environmental changes • Mostly bureaucratic culture
Processes and procedures • Smaller and less complicated processes • More flexible and adaptable processes • Informal rules and procedures • Low degree of standardization and formalization	**Processes and procedures** • Larger and complicated processes • Rigid and unadaptable processes • Formal rules and procedures • High degree of standardization and formalization

Information system characteristics	
IS knowledge • Limited knowledge of IS • Modest managerial expertise • Limited management attention to IS • Lack of strategic planning of IS	**IS knowledge** • Specialized knowledge of IS • Large managerial expertise • Management attention to IS • Strategic planning of IS
IT expertise • Limited IT/IS in-house technical expertise • Emphasis on packaged applications • Greater reliance on third party	**IT expertise** • More IT/IS in-house technical expertise • Less reliance on third party
IS function, IS complexity • Comparable amount of IS functions • Comparable complexity for IS solutions	

2.2.2 Organizational characteristics

Resources. SMEs have limited access to capital (Bagale et al., 2021; Josiassen et al., 2014; Pohludka & Štverková, 2019). Their financial resources are smaller than that of LEs. The greater financial resources and available resources in LEs make it possible to invest more in employees' training.

***Ownership, management, and decision making*.** Unlike SMEs, the top management in LEs is not visible due to the several layers of management (Zach, 2012). Top management is often busy with strategic issues and is not busy with day-to-day operations. Issues related to day-to-day operations are managed by business unit managers and are therefore fragmented in decision making (Ghobadian & Gallear, 1997). The business unit manager oversees their own business unit (Thong, 1999).

Structure. Compared to SMEs, LEs in general have a complex and hierarchical structure. As a result, the communication process is harder to manage since the information flows through multiple layers within the organization (Josiassen et al., 2014). Therefore, procedures for handling information flows are indispensable, which makes the organizational structure and the way in which the organization flows, more rigid.

Besides that, LEs have more activities involved in their business. Therefore, it is essential to have a clear and extensive function division of activities to guarantee the structure (Ghobadian & Gallear, 1997). Employees in LEs are often assigned to few specific tasks, which implies a high degree of specialization (Ghobadian & Gallear, 1997).

Culture. The culture in LEs is diverse with many interest groups. Because of the size of the enterprise, it is hard for employees in LEs to have a common corporate mindset like SMEs (Ghobadian & Gallear, 1997). However, within a department/function, there is a common

mindset. The bureaucratic culture is unavoidable in such large enterprises. As a result of the diversity, it is hard for employees in LEs to respond to change.

Processes and procedures. Compared to SMEs, the scale of activities and processes in LEs are generally larger and more complicated. Furthermore, the processes in LEs are often rigid and unadaptable to changes in their environment. Therefore, it is harder to adapt to implementing new initiatives for LEs. It is hard to react fast because most of the activities in LEs are governed by formal rules and procedures with a high degree of standardization and formalization, which all have to be considered during a change (Josiassen et al., 2014).

2.2.3 Information system characteristics

IS knowledge. In LEs, the usage of information resources is typically organized, planned, controlled, and directed by an IT manager, head of IT, and/or CIO, dependent on the organizational structure. The more IS knowledge an enterprise has, the more likely the enterprise adopts information systems. In SMEs, most CEO or other managerial positions (if there are any) pay less attention to technology, because they are not specialized in it (Bagale et al., 2021; Josiassen et al., 2014; Pohludka & Štverková, 2019). As a result, there is a lack of strategic planning for using and implementing IS in SMEs.

IT expertise. Not only do LEs have more IS knowledge, but they also have more IT expertise. Due to the limited IT expertise in SMEs, SMEs are more inclined to purchase packaged software rather than developing a system in-house (Bernroider & Koch, 2000). Despite the difference in IT expertise, LEs also purchase packaged software. The difference is that LEs do not emphasize purchasing packaged software since they generally have the expertise to build a system in-house.

IS function, IS complexity. The IS function and IS complexity are similar in both SMEs and LEs. The amount of IS functions is comparable to SMEs, even though there are more stakeholders to consider. IS complexity in LEs is also comparable to SMEs (Bernroider & Koch, 2000).

2.2.4 How organizational characteristics influence CRM system implementation

In general, LEs are more capable of digitalization than SMEs because of the number of available resources, good risk management, and strong infrastructure (Bagale et al., 2021; Ko et al., 2008; Thong, 1999). As seen in the previous sections of chapter 2.1, the information system characteristics depend on organizational characteristics. Each characteristic from chapter 2.1.2 will be discussed and explained how it ultimately affects the CRM system implementation.

Resources. As LEs have more financial resources, LEs have more options to invest in IT and employees' training regarding the implemented system. Regarding system implementation, it is not only about financial resources, but also about human capital. In LEs, assigning employees to an implementation project is easier since there are more employees to choose from (Nguyen et al., 2015).

Ownership, management, and decision making. The way LEs are managed is different from SMEs. In LEs, there are more management layers with managers who are specialized in their own discipline (Ghobadian & Gallear, 1997; Zach, 2012). Each business unit and department has its own manager specialized in the specific department. For the IT department, this allows the IT manager, CIO, or head of IT to organize, plan, control, and direct the IT resources. Therefore, LEs have more IS knowledge which makes it faster to start an implementation project.

Structure. The organizational characteristic that has the largest influence on information system characteristics is the organizational structure. Since the information flows through multiple layers within the organization, more people are involved in the flow compared to SMEs. The result of more people being involved is that there are more needs/requirements to be considered during a system implementation. Furthermore, the information system is also complex due to the complex organizational structure. Different rules and roles also need to be defined in the information system. Another point to note is that LEs are more inclined to use CRM systems, because LEs are further away from their customers than SMEs (Josiassen et al., 2014).

Culture, processes, and procedures. System implementation in LEs is complex since change is inevitable in system implementation. There are several reasons why it is hard for LEs to change. First, the culture in LEs is diverse because of the number of employees, which makes

it hard to have a common corporate mindset (Ghobadian & Gallear, 1997). Second, most activities in LEs are governed by formal rules and procedures with a high degree of standardization and formalization (Josiassen et al., 2014). It is difficult to deviate from the highly standardized rules and procedures and to achieve a common corporate mindset.

2.3 Misfits

This sub-chapter describes the misfits that can occur during system implementations. A framework for organizing the misfits will also be discussed.

A misfit is a poor fit between the IT strategy supported by, and implemented in, the system and the business strategy pursued by the company. A distinction can be made between an actual misfit and a perceived misfit. By an actual misfit, the system does not do what is required. By a perceived misfit, the company does not correctly understand how the system works (van Beijsterveld & van Groenendaal, 2016).

2.3.1 Different types of misfits

To determine whether the misfit is actual or perceived, van Groenendaal and van Beijsterveld (2016) made a flow chart that helps to determine whether a misfit is a legitimate issue or not, so each misfit can be assigned to a specific category in the analytical framework, that is deep structure, surface structure or latent structure for actual misfits, and perceived misfits.

Sia & Soh (2007) distinguish ‘deep structures’ and ‘surface structures’ in ERP systems, using Wand & Weber’s (1993, 1995) systems ontology. The components in the deep structure are seen as core components. When these components are missing in a system, significant deficiencies occur. A surface structure misfit happens when the system’s interface differs from how users view, access, and input data. Surface structure misfits are not as severe as deep structure misfits. Also, surface structure misfits are often linked with issues such as convenience. A latent structure misfit arises from the surface structure or deep structures of the system. Programming certain functionalities in the system can lead to certain roles or control structure, or to certain organizational culture (van Beijsterveld & van Groenendaal, 2016). The success or failure of the system implementation is significantly influenced by the latent structure.

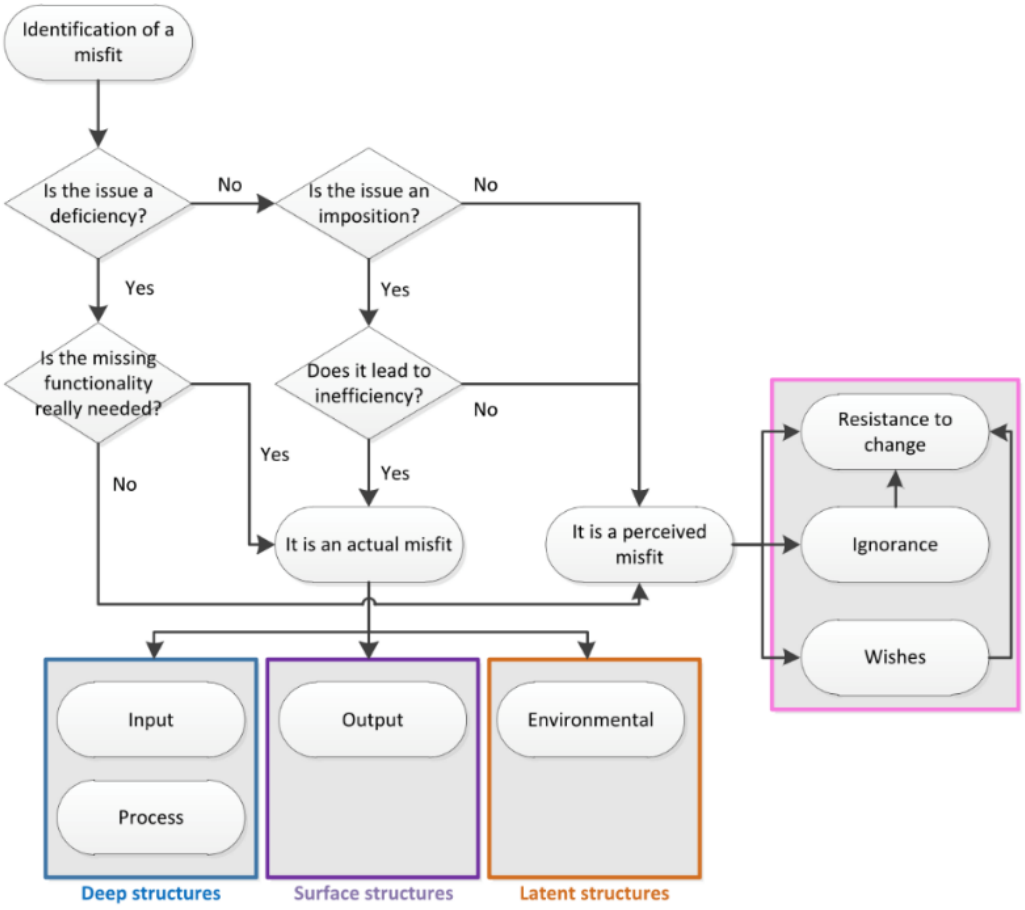

Figure 3 - Misfit flowchart (van Beijsterveld & van Groenendaal, 2016)

Before the framework can be applied, different resolution strategies can be used to resolve the actual misfits. According to Soh et al. (2000; 2003), there are four solutions to deal with a misfit, which are: customization, changing the organizational structures to adapt to the structure of the system, accepting the deficiency in the system's functionalities, and creating a workaround.

2.3.2 Misfit Analytical Framework (MAF)

In figure 4, van Beijsterveld and van Groenendaal (2016) created a model that is based on the misfit framework of Yen et al. (2011) with the typologies of Sia & Soh (2007) and Strong & Volkoff (2010). Within the deep structure, input data and process misfits can be distinguished. Input data misfit refers to issues that arise when the system cannot capture different object attributes or documents into a database (Yen et al., 2011). When the system fails to collect required object attributes as input data, the quality of input data decreases (e.g., a group of materials that are almost the same, is bundled under a single identifier). As a result, the material

in the bundled data is not visible to users because the different materials in the systems are not differentiated (poor data visibility). In the end, data stored in the system is inaccurate, and the information is not useful for further information processing (poor data accuracy). Process misfit describes the misalignment of the system's functionality and the business' requirements (Yen et al., 2011).

Within the surface structure, output data misfits can be distinguished. Output data misfit is related to issues with the system's interface, views, and reports generated by the system, such as providing the wrong format or data organization, and displaying unnecessary data (Yen et al., 2011).

Lastly, within the latent structure, all misfits related to the environment can be distinguished. System environment misfit *"involves the quality of ERP systems in the general information system context, such as security features, backup capability, reliability and flexibility"* (Yen et al., 2011, p.65).

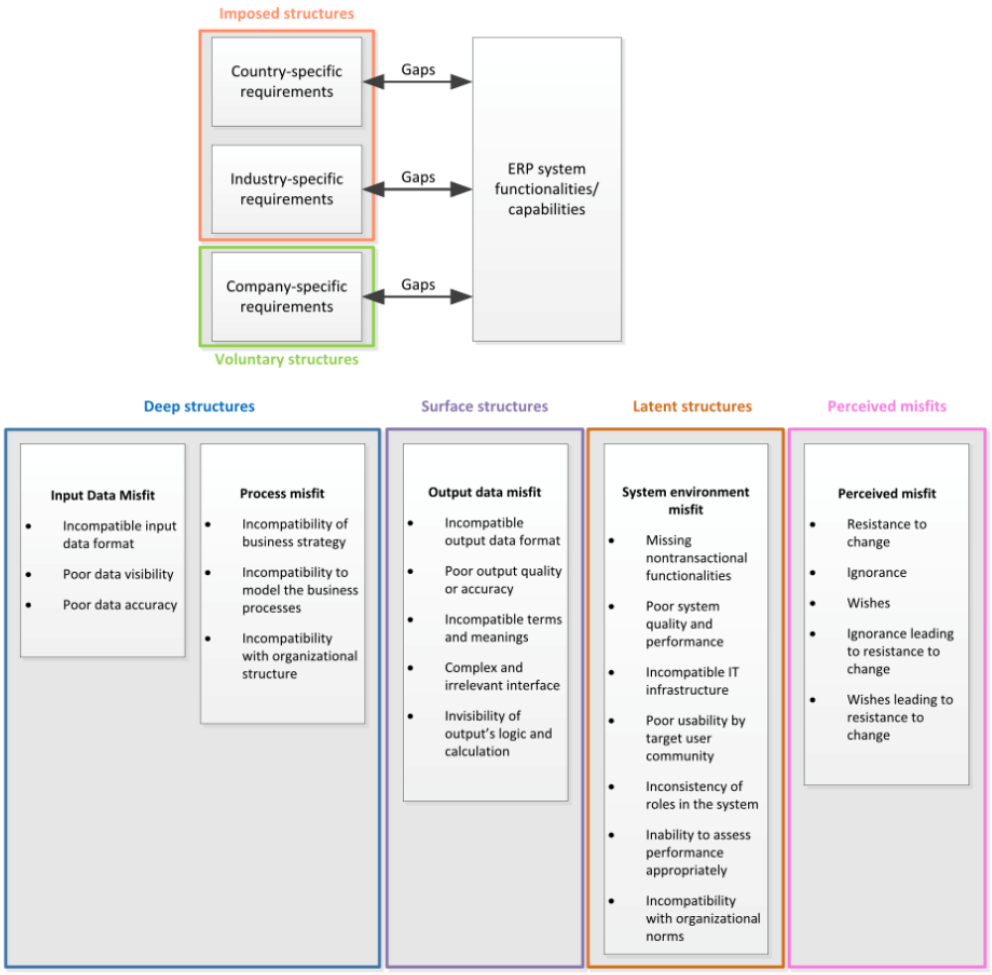

Figure 4 - The Misfit Analytical Framework (van Beijsterveld & van Groenendaal, 2016)

Van Beijsterveld and van Groenendaal (2016) found that actual misfits and deep structured misfits are mainly solved by customization. Most misfits occur in the deep structure of the system (59%), followed by surface structure misfits (34%) and latent structure misfits (7%). The deep structured misfits are mainly solved by customization (65%). The surface structure misfits are mainly solved by customization (46%) and accepting the misfit (40%). Misfits in the latent structure are mainly resolved by creating a workaround (67%). These results are based on cases from small and medium enterprises. Based on the results where the organizations mainly chose customization as resolution strategy, van Beijsterveld and van Groenendaal (2016) concluded that the SMEs rather keep their 'unique' way of doing business than change their way of doing business for a system.

2.4 Customization

Customization is a term that has different definitions in the literature. Some researchers use customization as an overarching term for tailoring enterprise systems (Ali et al., 2019; Parthasarathy & Daneva, 2014; Singh & Pekkola, 2021), while other researchers see customization as one of the tailoring approaches itself (Sun et al., 2008). Sun et al. (2008) defined customization as changing the source code to create functionalities. Singh and Pekkola (2021) are one of the researchers that see customization as an overarching concept. They define customization as the ability and practice of providing clients with solutions that meet the needs of their requirements. They mentioned three types of customizations: configuration, extension, and modification. However, Ali et al. (2019) named six types of customization: composition, configuration, extension, integration, modification, and personalization. These six customization types with their definition are defined in table 2.

Table 2 - Customization types and definition (based on Ali et al. (2019))

Customization type	Definition
Personalization	Techniques and solutions that are initiated by the application and provide transparent customization without the need to inform the users.
Configuration	Techniques and solutions that offer a pre-defined setting for the alteration of application functions within the pre-defined scope.
Composition	Techniques and solutions that bring together a distinct collection of pre-defined application components that jointly amount to a custom solution.
Extension	Techniques and solutions that expand the functionality of the application by inserting the custom code at a pre-defined place in the application's code.
Modification	Techniques and solutions that alter the application design and other functional requirements of the application by means of alterations implemented to the source code.
Integration	Techniques and solutions that implement third-party components designed to work with the application.

The definition Sun et al. (2008) give for customization, is the same as how Ali et al. (2019) named modification. In this research, the types and definitions provided by Ali et al. (2019) will be used since it gives a holistic view on customization by making distinctions between different customization types. In addition, the definition of customization given by Ali et al. (2019) matches the problem of this research. Therefore, Ali et al.'s (2019) definition of customization and the corresponding types and definitions will be used.

2.4.1 Most used customization types

Ali et al.'s research (2019) aims to help with the development and assessment of SaaS customization solutions like CRM systems. They explored which customization types are used the most based on selected primary studies (SPSs). The result of this study is shown in figure 5. The majority (64) of the selected primary studies choose configuration, followed by composition (34) and extension (20).

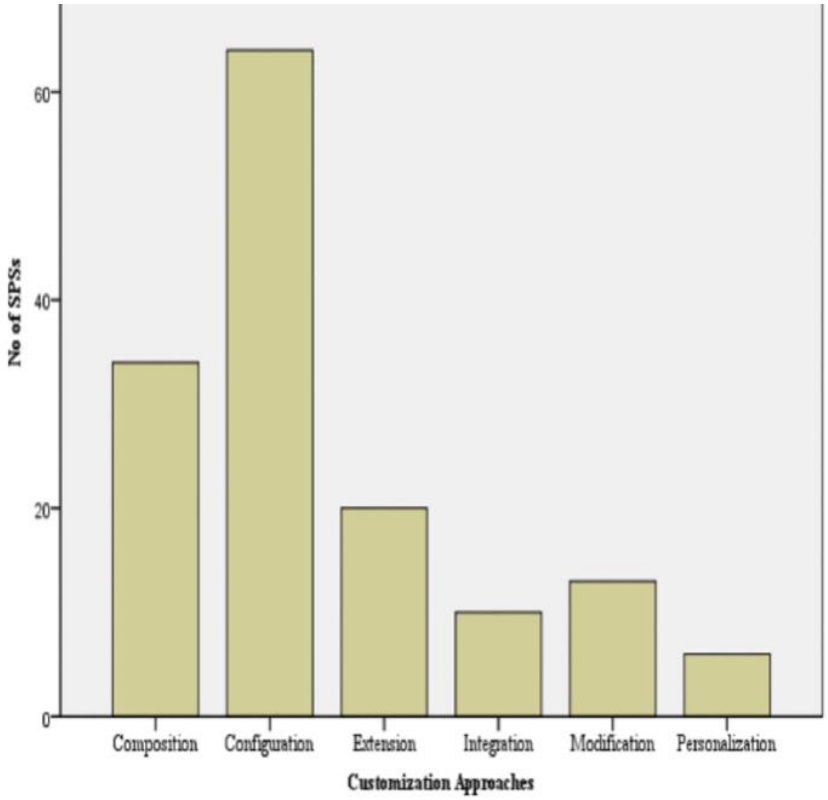

Figure 5 - Distribution of customization types (based on Ali et al. (2019))

Singh and Pekkola (2021) stated that configuration and extension are the most chosen customization types. From Ali et al.'s (2019) research, configuration, composition, and extension are the most chosen customization types to solve misfits. Furthermore, the consultancy company where this research takes place, is faced with the dilemma to exercise configuration or extension when implementing the CRM system. Therefore, the researcher only focuses on configuration and extension in this research.

2.4.2 Extension and configuration

The only distinction that is made for customization in the literature is the distinction between configuration and modification. When the literature talks about the distinctions in customization approaches, it is often about the distinction between configuration and customization, where customization is seen as adding a new functionality by changing the system's source code (Ali et al., 2018; Mijač et al., 2013; Sun et al., 2008), which is called modification. Configuration is seen as an easy customization type, and modification is seen as the most complicated customization type. The literature barely covers the elements and characteristics of the other types in between, such as extension. However, Ziani (2014) stated

that a key success of software as a service (SaaS), is configuration and extension. It allows the client to customize their needs in pre-defined options without changing the system's source code. Especially when it is a CRM software. Most CRM vendors provide powerful customizing features through configuration tools. That is because CRM is a service with relatively little function complexity (Sun et al., 2008). If the client has many complex customization requirements, there is a bigger chance that it cannot be managed effectively in the system. The differences, advantages, and disadvantages of both extension and configuration are described in the following paragraphs.

Researchers prefer configuration rather than extension as customization approach (Brehm et al., 2001). Extension is more expensive than configuration. To apply extension, people with higher, more technical skills are required (Sun et al., 2008). Not everyone has the skill to apply custom code to expand the application's functionality. Moreover, additional programming causes additional costs (Kurbel, 2013). Extension is also more complex than configuration. All custom code needs to be managed by the vendors for every client (Sun et al., 2008). Since custom code needs to be developed, tested, and debugged, it also lengthens the lifecycle.

Another point to mention is the maintainability of the system. A customization effort will require more maintenance and post-implementation work when it is more complicated (Brehm et al., 2001; Sun et al., 2008). When there is a software update, the custom code may get lost or needs to be updated (Sun et al., 2008). This is because the company's extensions are not automatically included in the vendor's system and are not part of the standard software (Kurbel, 2013). While with configuration, parameters set during configuration will not be affected, which means that the configurations will not be lost or not have to be set all over again (Brehm et al., 2001). That is because the parameters set during configuration come from the vendor.

Some CRM vendors provide separate packages that are tightly integrated with the CRM system to expand capabilities. Therefore, heavy customizations prohibit an enterprise from utilizing these features or lead to time-consuming and expensive implementation of specific interfaces (Brehm et al., 2001). Therefore, configuration needs to take place as much as possible to meet the customer's requirement, and extension should be avoided whenever possible. The configurable limit should be increased to stay close to the customer's unique needs (Sun et al., 2008). Table 3 lists the pros and cons of both extension and configuration.

Table 3 - Pros and cons extension and configuration

	Pros	Cons
Extension	• No limitations • Fulfill the client's requirements more effectively	• Expensive • Complex • Longer lifecycle • Need more skilled employees
Configuration	• Maintainable • Simple • Easy to learn for anybody	• Limited • Slower performance when the volume of data is high

2.5 Customization in different layers

Customization can take place at different layers of an enterprise system. Different researchers made different distinctions between enterprise system layers. While van Beijsterveld and van Groenendaal (2016) made a distinction between deep structure, surface structure, and latent structure, Ziani (2014) made a distinction between a user interface layer, workflow layer, and access control layer. However, Ali et al. (2019) made a distinction between four customization layers, namely: user interface layer, workflow layer, service layer, and data layer, which is based on the service-oriented architecture (SOA). Sun et al. (2008) look at the different perspectives of the enterprise system requirements. Every SaaS client may have requirements from many different perspectives. The perspectives in which Sun et al. (2008) made a distinction, are data, User Interface (UI), organization structure, processing logic, workflow, and business rules.

The researchers use different names for the layers while having the same definition. Table 4 shows the different layers with their definition based on the distinctions made by the researchers mentioned above.

Table 4 - Enterprise system layers and definition

Enterprise system layer	Definition
Deep structure	Contains the business logic and the data input.
Latent structure	The quality of the system regarding security features, backup capability, reliability, and flexibility.
User interface/surface structure	The look and feel of the system, and how the user interacts with the system.
Workflow/process	Contains the business logic which is unique to the organization. Responsible for processing associated supported applications.
Data	Responsible for managing the data and data model.
Access control (business rules)	Defines the roles and accessibility for each user. The account type and the resources accessible in the system depend on the employee's role within the organization.
Organizational structure	Add, change, and delete roles and entities.

2.6 Research gap and contribution

Out of this literature review, there are several gaps and limitations of previous studies. First, there is a lack of research on CRM implementation misfits and research on how to solve the misfits. Van Beijsterveld and van Groenendaal (2016) did research on solving ERP implementation misfits. Their study found that the deep structure misfits and surface structure misfits are mainly solved by customization. This consists of input, process, and output data misfits. However, different researchers, like Ali et al. (2019), have stated that there are several customization types. Van Beijsterveld and van Groenendaal (2016) did not distinguish between the various types of customization in their research, so it is unclear what customization approach (extension or configuration) is used to solve the different types of misfits.

Second, there is a lack of research on CRM frameworks and related strategies. Existing frameworks and strategies mainly discuss organizational performance, an organizational-centric view, and successful CRM implementation as a whole package. However, this research focuses on one of the success factors for a successful CRM implementation: the alignment between the CRM system and the organization.

Finally, there is a scarcity of research on the CRM domain that focuses on CRM implementation misfits (the alignment between business and IT). This research further contributes to the body of literature that is already available in the area of CRM implementations. This research also closes the gap between the misfits and the (customization) approaches available to resolve them misfits.

Therefore, the gap in the literature suggests that there is a need for a CRM implementation misfit framework that dives deeper into the customization approaches. This research aims to gain insight into the misfits of CRM implementations in large enterprises and how the misfits can best be solved. Understanding the misfits in CRM implementations and having insight into the various customization approaches to resolve the misfits will help stakeholders decide how to resolve particular misfits in certain situations.

3. Methodology

This chapter describes the context in which the research takes place and the methodology used in this research. To answer the research question with reliability and validity, a suitable research method needs to be chosen. Chapter 3.1 describes the context in which the research takes place. Then, chapter 3.2 describes the data collection process. After the data collection process, chapter 3.3 describes how the collected data is analyzed. Finally, in chapter 3.4, the data quality will be discussed.

3.1 Research context

This research is conducted at an international IT consultancy company in the CRM department. The company is called Avanade and is partner with Microsoft (MS). Avanade offers solutions to other businesses using Microsoft technologies. For the CRM department, the main technologies that are used, are MS Dynamics 365 and MS Power Platform. For referring to MS Dynamics 365 CRM system, the terms MS Dynamics and MS CRM system will be used interchangeably.

In the case study that will be conducted, the researcher focuses on the MS Dynamics 365 CRM system. The CRM system is a multidimensional platform that stores all the information necessary to develop, improve, and retain customer relationships (Microsoft). MS CRM system has different units. It can be used for marketing, sales, customer service, field service, and project service automation. The consultancy company provides all these services to their clients, depending on their needs. These services fit into the definition of CRM that is given by the literature (Hadi, 2015). The CRM sales tool, for example, supports the sales cycle by generating analytics and reports. These solutions aggregate reports and analytics to provide organizations with the ability to act based on customer data (Microsoft). Furthermore, the MS CRM system is also an operational and collaborative CRM system because of the marketing, customer service, field service, and project/service automation tools.

By implementing MS Dynamics, MS Power Platform plays a significant role. MS Power Platform is a Service on which MS Dynamics is built. Within Power Platform, it is possible to create functionalities to expand the MS CRM system using low-code/no-code solutions. By implementing MS Dynamics and using Power Platform, some functionalities within MS

Dynamics and Power Platform can be built using configuration (no code). Still, it is also possible to build it with extension (extra code).

The company usually uses extension when the functionalities cannot be built with configuration. Typically, the functionality is specific to the business and needs to be personalized. When they use extension, they add a few lines of code to the system or out-of-the-box functionality. The consultancy company where this research takes place, is faced with the dilemma of using configuration or extension when implementing MS Dynamics. Ali et al.'s (2019) definition of configuration corresponds to the company's definition given in the introduction. The second type that the company is facing, is extension. Even though the company named the extension type differently than Ali et al. (2019), namely customization, they both mean the same. The company defines customization as using custom code to expand the functionality in the system, and so does Ali et al. (2019) with extension. However, only during the interviews, the concept 'customization' is used instead of 'extension' since it is the company's definition of extension.

3.2 Data collection

For this research, data is collected in different ways and therefore consists of several parts. This sub-chapter describes the several parts of this research, in which ways data is collected, and how data is collected.

Literature review. First, the literature review is the theoretical part of this research. For the theoretical part, a thorough literature search was carried out to identify relevant theories and ideas related to the subject of this research. The literature review was an ongoing activity throughout the whole research. In total, 63 articles were included in the literature review. The selected literature is primarily found in the databases and journals, as provided in table 5. Table 5 also lists most of the keywords that were used to find relevant articles.

Table 5 - Databases and journals

Databases
Scopus • IEEE Xplore • JSTOR • Emerald Insight • Springer Link • ResearchGate • AIS eLibrary • Sage journals • Wiley Online Library • Informs PubsOnline • ScienceDirect • ProQuest • Taylor & Francis Online • ACM digital library
Journals
IEEE Access • MIS Quarterly • European Journal of Information Systems • Journal of Enterprise Information Management • Journal of Management Information Systems • Journal of Global Information Management • Information Systems Research • European Management Journal • International Journal of Business and Management • Information System Journal • International Journal of Computer Science, Engineering and Information Technology • International Journal of Accounting and Information Management • Journal of Small Business Management • Management Science
Keywords for literature search
Enterprise systems • System implementation • ERP and CRM implementations • CRM implementations • Enterprise system implementation in SMEs and LEs • Implementation misfits • Business and IT misalignment • Implementation tailoring approaches • Customization in enterprise systems • Configuration versus customization • Customization • • Configuration • Extension • Large enterprises characteristics • Software as a Service layers • SMEs and LEs characteristics in system implementation

The literature review has contributed to a better understanding of existing literature on CRM implementations. It has also revealed gaps in former research within the CRM domain and identified new research opportunities. In the end, the literature review has contributed to the research framework in figure 8.

Pilot interviews. The second part of the research aimed to better understand the distinction between configuration and extension, the advantages and disadvantages, and the factors to consider when deciding to use configuration or extension in CRM implementations. This was done by conducting pilot interviews with consultants experienced in implementing CRM systems. The pilot interviews contributed to this research by providing background information

about configuration and extension in practice, so the researcher could better prepare for the case study interviews. The interviews lasted approximately 15 minutes each and were conducted on 15 and 17 November 2022.

The results from the pilot interviews are consistent with what is stated in chapter 2.4.2. From the pilot interviews, it can be concluded that configuration is preferred over extension. There are several reasons for it. First, extension is more expensive than configuration. To use extension, technical people are needed. Within the company, there are relatively few technical people, compared to functional people.

Second, extension is harder to maintain. When Microsoft performs an update, the functionalities built with extension will not be updated either. It can even happen that the extension no longer works after an update because the system no longer supports it. Configuration, on the other hand, is simple and easy to maintain. It is easy to learn. However, in terms of performance, extension often works better than configuration. Suppose you are performing a configuration. The configurations are usually quite slow in processing data. So, if you make a call, it might take a minute to create something in the system, while it might take 30 seconds to write it with code. When you also start working with large volumes, it suddenly makes much difference to use either extension or configuration.

Case interviews. Finally, the last part of this research is the empirical part. The empirical part of this research consists of a multiple case study of four large enterprises (following the definition as stated in chapter 1) that are clients of the consultancy company. The reason to conduct the study at four companies, is because this number is seen to give adequate empirical support for theory development (Eisenhardt, 1989). The criteria for the companies are that they have already implemented the CRM system and have more than 250 employees.

According to Recker (2013), conducting interviews is a common method for gathering qualitative data. It is more effective at extracting narrative data that enables researchers to examine people's point of view more thoroughly (Alshenqeeti, 2014). Therefore, data is collected by conducting semi-structured interviews and collecting documentation related to the implementation. In total, seven interviews were performed with individuals from four different companies. Table 6 shows which types of companies were interviewed.

Table 6 - General case description

Industry	Financial institution, telecommunication provider, manufacturer, construction company
Number of employees	>250
Interviewees	Internal: Product owner, key user External: Consultant/project leader
Reports	Requirements document, functional documents

3.2.1 Case study participants

To increase validity, data triangulation is applied for each case by interviewing multiple employees with different roles during the CRM implementation (Guion, 2002). This contributed to gaining valuable insights from different perspectives. The criteria for the participants were that they have participated in the CRM implementation project. These participants know the most about the CRM implementation process from beginning to end and everything that comes with it, which increases the reliability (Recker, 2013). The initial plan was also to interview key users because key users are the ones that need to work with the implemented system eventually. Therefore, it is also relevant to collect data from their point of view. Unfortunately, it was not possible to conduct the interviews with key users. Table 7 lists the companies with the participants and their functions.

Table 7 - Overview research participants information

ID	Industry	Com-pany	Position	Years of exp-erience	Number of em-ployees +/-	Number of users +/-	Inter-view duration	Date of interview
P1	Financial institution	A	Product owner	6	47.000	300	41:31	02-12-2022
P2	Financial institution	A	Technical consultant	4-5	47.000	300	45:15	24-11-2022
P3	Telecom. provider	B	Product owner	14	10.000	255	33:36	09-12-2022
P4	Telecom. provider	B	Functional consultant	5	10.000	255	53:43	06-12-2022
P5	Manufac-turer	C	Product owner	>11	6.000	1.300	35:52	12-12-2022
P6	Manufac-turer	C	Functional consultant	3	6.000	1.300	27:41	06-12-2022
P7	Construc-tion company	D	Functional consultant	1	16.000	800	37:10	07-12-2022

3.2.2 Interview process

Before conducting the interviews, the researcher looked for companies with more than 250 employees that have implemented the Dynamics CRM system. When the product owner and the consultant were willing to participate in the interview, the research provided the participants with background information about the research and interview. During these steps, the researcher also started devising and formulating interview questions. After completing the questionnaire, a pilot case study interview was conducted.

The pilot case study interview was conducted to evaluate the case study interview procedure. As a result, before asking concept-related questions such as misfits, configuration, and extension during the interview, the interviewer first gives an explanation about the different concepts. Figure 6 shows the process prior to the interviews. The devised questions served as the standard for all interviews to compare the answers between the participants during the data analysis phase. The interview protocol can be found in appendix A.

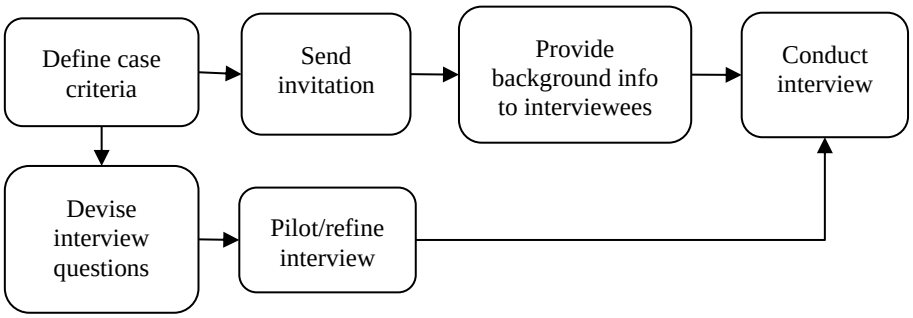

Figure 6 - Pre-interview process

Before conducting the interview, an introduction to the candidate was given. The aim and structure of the interview were discussed, and it was clearly emphasized that the participants had complete anonymity and that confidential information would be excluded from this study. Additionally, the interviewer asked the interviewee for permission to record the interview for transcribing. The interviewer also mentioned that the recording would be deleted afterward and that it would only be used to transcribe the interview.

The interview consisted of several parts. First, the interviewer asked general questions about the interviewee, the company, and the project. After the general questions and the company's case description, the interviewer explained concepts such as misfit, configuration, and extension so that questions about these concepts were clear to the interviewee. Additional questions were asked when clarity/more specific answers were needed or when the interviewee addressed some relevant points that the researcher did not think of beforehand.

After the questions, a summary of the transcript was sent to the interviewees for feedback and confirmation to avoid any misinterpretation. Furthermore, during the interviews, the researcher followed the definition given by the company. As a result, the researcher used the word 'customization' instead of 'extension' during the interviews. In addition to the interviews, one of the seven interviews was held in person, and all the other interviews were taken online via MS Teams. For each interview, 60 minutes were scheduled to avoid rushing during the interviews. All interviews lasted approximately 45 minutes and were recorded with a mobile phone. The interview process is shown in figure 7.

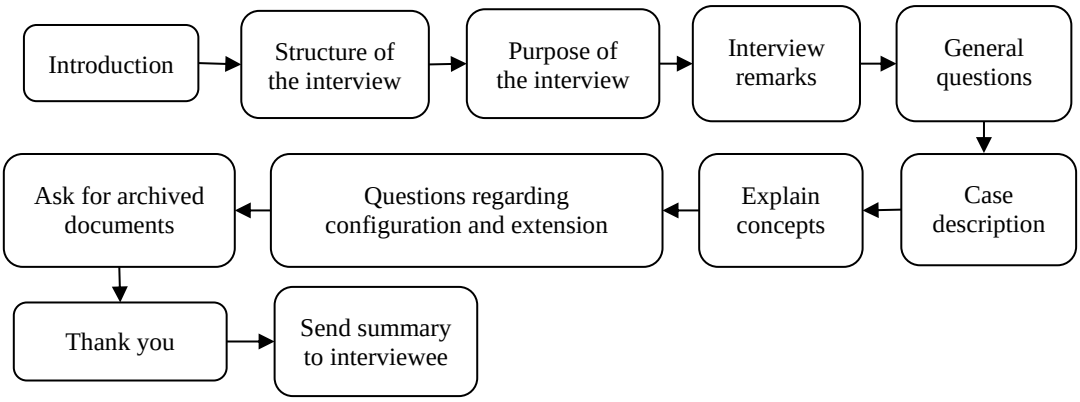

Figure 7 - Interview process

3.2.3 Archived documents

According to Bowen (2009), document analysis is frequently combined with other qualitative research techniques. It is a method that helps to draw out meaning and to understand and develop empirical knowledge. Adding this method, data triangulation is created.

Document analysis from archived documents was used in this research to provide the researcher with supplementary research data. The data collected from the documents were valuable additions to the interviews. During the interviews, the interviewees did not remember every misfit they ran into. The documents then provided valuable data to make the final answer more complete. An overview of the documents for each company that was analyzed and used is provided in table 8. The documents were obtained by asking for them during the interviews.

Table 8 - Archived documents

Company	Documents
A	Functional draft
B	User stories/requirements document
C	Functional document
D	Functional document

3.3 Data analysis: Coding process

The data analysis stage in qualitative research contains a sheer volume of data that needs to be analyzed. It is often unclear which parts are relevant to the final outcome (Recker, 2013). In this research, the process of translating the gathered data into meaningful information began with transcribing the recorded interviews. Due to the potentially confidential information of the participating companies, this was done manually. After transcribing the interviews, a summary of the transcript was sent to the concerned participant so that the participant had the opportunity to adjust points or to add remarks.

After transcribing, the next step was to code the transcriptions. Coding is a method that belongs to the grounded theory (Recker, 2013) which consists of three stages, namely: open coding, axial coding, and selective coding. The coding process was done in Atlas.ti. During the open coding stage, the transcripts were continuously compared to seek for similarities and differences. Not only were the transcripts coded, but also the archived documents. For the interviews, codes were assigned to text fragments. For the archived documents, codes were assigned to the relevant data. The second stage was axial coding. In this phase, the assigned codes were compared with each other. The codes that belonged together were merged under one overarching code. Based on the codes, a theory is built by classifying the codes into categories and establishing relationships and connections between the data. The outcome of the data analysis can be found in figure 8.

3.4 Data quality

According to Yin (2009), the quality of research designs can be assessed with four criteria, which are: reliability, construct validity, internal validity, and external validity.

Reliability

Reliability in qualitative research is the level of consistency between a (group of) variables concerning the goal of the measurement (Recker, 2013). It is about whether the outcome is the same when the same construct is measured multiple times. Alshenqeeti (2014) discusses how conducting interviews has poor reliability due to exposure to different types of biases, such as the researcher's subjectivity. However, with qualitative research, a less subjective data collection approach like questionnaires is not suitable for answering the research questions.

By choosing a qualitative research approach, the data collected in this study is inclined to be unreliable because each participant's answer is based on the participant themselves. To maintain reliability, leading questions were avoided, a pilot interview was conducted, and interviewees' answers were not scripted and required improvisation, flexibility, and openness to interpretation. In addition, to guarantee reliability in this research, multiple participants per case were asked to participate in the interview. Despite the different roles of the participants, the questions asked in the interview remained the same. Within every case and between the cases, the results were mostly the same, which increases each case's reliability. To further increase the reliability of this study, all interviews were recorded and transcribed. The transcripts are available upon request to maintain a chain of evidence.

Construct and internal validity

Internal validity is the degree to how closely a study measures what it is supposed to measure (Alshenqeeti, 2014). To increase the internal validity of this research, data triangulation was applied. This was done by gathering data through academic literature, conducting pilot interviews and expert interviews, and document analysis. In addition, the participants checked the interpretations of the results from the data analysis, which increases the construct validity of the findings (Curtin & Fossey, 2007; Recker, 2013).

External validity

External validity is the extent to which the findings of a study can be generalized to other settings or cases (Recker, 2013). There are some limitations in this qualitative study regarding external validity. First, this study takes place at a consultancy firm that only implements Microsoft technologies at other companies. As a result, the findings of this research cannot be generalized among all companies that went/are going through a CRM implementation. The findings only apply to companies that have implemented the Microsoft CRM system. Second, this study focuses on large enterprises. Therefore, it cannot be concluded that the findings also apply to SMEs. Lastly, because of the small amount of time available for this research, the number of interviews conducted is relatively small. More misfits could have been discovered if there was time to conduct more interviews. However, to increase reliability, the researcher used random sampling to obtain a representative sample so that the results could at least be generalized to large enterprises that have implemented Microsoft CRM.

4. Results

In this chapter, the case study results are described. This chapter is divided into the different misfits found in the data analysis. A brief explanation of each misfit is given, followed by examples from the gathered data.

4.1 Latent structure misfit

Latent structure misfit is described as misfits that are related to the system environment. It is about the system's quality, such as security features, reliability, and backup capability (Yen et al., 2011). The latent structure misfit occurs in case A and B.

4.1.1 Application maintainability issues

The first misfit, in terms of latent structure misfit, is the lack of infrastructure in Power Platform to support the development process of the applications. Company A wants to provide Power Platform to all employees. In this way, employees from company A can build small applications to automate simple tasks and processes in their own department. When building an application, it is common to maintain the application so that the application can be modified to correct errors, improve features, or adapt to a changed situation. However, this application lifecycle management (ALM) is not included in Power Platform, although it is a key component for company A. Especially because it is not about building one application, but multiple applications. This is mentioned during the interview with the product owner of company A:

" What we also wanted, for example, is that you can manage your created app. You do not want a developer playing with the data in the new application update in the production environment…That ALM trajectory was not there within Power Platform." (Product owner, company A)

The issue of application maintainability can be solved by extension, specifically by adding infrastructure to the system. Company A created an environment called DTAP (Develop, Test, Accept, and Production. First, the developer develops the application in the development environment, and then the developed application will be published. After publishing the application, the application will be tested with a number of testers and test data, after which the application goes to the acceptance phase. In the acceptance environment, the production-

oriented data is located, and the application is tested again, but this time to verify if it meets the expectations. Finally, the application can be moved to production and go live. Since this application maintainability component is not available in Power Platform, the DTAP environment is built with extension.

"A huge part of the ALM process is built with extension…They often call this DTAP (Develop, Test, Accept, Production) where you have a number of levels before you go live with the application". (Product owner, company A)

4.1.2 Security issues

The second misfit, in terms of latent structure misfit, is the security issues. Systems within a company must comply with the organization's security standards to prevent infiltration from outsiders and hackers. The security requirements are different in every company. One company can be stricter than another company. The security issues occur in case A and B. For company A, it was necessary that the implemented system met the company's security compliance requirements and data leakage prevention. This was mentioned during the interview:

"It is one thing to turn on the database. But it must comply with the data leakage prevention settings, for example." (Product owner, company A)

For company B, it was necessary that the implemented system was in line with the GDPR since the company has quite a few legacy systems on its network.

"You also have to comply with important laws and regulations such as the GDPR and the standard security policies of the company." (Product owner, company B)

The security issues are solved with extension. Configuration is not an option since each company has its own security protocol. A system's standard settings do not fully meet all security requirements. In company A and B, extension is used by setting up the system in such a way that it is in line with the security compliance requirements and the GDPR. This can be supported by the following two quotes from the interviews:

"So, if you go to another financial institution, they will have similar requirements. But how you set it up in the system is up to the organization." (Product owner, company A)

"Our security policy is different from other companies. No security policy is the same." (Product owner, company B)

4.2 User interface misfit

User interface misfit refers to the system's look and how the user interacts with the system. During the case studies, case B, C and D were faced with the user interface misfit. Three misfits related to the user interface were identified.

4.2.1 Unclear categorization and prioritization

The first misfit is that there is an unclear categorization and prioritization. This misfit concerns the unclear overview of tasks that need to be completed and unclear categories that exist within a process, which was the case in company B. It was not clear which tasks should be completed first because it was not immediately visible in the system. Moreover, it was not immediately visible which category a specific case belonged to. One example is given in the following quotation:

"Suppose something needs to be connected in your house; this is recorded within CRM. They work with two different networks. You can see which network a case belonged to in the system, but that was not immediately visible." (Functional consultant, company B)

The unclear categorization and prioritization are solved with extension by adding code to the different categories. Prioritizing tasks can also be seen as categorizing various tasks, so both categorization and prioritization can be solved using the same solution. To clearly visualize the different categories and prioritize different tasks, company B made it possible to assign colors to different categories. The functionality to be able to apply different colors was done with extension. Some lines of code were added to the system to make this possible. If categories were only created with configuration, the users would only see plain text like "high", "medium" and "low". By adding custom code, the categories can have a color, making it easier to see the prioritizations and categorizations. In the interview, the functional consultant mentioned it as well:

"They also want to work with priorities. So, if something has a high priority, they want it to be red. By default, with out-of-the-box functionalities, it is not possible to specify those

colors…Then you would have to work with plain text "high", "medium" and "low" without the colors." (Functional consultant, company B)

4.2.2 Unclear overview of phases

The second misfit regarding the user interface misfit, is an unclear overview of phases within a process. Processes often consist of multiple steps. This misfit is about the lack of clarity on which step a specific case is in the process. This misfit is identified in company B and D. Regarding business processes, there is an option to configure workflows in Dynamics to go from one stage to another. However, this does not represent the workflow graphically.

"So, the installation of X follows a number of steps that are not being recorded…which means that you can only show with text: Hey, this case is now on phase 1." (Functional consultant, company B)

The unclear overview of phases is solved with extension by adding code to the workflow configuration from Dynamics. In both cases, it is solved in the same way. With an overview of the phases where a case belongs, the companies can gain insight into certain Key Performance Indicators (KPIs), such as how long a case has been in a certain stage and why it takes so long. To get a clear overview of which phase a certain case is, company B and D used colors, created a timeline, and used the Dynamics business process flow to visualize it. For using colors and creating a timeline, custom code was needed, which is supported by the functional consultants from company B and D:

"The idea is to make a graphical representation through a business process flow so that you move on to the next phase and that you graphically show in which phase a client is...eventually, this is done with code." (Functional consultant, company B)

"…but instead of a standard business process flow that we could have set up, we also went for a custom component that made a timeline for the user to see where the user is in his process visually. That was an essential component of the app." (Functional consultant, company D)

4.2.3 Lack of function within a form

The last misfit related to the user interface misfit, is the lack of function within a form. For each case/customer, there is a form in Dynamics. The form contains information about the

specific case/customer. It also contains functions that can perform certain tasks or trigger actions. However, there are some functions that a company wants to have to execute some actions for specific cases/customers, but that are not available within the form. This misfit is identified in company C. Company C implemented the CRM system and has eight operating companies in different countries that use the system. The data model that they use, is the same in all countries, but not all fields are mandatory in every country. The functionality to hide or show certain fields is missing for company C. This makes it more difficult for the company to read or modify a form because it contains unnecessary fields and information that do not apply to all operating companies.

"What you do see is that we have the same data model in the different countries, while there are differences in the extent to which some fields are required depending on the operating company." (Functional consultant, company C)

Another functionality that company C needed, was simplifying certain inputs within a form to improve the ease of use of the system. All fields within the form had to be filled in manually, but that did not improve the system's ease of use. Company C gave two examples to solve this misfit, which will be discussed in the following paragraphs.

To solve the lack of function within a form, extension is used by adding code to the system. Adding code to the system can create functionalities that do not initially exist. Company C made a functionality where the user can decide to show, hide, or activate a specific functionality or field within a form based on the operating company.

"Specifically, for the forms, we have the functionality to hide and show fields, the possibility to make fields mandatory or not. So, the country could decide whether they want to run a specific logic within a form." (Product owner, company C)

In addition, code was also added to simplify certain inputs to improve the ease of use. Company C created a functionality to automatically fill in certain fields based on the input of another field. The two examples that the functional consultant gave, were:

"…when I create a certain account, you know which region I belong to, based on the zip code. And then the system automatically fills in the correct region with the correct account manager" (Functional consultant, company C)

"…if you select a country, the prefix of the telephone number will automatically appear so that they do not have to think for themselves which prefix number belongs to a certain country." (Functional consultant, Company C)

4.3 Process logic misfit

Process logic misfit is about the organization's unique logic that does not match the implemented system. This misfit occurs in all cases, which is not surprising since every company has its own business process. There are two misfits identified related to the process logic misfit.

4.3.1 Unclear business processes

The first misfit related to the process logic misfit, is unclear business processes. A company runs on multiple business processes. Therefore, modeling business processes is indispensable in enterprise systems. In the four cases where the research was conducted, all processes from the companies did not match with the system right away. As a result, the order of each step of the process had to be customized in the system.

To create clear business processes in the system, configuration was used by all four companies. The business processes were configured by using Microsoft's business process flow for modeling business processes. With this, the basic steps in a process were generated. The functional consultant from company B confirms this:

"You have a business process flow in Dynamics365. This allows you to work on a case level. Suppose a case has four steps. Then you start with the first step. Before going to the next step, you must fill in certain fields. Once you have completed those fields, you will move on to the next stage." (Functional consultant, company B)

4.3.2 Lack of process specific activities

The second misfit regarding the process logic misfit, is the lack of process specific activities. As described in chapter 4.3.1, modeling business processes is done with configuration. However, it only models the basic steps of a process. Most of the time, the same kind of processes differ in some kind of way from each other. Every company has its own way of

completing a process, even if the processes are similar to each other. These specific activities within a process are not provided by Microsoft.

"Depends on the complexity of the process." (Product owner, company C)

For company A, C, and D, the business process flow provided by Microsoft was not sufficient to cover their whole business process.

"…that had to do with certain business processes that could not be adjusted." (Functional consultant, company D)

To solve the lack of process specific activities, both configuration and customization can be used by adding condition rules to the workflows in Dynamics. Condition rules are essential in business processes. It ensures that users are not allowed to perform certain steps before previous steps are completed. Condition rules also prevent errors in the system and organization because there is a clear order of steps to complete a process. It makes the process less chaotic. Company A, C, and D created some condition rules. Company A wanted some rules in certain processes that prevent users from going to the next step before the previous step has been finished. This was done using configuration.

"Something that has also been done with configuration, is that an environment can only be created if the owner that makes the request has also requested security groups in the financial institution." (Technical consultant, company A)

Company C and D also added condition rules that prevent users from going to the next step before the previous step has been finished. However, company C and D used extension to create this condition rule:

"…here they have described a very custom process based on the fact that a sales user is guided through the entire process with all the checks and balances attached to it. Customizations have also been added to guide that process." (Functional consultant, company C)

"Our app was much more custom and complicated, so certain things just had to be built with custom logic." (Functional consultant, company D)

4.4 Access control misfit

The access control misfit is about the roles and rules within an organization that do not match the roles and rules defined in the system. There are two misfits found related to access control. Those are found in case B, C, and D.

4.4.1 No roles defined

The first misfit related to access control, is that initially, no roles are defined in the standard system. Every large enterprise has an organizational structure. Within an organizational structure, employees can only access the information from their own department. This organizational structure should also be implemented in the system that the company uses so that employees only see what they are allowed to see. The misfit that no roles are defined in the system, is identified in company B, C, and D. In all three companies, there were no roles set up in the system that match the roles within the organization.

"Everyone has access to the same form because no job profiles were set up within Company C's CRM. This means that everyone who has access to the system or to a case form sees the same information." (Functional consultant, company B)

To solve the misfit that no roles are defined in the system, configuration can be used by applying roles and entities to the system. Microsoft offers tools to set up roles and entities in a system. For setting up the roles, company B used the Azure active directory to assign roles to each user.

"No, no code needs to be written for that. That was purely linking roles as we defined them in IAM." (Product owner, company B)

Company C and D used the standard Dynamics tooling to describe their specific security roles. With security roles, the company does not create an organizational structure in the system, but the company creates different roles to which certain restrictions are imposed, which are based on the organizational structure.

"…we have described specific security roles in the group template that are different from the standard roles." (Functional consultant, company C)

4.4.2 Insufficient system rules

The second misfit regarding access control, is that the system rules are insufficient. Insufficient system rules mean that all employees have access to all information. This misfit also occurs in company B, C, and D since this misfit has to do with the misfit described in chapter 4.4.1. The system rules in company B were insufficient because users had no roles assigned to them. If there are roles in the system, rules can be applied. Before the roles were assigned to each user, all users could see everything, as mentioned in chapter 4.4.1.

Insufficient system rules can be solved with configuration by using the identity and access management tool from Microsoft. The identity and access management tool can be linked with the Azure active directory. This is what company B has used. In addition, it is also possible to set up specific categories per department/process so that only forms that belong to a certain department/process are visible to that department/process. This solution can also be created with configuration. Setting up specific categories per department/process is what company C and D used for creating system rules. The examples are shown using two quotes from the interview:

"So, for example, if he was doing maintenance on an asset in a certain location, the user also saw a much different process and form in the app compared to, say, a malfunction that he would pick up." (Functional consultant, company D)

"So, everyone can see information based on the security roles." (Product owner, company C)

5. Discussion

In this chapter, the research results are interpreted and summarized, and the framework is shown. First, the misfits solved with extension are described in chapter 5.1. Second, the misfits solved with configuration are described in chapter 5.2. after which a conclusion is given in chapter 5.3, following the framework that is formed based on the results. Finally, an explanation will be given in chapter 5.4 on how this study's findings relate to the existing literature findings.

5.1 Extension

Extension is a customization approach that expands the functionality of an application by using custom code at a pre-defined place in the application's code (Ali et al., 2019). Most of the misfits are solved with extension. However, most interviewees say that configuration is always the number one solution. When solving a misfit with configuration is not possible, they look for options to solve it with extension. Then it is often about business-specific needs that cannot be solved with standard settings from the system or with out-of-the-box functionalities.

Extension can be used for business-specific requirements, which often occur in the latent structure, user interface, and process logic misfits. From the case studies, all misfits related to the latent structure and user interface are solved with extension, and one misfit related to process logic misfit is solved with extension. This can be explained by the fact that the latent structure, user interface, and some of the process logic often have to deal with business-specific requirements from which the company cannot deviate, such as security policies, specific kinds of interfaces, and specific activities within a process. The type of misfit will determine which extension is suitable to use:

Latent structure misfit. Two types of extensions can be used to solve latent structure misfits. First, to solve or to prevent security issues, the company's standard security protocol or GDPR can be set up in the system. Dependent on the specificity, this can be done by adding code to meet the requirements. Second, to tackle maintainability issues when creating multiple applications through Power Platform, an application life cycle management environment can be built using code. The environment can then be used to build and test the applications.

User interface misfit. For solving user interface misfits, four types of extensions can be used. First, colors can be used to visualize categories. It can also be used to make other components

on the screen clearer. Second, to have an overview of where and how long a certain case or customer is in a process, phases can be added to the process by creating a timeline. To tackle the lack of function within a form, several extensions can be used. It depends on what kind of functionality is lacking for the specific company. Two extensions that solved this misfit for the companies that participated in the case study, are creating a functionality to hide or show specific functionalities, and automatically display data based on the input in other data fields.

Process logic misfit. For the process logic misfit, one type of extension can be used for solving the process logic misfit. To align the entire business process with the system, condition rules can be applied. Dependent on how specific these rules are, extension can be used.

5.2 Configuration

Configuration is a customization approach that provides pre-defined settings for how an application performs within the pre-defined scope (Ali et al., 2019). As mentioned earlier, there is a preference for configuration over extension from both researchers and the case study's participants.

Configuration can be used to solve more general business requirements, which often appear in access control misfits, and sometimes in process logic misfits. From the case studies, all misfits related to the access control and process logic, are solved with configuration. For the misfit about the lack of process-specific activities, configuration and extension were used, depending on the case. The reason why access control and process logic misfits can be solved with configuration can be explained by the fact that the system's pre-defined settings were sufficient to fulfill the organizations' needs. When specifically looking at the configurations regarding the alignment of the organizational structure with the system, organizations generally have the same kind of structure, so there are fewer or no specific requirements that the system must meet in terms of user roles and organizational structure. The general division of roles was sufficient to align the companies' organizational structure with the system. As with extension, different configurations have taken place to solve misfits. The type of misfit determines which configuration is suitable to use:

Process control misfit. Two types of configurations can be used to solve the process logic misfits. First, by modeling business processes with the tools that Microsoft provides, the organizational processes can be aligned with the system which solves the misfit of unclear

business processes. Second, condition rules can be applied to align the entire business process with the system. Dependent on how general these rules are, configuration can be used.

Access control misfit. For solving the access control misfit, two types of configurations can be used. First, roles and entities can be applied to the system by using the Azure active directory, or by describing specific security roles per user. This tackles the misfit that there are no roles defined in the system that matches the company's organizational structure. Second, to tackle the insufficient system rules where everyone can see everything, identity and access management can be used, or specific categories per department/process can be set up.

5.3 Framework for solving misfits in CRM implementations

The results and summary show that there are four types of misfits:

- Latent structure misfit, which contains application maintainability issues, and security issues.
- User interface misfit, which contains unclear categorization, unclear overview of phases, and lack of function within a form.
- Process logic misfit, which contains unclear business processes and lack of process specific activities.
- Access control misfit, which contains inconsistent roles in the system and insufficient system rules.

There are several ways to solve the different misfits. Extension can be applied to the latent structure, user interface, and process logic misfit, while configuration can fix misfits on process logic and access control level.

First, using extension by building an application lifecycle management and setting up the system to meet the GDPR or security protocol, the latent structure misfits can be solved.

Second, using extension by visualizing categories and phases within a process using colors and timelines, and by adding functionalities to a form, the user interface misfits can be tackled.

Third, using configuration by modeling business processes with the business process flow tool, and adding condition rules to create process-specific activities within the system, can solve the process logic misfits. Adding condition rules can be done with both extension and configuration, dependent on the level of specificity.

Finally, configuration can solve access control misfits by applying organizational roles and entities and adding access management to the system.

Furthermore, not all misfits are equally common. The latent structure misfit occurred in two cases, the user interface and access control misfit were identified in three cases, and the process logic misfit occurred in all four cases. Figure 8 reveals the framework that is created to show the potential solutions for the different misfits in CRM implementations.

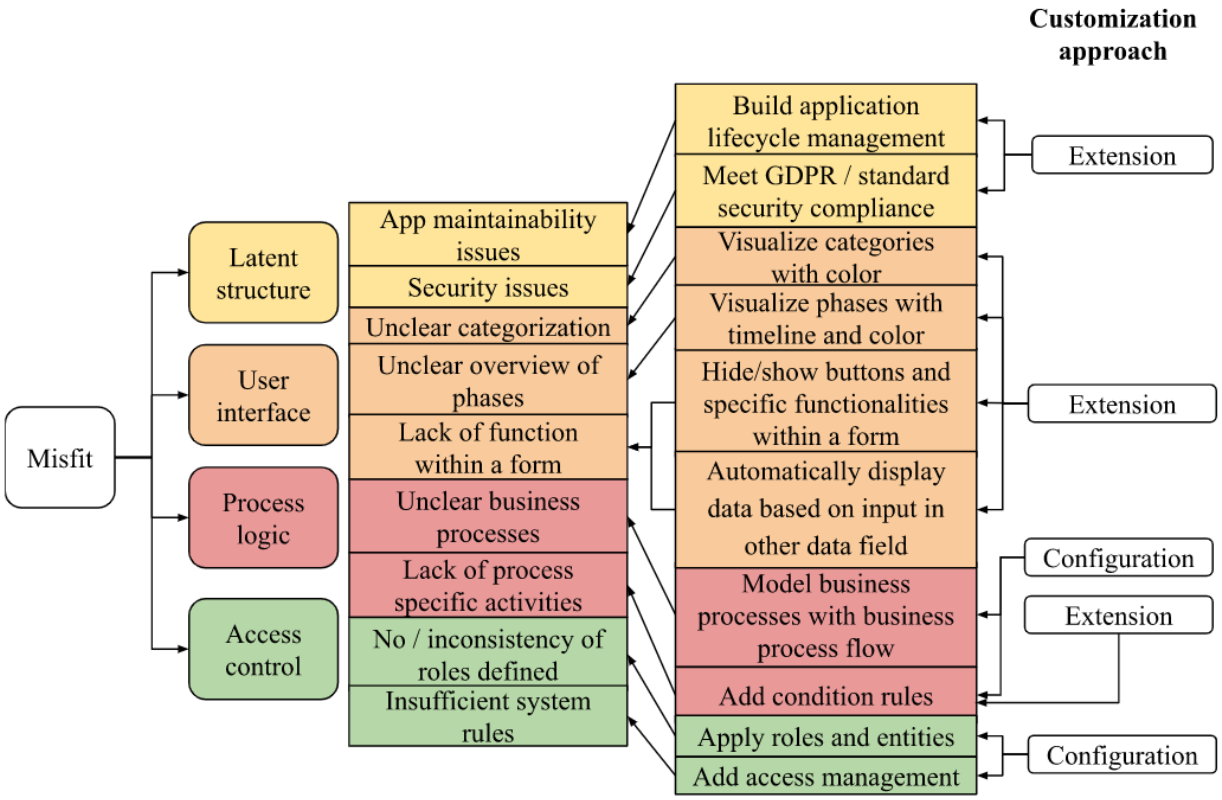

Figure 8 - Framework for solving misfits in CRM implementations

Compared to the misfits in ERP implementations in SMEs, there is a difference in the frequency of the misfits. When comparing the frequency of the different kinds of misfits, the user interface misfits occur the most in CRM implementation in LEs. In ERP implementations in SMEs, process-related misfits are most common, followed by user interface misfits. This may be because an ERP system involves more processes than a CRM system. An ERP system is used by all units of a company, while a CRM system focuses more on the customers and customer-related processes.

5.4 Findings related to existing literature

The findings of this research relate in several ways to existing literature. The results of this study match with the research done by Ali et al. (2019). They stated that configuration is the most used customization approach. From both the case and pilot interviews, the participants also mentioned that the starting point when doing customization is always configuration. However, in the cases that have been studied, extension is ultimately more common. Unlike Ali et al.'s study (2019), this study's findings differ from van Beijsterveld and van Groenendaal's study (2016). In their study, misfits in the latent structure are mainly solved by creating a workaround. This resolution strategy is not covered in the cases that are studied. In this study the latent structure misfits have all been resolved through extension.

Furthermore, the conclusion from van Beijsterveld and van Groenendaal's study (2016) that SMEs want to keep their unique ways of doing business, also applies to LEs. Although the business processes could mainly be modeled through configuration, code was often still used for company-specific requirements.

6. Conclusion

The last chapter will cover the conclusion of this research. First, the research question is restated in chapter 6.1. Second, chapter 6.2 describes what the researcher has done to resolve the research question. Third, the research results are briefly summarized in chapter 6.3. After that, the contribution of this research is explained in chapter 6.4. In chapter 6.5, some practical suggestions are given. Finally, some limitations and future research will be discussed in chapter 6.6.

6.1 Research background and research question

Enterprise systems are part of a company's core business and are widely used. As a result, there are consultancy companies that help other companies implement enterprise systems. Before the implementation, the question arises whether the client's processes match the system or not. This mismatch is also called a misalignment or misfit and is unavoidable during enterprise system implementations. Existing literature has shown that gaps always exist between the system and the business processes and that it is hard to find the right fit (Hustad et al., 2016; Yen et al., 2011).

Most of the research about misfits in enterprise system implementation is about ERP systems in SMEs. In the area of CRM implementations, there is a lack of research on CRM frameworks and related strategies. Existing frameworks and strategies mainly discuss organizational performance, an organizational-centric view, and successful CRM implementation as a whole package, but not the alignment between the CRM system and the organization. In addition, it is not clear what the misfits are in CRM implementations and how they can be solved. Therefore, this research answers the following research question: *"What are the potential solutions to the misfits in CRM implementations in large enterprises?".*

6.2 Research method

To answer the research question, an exploratory case study is conducted. By collecting data, a framework is built. The data is collected by conducting semi-structured interviews at four companies and by collecting archived documents. The interviewees consist of consultants from the company where this research is conducted, and product owners from the client companies.

The archived documents served as additions to the interviews to make the final answers more complete.

Before conducting the case study interviews, four pilot interviews were carried out to gain more background information about configuration and extension in practice. This ensured that the researcher was better prepared for the case study interviews. The pilot interviews were held with consultants from Avanade.

After the case study interviews, all collected data were analyzed. The data were analyzed by transcribing the recorded interviews. After transcribing, the transcripts were coded through open coding, axial coding, and selective coding.

6.3 Results

6.3.1 Misfit categories

The interviews showed that there are four kinds of misfits during a CRM implementation, namely:

- **Latent structure misfits**: Misfits that are related to the system environment. It is about the quality of the system, such as security features, reliability, and backup capability.
- **User interface misfits**: Misfits about the system's look and how the user interacts with the system.
- **Process logic misfits**: Misfits about the organization's unique logic that does not match with the implemented system.
- **Access control misfits**: Misfits about the roles and rules within an organization that do not match with the roles and rules defined in the system.

6.3.2 Capability of different solutions

There are two types of solutions to tackle misfits: configuration and extension. From the data analysis, extension can be used to solve latent structure and user interface misfits. For configuration, process logic misfits can be tackled. However, custom code is needed for the business-specific requirements in the process logic misfit. The access control misfits can also be solved with configuration.

In general, choosing between different solutions depends on how specific certain requirements are and how important they are to a company. Even though this research's outcome is that some misfits can be solved with either configuration or extension, eventually, both solutions can be used for all misfits. What needs to be kept in mind when choosing between configuration and extension will be explained in chapter 6.5.

6.4 Contribution

With this research, the researcher makes several contributions to the literature. First, the researcher contributes to the literature of CRM implementations. This is done by identifying misfits that occur during CRM implementations. Previous studies about CRM implementations were about organizational performance, an organizational-centric view, and successful CRM implementation as a whole package. Different from previous literature, this research is about misfits in CRM implementations, which is one of the critical success factors in CRM implementations.

Second, the researcher contributes to the literature of system implementation in large enterprises. This is done by conducting case studies in large enterprises and examining the differences between SMEs and LEs related to enterprise system implementations.

Third, the researcher contributes to the literature of the misfit analytical framework. This is done by investigating customization approaches that can be applied to the identified misfits. Hereby, the gap between the misfits in CRM implementations and the customization approaches that are available to resolve misfits can be closed.

Finally, the researcher contributes to the literature of customization approaches. This is done by examining how different customization approaches can address misfits in CRM implementations in large enterprises.

6.5 Practical implications

The primary objectives of this research consisted of two parts. The first part identifies misfits in CRM implementations, and the second part examines what customization approach can solve which kind of misfit. With the findings of this research, there are some practical implications:

- Initially, during CRM implementations, there is often a misalignment between the system and the organization. This study identified different misfits that can occur during the implementation. All misfits can be categorized into different kinds of misfits. So, whenever a company runs into a misfit, the ones responsible for the implementation can determine which category the misfit belongs to, based on the framework for solving misfits in CRM implementations.
- Misfits can be solved by using customization approaches to align the system with the business requirements. This study focused on two customization approaches – extension and customization – and examined how the approaches can be used. Most of the time, for some kinds of misfits extension is used more often, and for some kinds of misfits configuration is used more often. When a product owner, CIO, or IT manager encounters a misfit, the first thing they can do now, is to determine what kind of misfit it is. Based on the misfit category, the most suitable customization approach and mechanisms can be used to solve the misfit.
- However, several factors need to be considered when choosing between configuration and extension. It is not only about choosing one of the solutions based on the misfit type, but it is also about the system's performance. The system's performance can differ when you choose either configuration or extension. The pilot interviews revealed that extension often performs more effectively than configuration. When the system only has to process a small amount of data and the configuration of the system meets the requirements, configuration can be used. But when a large amount of data has to be processed, you have to see if using configuration outweighs the performance you get in return. If the performance is significantly higher when using extension, extension can be used. If the performance is almost the same, configuration can still be used.

In short, when facing a misfit during an implementation, remember to first recognize the misfit. It can be recognized when the business need does not match the standard system. After identifying the misfit, the misfit needs to be placed in one of the misfit categories. For each category, one of the two customization approaches is more commonly used to resolve the misfit. But remember to base the choice of customization approach not only on the type of misfit, but also on the system's performance.

6.6 Limitations and future research

In this research, there are some limitations, which are already mentioned in chapter 3.4. The first limitation is that this study takes place at a consultancy firm that only implements Microsoft technologies. As a result, the findings of this research cannot be generalized among all companies that are going through a CRM implementation or went through a CRM implementation. The findings only apply to companies that have implemented the Microsoft CRM system. Therefore, a suggestion for future research is to conduct the same study that not only focuses on Microsoft technologies, but also includes other CRM systems and technologies.

Second, this study focuses on large enterprises. Therefore, it cannot be concluded that the findings can also be applied to SMEs. For future research, the same research can be conducted with cases that consist of SMEs to test whether the findings from this study can be applied to SMEs.

Third, because of the small amount of time available for this research, the number of interviews conducted is relatively small. More misfits could have been discovered if there was time to conduct more interviews. To extend the framework, future research can conduct more case studies to identify more misfits and solutions to add to the framework.

Lastly, this research only focused on configuration and extension as solutions, but there are other customization approaches like personalization, composition, modification, and integration. These customization approaches can also be included in future research to build upon this research.

References

Ali, A. Q., Sultan, A. B. M., Ghani, A. A. A., & Zulzalil, H. (2018). Customization of software as a service application: problems and objectives. *Journal of Computer Science & Computational Mathematics*, *8*(3), 27-32. https://doi.org/10.20967/jcscm.2018.03.001

Ali, A. Q., Sultan, A. B. M., Ghani, A. A. A., & Zulzalil, H. (2019). A Systematic Mapping Study on the Customization Solutions of Software as a Service Applications. *IEEE Access*, *7*, 88196-88217. https://doi.org/10.1109/ACCESS.2019.2925499

Ali, M., & Miller, L. (2017). ERP system implementation in large enterprises – a systematic literature review. *Journal of Enterprise Information Management*, *30*(4), 666-692. https://doi.org/10.1108/JEIM-07-2014-0071

Alshenqeeti, H. (2014). Interviewing as a Data Collection Method: A Critical Review. *English Linguistics Research*, *3*(1). https://doi.org/10.5430/elr.v3n1p39

Bagale, G. S., Vandadi, V. R., Singh, D., Sharma, D. K., Garlapati, D. V. K., Bommisetti, R. K., Gupta, R. K., Setsiawan, R., Subramaniyaswamy, V., & Sengan, S. (2021). Small and medium-sized enterprises' contribution in digital technology. *Annals of Operations Research*. https://doi.org/10.1007/s10479-021-04235-5

Berente, N., Lyytinen, K., Yoo, Y., & Maurer, C. (2019). Institutional logics and pluralistic responses to enterprise system implementation: A qualitative meta-analysis. *Management Informaiton Systems Quarterly*, *43*(3), 873–902. https://doi.org/10.25300/misq/2019/14214

Bernroider, E., & Koch, S. (2000). *Differences in Characteristics of the ERP System Selection Process between Small or Medium and Large Organizations* Americas Conference on Information Systems,

Bohling, T., Bowman, D., LaValle, S., Mittal, V., Narayandas, D., Ramani, G., & Varadarajan, R. (2006). CRM Implementation: Effectiveness Issues and Insights. *Journal of Service Research*, *9*(2), 184-194. https://doi.org/10.1177/1094670506293573

Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, *9*(2), 27-40. https://doi.org/10.3316/QRJ0902027

Brehm, L., Heinzl, A., & Markus, M. L. (2001, 6-6 Jan. 2001). *Tailoring ERP systems: a spectrum of choices and their implications* Proceedings of the 34th Annual Hawaii International Conference on System Sciences,

Buttle, F., Ang, L., & Iriana, R. (2006). Sales force automation: Review, critique, research agenda. *International Journal of Management Reviews*, *8*, 213-231. https://doi.org/10.1111/j.1468-2370.2006.00128.x

Cavusoglu, H., Raghunathan, S., & Cavusoglu, H. (2009). Configuration of and Interaction Between Information Security Technologies: The Case of Firewalls and Intrusion Detection Systems. *Information Systems Research*, *20*(2), 198-217. https://doi.org/10.1287/isre.1080.0180

Chang, S.-I., Hung, S.-Y., Yen, D. C., & Lee, P.-J. (2010). Critical Factors of ERP Adoption for Small- and Medium- Sized Enterprises: An Empirical Study. *JGIM*, *18*(3), 82-106. https://doi.org/10.4018/jgim.2010070104

Curtin, M., & Fossey, E. (2007). Appraising the trustworthiness of qualitative studies: Guidelines for occupational therapists. *Australian Occupational Therapy Journal*, *54*(2), 88-94. https://doi.org/10.1111/j.1440-1630.2007.00661.x

Dah, H. M., Blomme, R. J., Kil, A., & Honyenuga, B. Q. (2021). Organizational Readiness: Key to Successful CRM Implementation in Hotel Industry. In J. S. Chen (Ed.), *Advances in Hospitality and Leisure* (Vol. 17, pp. 129-145). Emerald Publishing Limited. https://doi.org/10.1108/S1745-354220210000017007

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The Academy of Management Review*, *14*(4), 532-550. https://doi.org/10.2307/258557

Farhan, M. S., Abed, A. H., & Ellatif, M. A. (2018). A systematic review for the determination and classification of the CRM critical success factors supporting with their metrics. *Future Computing and Informatics Journal*, *3*(2), 398-416. https://doi.org/10.1016/j.fcij.2018.11.003

Finnegan, D. J., & Currie, W. L. (2010). A multi-layered approach to CRM implementation: An integration perspective. *European Management Journal*, *28*(2), 153-167. https://doi.org/10.1016/j.emj.2009.04.010

Gessner, M. (2022). *What Companies Use CRM?* Focus on Force. https://focusonforce.com/crm/what-companies-use-crm/#retail_industry

Ghobadian, A., & Gallear, D. (1997). TQM and organization size. *International Journal of Operations & Production Management*, *17*(2), 121-163. https://doi.org/10.1108/01443579710158023

Guion, L. A. (2002). Triangulation: Establishing the Validity of Qualitative Studies. *2002*(6). https://doi.org/doi.org/10.32473/edis-fy394-2002

Hadi, W. e. (2015). The Relationship between CRM Strategies Stage on Competitive Advantage: An Analytical Perspective. *International Journal of Business and Management*, *10*(8). https://doi.org/10.5539/ijbm.v10n8p245

Hustad, E., Haddara, M., & Kalvenes, B. (2016). ERP and Organizational Misfits: An ERP Customization Journey. *Procedia Computer Science*, *100*, 429–439. https://doi.org/10.1016/j.procs.2016.09.179

Jagoda, K., & Samaranayake, P. (2017). An integrated framework for ERP system implementation. *International Journal of Accounting & Information Management*, *25*(1), 91-109. https://doi.org/10.1108/IJAIM-04-2016-0038

Josiassen, A., Assaf, A. G., & Cvelbar, L. K. (2014). CRM and the bottom line: Do all CRM dimensions affect firm performance? *International Journal of Hospitality Management*, *36*, 130-136. https://doi.org/https://doi.org/10.1016/j.ijhm.2013.08.005

Khashab, B., Gulliver, S., Ayoubi, R., & Strong, C. (2022). Analysing enterprise resources for developing CRM framework in higher education institutions. *Journal of Enterprise Information Management*, *35*(6), 1639-1657. https://doi.org/10.1108/JEIM-09-2021-0421

Kim, M., Park, J. E., Dubinsky, A. J., & Chaiy, S. (2012). Frequency of CRM implementation activities: a customer-centric view. *Journal of Services Marketing*, *26*(2), 83-93. https://doi.org/10.1108/08876041211215248

Ko, E., Kim, S. H., Kim, M., & Woo, J. Y. (2008). Organizational characteristics and the CRM adoption process. *Journal of Business Research*, *61*(1), 65-74. https://doi.org/10.1016/j.jbusres.2006.05.011

Kurbel, K. E. (2013). *Enterprise Resource Planning and Supply Chain Management* (1 ed.). Springer Berlin, Heidelberg. https://doi.org/https://doi.org/10.1007/978-3-642-31573-2

Labus, M., & Stone, M. (2010). The CRM behaviour theory – Managing corporate customer relationships in service industries. *Journal of Database Marketing & Customer Strategy Management*, *17*(3), 155-173. https://doi.org/10.1057/dbm.2010.17

Leung, Y. T., & Bockstedt, J. (2009). Structural Analysis of a Business Enterprise. *Service Science*, *1*(3), 169-188. https://doi.org/10.1287/serv.1.3.169

Li, M. (2019). *An Approach to Addressing the Usability and Local Relevance of Generic Enterprise Software* Selected papers of the IRIS, Finland.

Li, M. (2021). *Generic Enterprise Software Implementation as Context for User-Oriented Design: Three Conditions and their Implications for Vendors* 12th Scandinavian conference on information systems, Norway.

Liu, H.-Y. (2007). Development of a Framework for Customer Relationship Management (CRM) in the Banking Industry. *International Journal of Management*, *24*(1), 15-32.

Maleki, M., & Anand, D. (2008). The Critical Success Factors in Customer Relationship Management (CRM) (ERP) Implementation. *Journal of Marketing & Communication*, *4*(2), 67-80.

Markus, M. L., Axline, S., Petrie, D., & Tanis, S. C. (2000). Learning from adopters' experiences with ERP: problems encountered and success achieved. *Journal of Information Technology*, *15*(4), 245-265. https://doi.org/10.1080/02683960010008944

Matende, S., & Ogao, P. (2013). Enterprise Resource Planning (ERP) System Implementation: A Case for User Participation. *Procedia Technology*, *9*, 518-526. https://doi.org/https://doi.org/10.1016/j.protcy.2013.12.058

Microsoft. *CRM*. Microsoft. https://dynamics.microsoft.com/en-us/crm/what-is-crm/

Microsoft. *An introduction to CRM tools*. https://dynamics.microsoft.com/en-us/crm/crm-tools/

Microsoft. *What is ERP?* https://dynamics.microsoft.com/en-us/erp/what-is-erp/

Mijač, M., Picek, R., & Stapic, Z. (2013). *Cloud ERP System Customization Challenges* CECIIIS, Croatia.

Nguyen, T. H., Newby, M., & Macaulay, M. J. (2015). Information Technology Adoption in Small Business: Confirmation of a Proposed Framework. *Journal of Small Business Management*, *53*(1), 207-227. https://doi.org/10.1111/jsbm.12058

Oracle. *What is ERP?* https://www.oracle.com/erp/what-is-erp/

Parthasarathy, S., & Daneva, M. (2014). Customer requirements based ERP customization using AHP technique. *Business Process Management Journal*, *20*(5), 730-751. https://doi.org/10.1108/BPMJ-04-2013-0044

Payne, A., & Frow, P. (2005). A Strategic Framework for Customer Relationship Management. *Journal of Marketing*, *69*(4), 167-176. https://doi.org/10.1509/jmkg.2005.69.4.167

Pohludka, M., & Štverková, H. (2019). The Best Practice of C. R. M. Implementation for Small- and Medium-Sized Enterprises. *Administrative Sciences*, *9*(1), 1-17. https://doi.org/10.3390/admsci9010022

Recker, J. (2013). *Scientific Research in Information Systems*. Springer Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-30048-6

Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). The Customer Relationship Management Process: Its Measurement and Impact on Performance. *Journal of Marketing Research*, *41*(3), 293-305. https://doi.org/10.1509/jmkr.41.3.293.35991

Saeed, K. A., Grover, V., Kettinger, W. J., & Guha, S. (2011). The successful implementation of customer relationship management (CRM) system projects. *SIGMIS Database*, *42*(2), 9-31. https://doi.org/10.1145/1989098.1989100

Sakunthala, A. (2020). Role of Information Technology on CRM Implementation in selected Industries. *Asian Journal of Management*, *11*(4), 413-418. https://doi.org/10.5958/2321-5763.2020.00063.3

Salesforce. *CRM 101: What is CRM?* https://www.salesforce.com/crm/what-is-crm/

SAP. *What is ERP?* https://www.sap.com/insights/what-is-erp.html

Seddon, P. B., Calvert, C., & Yang, S. (2010). A Multi-Project Model of Key Factors Affecting Organizational Benefits from Enterprise Systems. *Management Information Systems Quarterly*, *34*(2), 305-328. https://doi.org/10.2307/20721429

Shiau, W.-L., Hsu, P.-Y., & Wang, J.-Z. (2009). Development of measures to assess the ERP adoption of small and medium enterprises. *Journal pf Enterprise Informatino Management*, *22*(1/2), 99-118. https://doi.org/10.1108/17410390910922859

Sia, S. K., & Soh, C. (2007). An assessment of package-organisation misalignment: Institutional and ontological structures. *European Journal of Information Systems*, *16*, 568-583. https://doi.org/10.1057/palgrave.ejis.3000700

Singh, C., & Pekkola, S. (2021). *Packaged Enterprise System Customization – A Systematic Literature Review* Hawaii International Conference on System Sciences Hawaii.

Soh, C., Sia, S. K., Boh, W. F., & Tang, M. (2003). Misalignments in ERP Implementation: A Dialectic Perspective. *International Journal of Human–Computer Interaction*, *16*(1), 81-100. https://doi.org/10.1207/S15327590IJHC1601_6

Soh, C., Sia, S. K., & Tay-Yap, J. (2000). Enterprise resource planning: cultural fits and misfits: is ERP a universal solution? *Commun. ACM*, *43*(4), 47–51. https://doi.org/10.1145/332051.332070

Strong, D. M., & Volkoff, O. (2010). Understanding Organization—Enterprise System Fit: A Path to Theorizing the Information Technology Artifact. *Management Information Systems Quarterly*, *34*(4), 731-756. https://doi.org/10.2307/25750703

Sun, W., Zhang, X., Guo, C. J., Sun, P., & Su, H. (2008). *Software as a Service: Configuration and Customization Perspectives* 2008 IEEE Congress on Services Part II (services-2 2008).

Suoniemi, S., Zablah, A., Terho, H., Olkkonen, R., Straub, D., & Makkonen, H. (2022). CRM system implementation and firm performance: the role of consultant facilitation and user involvement. *Journal of Business & Industrial Marketing*, *37*(13), 19-32. https://doi.org/10.1108/JBIM-08-2021-0380

Thong, J. Y. L. (1999). An Integrated Model of Information Systems Adoption in Small Businesses. *Journal of Management Information Systems*, *15*(4), 187-214. http://www.jstor.org.tilburguniversity.idm.oclc.org/stable/40398410

Vailshery, L. S. (2022). *Enterprise software - Statistics & Facts*. https://www.statista.com/topics/1823/business-software/#topicHeader__wrapper

van Beijsterveld, J. A. A., & van Groenendaal, W. J. H. (2016). Solving misfits in ERP implementations by SMEs [https://doi.org/10.1111/isj.12090]. *Information Systems Journal*, *26*(4), 369-393. https://doi.org/https://doi.org/10.1111/isj.12090

VerifiedMarketResearch. (2022). *Enterprise Software Market Size And Forecast* (34374). https://www.verifiedmarketresearch.com/product/enterprise-software-market/

vom Brocke, J., Fay, M., Schmiedel, T., Petry, M., Krause, F., & Teinzer, T. (2017). A Journey of Digital Innovation and Transformation: The Case of Hilti. In G. Oswald & M. Kleinemeier (Eds.), *Shaping the Digital Enterprise: Trends and Use Cases in Digital Innovation and Transformation* (pp. 237-251). Springer International Publishing. https://doi.org/10.1007/978-3-319-40967-2_12

Wei, H.-L., Wang, E. T. G., & Ju, P.-H. (2005). Understanding misalignment and cascading change of ERP implementation: a stage view of process analysis. *European Journal of Information Systems*, *14*(4), 324-334. https://doi.org/10.1057/palgrave.ejis.3000547

White, R. E., Pearson, J. N., & Wilson, J. R. (1999). JIT Manufacturing: A Survey of Implementations in Small and Large U.S. Manufacturers. *Management Science*, *45*(1), 1-15. https://doi.org/10.1287/mnsc.45.1.1

Yen, T. S., Idrus, R., & Yusof, U. K. (2011). A Framework for classifying misfits between enterprise resource planning (ERP) systems and business strategies. *Asian Academy of Management Journal*, *16*(2), 53-75.

Yin, R. K. (2009). *Case Study Research: Design and Methods*. SAGE Publications. https://books.google.nl/books?id=FzawIAdilHkC

Zach, O. (2012). *ERP system implementation in small and medium-sized enterprises* University of Agder]. Kristiansand. https://uia.brage.unit.no/uia-xmlui/bitstream/handle/11250/136206/Zach.pdf?sequence=1

Ziani, D. (2014). Configuration Inerpsaas Multi-Tenancy. *International Journal of Computer Science, Engineering and Information Technology*, *4*, 57-62. https://doi.org/10.5121/ijcseit.2014.4206

Appendix A: Case study interview protocol

Introduction

- Welcoming, thank the participant for participating.
- Explain the structure of the interview:
    1. Interviewer introduction: Master study, internship, research
    2. Interviewee introduction
    3. Purpose of the interview
    4. Questions
- Request permission to record the interview for transcribing, and mention that it will be deleted afterward.
- Emphasize that everything is confidential and anonymous, and that wrong answers do not exist.
- Start recording and start introducing.

General questions

1. What is your position in the company?
2. How many years of experience do you have in this position?
3. Can you tell me what the Avanade and [company] project was about?
4. What was the reason you wanted to use the CRM system that Avanade provided?
5. What were the considerations you had to make in deciding whether to use the system?
6. What was your role during the project?
7. How long has the project been completed?
8. How many people use the CRM system?
9. How many employees work at this company?

Functionalities/Misfits

- Explain what a misfit is and the distinction between extension and configuration

10. What did you encounter in terms of functionality during the project?
11. Were there any functionalities that were not in the system, but that you would like to see?
    a. If so, how was that resolved in the end?
    b. What was the impact if it could not be achieved?
    c. What was the functionality about?

12. Are there any functionalities added to the CRM through configurations? Which were they?
13. Are there any functionalities added to the CRM using custom code?
14. Which factors did you take into account when choosing between customization and configuration?

Additional questions

- Ask for documents related to this project that can be used for this research.
- Ask for contact information from key users / other stakeholders involved in this project.

Ending

- Thank him/her for the time.
- Tell him/her about the following steps (transcribing and analyzing, sending a summary to them to add missed points, or change and confirm the case report).