JURJEN NIENHUIS

USING CHANGE MANAGEMENT TO IMPROVE CRM USER ACCEPTANCE

USING CHANGE MANAGEMENT TO IMPROVE CRM USER ACCEPTANCE

JURJEN NIENHUIS

In a Microsoft Dynamics CRM context at Avanade

School of Management and Governance & Electrical Engineering, Mathematics and Computer Science
University of Twente

February 2014 - July 2014

Jurjen Nienhuis: *Using change management to improve CRM user acceptance,* In a Microsoft Dynamics CRM context at Avanade © February 2014 - July 2014

SUPERVISORS:
M.E. Iacob
M.J. van Sinderen
G. van Waardenburg
G. Ramaker

LOCATIONS:
Enschede and Almere

TIME FRAME:
February 2014 - July 2014

ABSTRACT

A considerable amount of research has been conducted on user acceptance of Information Systems (IS). In addition, new IS are bought or developed by organizations to improve efficiency, effectiveness, and employees' job performance [26, 44]. However, to attain these advancements, it is critical for the IS to be accepted and used by employees within the organization [81].

Information Systems

Within the user acceptance field, research has mainly focused on IS usage and its predictors. To improve usage, organizations provide trainings, support, and an e-learning environment, under the heading of Change Management (CM). Nevertheless, it is to be determined to what extent usage and its predictors can be improved by CM.

Change Management

This research identifies to what extent CM influences usage and its predictors. Herefore, CM is operationalized as "the extent to which an employee has the awareness, desire, knowledge, ability and reinforcement to change and uphold behavior, attitude & skills". The context of this research is Customer Relationship Management (CRM) systems. CRM systems may require changes in the organization when introduced, such as the way of working.

Customer Relationship Management

The developed model is mainly based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model of Venkatesh et al. (2003) [81], who researched IS usage and its predictors. Moreover, Habit (HT) and Task-Technology Fit (TTF) are added based on the work of Limayem et al. (2007) and Pai & Tu (2011) [57, 69]. The developed model is empirically tested through a survey at two customers of Avanade and LinkedIn users. Habit was found to be the central construct, predictable for 56% and, influenced by Effort Expectancy, Performance Expectancy, Task-Technology Fit and CM. No significant relationship was determined between Behavioral Intention and Use Behavior, which contradicts previous studies. CM influenced Effort Expectancy, Performance Expectancy, Social Influence, Facilitating Conditions, and Task-Technology Fit, as hypothesized. This entails that CM does influence the predictors of Use Behavior (UB), via HT.

Unified Theory of Acceptance and Use of Technology

Habit

Task-Technology Fit

Use Behavior

SAMENVATTING

Veel onderzoek is gedaan naar gebruikersacceptatie van informatiesystemen. Daarnaast worden nieuwe informatiesystemen ontwikkeld of gekocht door organisaties om de efficientie, effectiviteit en prestaties van de medewerkers te verhogen [26, 44]. Om deze voordelen te benutten moeten de medewerkers het nieuwe informatiesysteem echter wel accepteren en gebruiken [81].

Binnen het gebied van gebruikersacceptatie, heeft onderzoek zich tot nu toe voornamelijk gericht op de acceptatie, het gebruik van informatiesystemen en de voorspellende factoren van gebruik. Organisaties proberen de acceptatie, gebruik en voorspellende factoren te verhogen door het geven van bijvoorbeeld trainingen, het aanbieden van hulp en een online leersysteem. Deze activiteiten vallen onder de noemer van Change Management (CM). Het is echter niet duidelijk in hoeverre gebruik en haar voorspellende factoren beïnvloed kunnen worden door CM.

Change Management

Dit onderzoek bepaalt in hoeverre CM in staat is gebruik en haar voorspellende factoren te beïnvloeden. Hiervoor is CM eerst geoperationaliseerd als de mate waarin een medewerker het bewustzijn heeft, de wil heeft, de kennis heeft, de mogelijkheden heeft en versterkt wordt om te veranderen en te blijven bij gedrag, houdingen en vaardigheden. De context van dit onderzoek is gebaseerd op Customer Relationship Management (CRM) systemen.

Customer Relationship Management

Het ontwikkelde model is voornamelijk gebaseerd op het UTAUT model van Venkatesh et al. (2003) [81], welke onderzoek deden naar gebruik van informatiesystemen en haar voorspellende factoren. Het ontwikkelde model is empirisch getest met een enquête bij twee klanten van Avanade en via LinkedIn gebruikers. Gewoonte is een centrale categorie in het resulterende model gebleken, waarvan 56% van de variantie voorspeld kan worden door gebruiksgemak, prestatieverbeteringen, de mate waarin de taak bij de technologie past en door CM. Geen significante relatie is gevonden tussen intentie om te gebruiken en gebruik zelf, wat noemenswaardig is. CM beïnvloedt het gebruiksgemak, de prestatieverbetering, de sociale invloeden, de faciliterende omstandigheden en de mate waarin de taak bij de technologie past, zoals gehypothetiseerd. Uit de resultaten valt op te maken dat CM de voorspellende factoren van gebruik beinvloedt.

ACKNOWLEDGMENTS

I would like to thank all my supervisors for guiding me through the graduation process. Especially the support of M.E. Iacob and M.J. van Sinderen helped me to write a good scientific thesis. I would like to thank G. van Waardenburg for making companies and people enthusiastic about my research and convincing them to participate in the survey. I would like to thank G. Ramaker for his quick and helpful responses.

Furthermore, I would like to thank the interns at Avanade for making my stay in Almere acceptable. We had quite some fun and enjoyed some drinks the past six months.

Lastly, I would like to especially thank N. Tax for the effective and thorough feedback, mainly at the beginning of the project.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS

AVE	Average Variance Extracted
BI	Behavioral Intention
CM	Change Management
CMV	Common Method Variance
CRM	Customer Relationship Management
EE	Effort Expectancy
FC	Facilitating Conditions
FIS	Foundations of Information Systems
HM	Hedonic Motivation
HT	Habit
IS	Information Systems
ITIL	Information Technology Infrastructure Library
PE	Performance Expectancy
PLS	Partial Least Squares
PV	Price Value
ROI	Return on Investment
SI	Social Influence
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
TTF	Task-Technology Fit
UB	Use Behavior
UTAUT	Unified Theory of Acceptance and Use of Technology
VIF	Variance Inflation Factor

Part I

INTRODUCTION

1 RELEVANCE OF CHANGE MANAGEMENT FOR USER ACCEPTANCE

Information Systems

The lack of user acceptance has long been and still is a major barrier for the success of new Information Systems (IS) [26, 41, 62, 68]. The goal of most organizationally focused IS is to improve efficiency, effectiveness, and employees' job performance [26, 44]. However, when users reject the IS, this goal will not be accomplish or the results will become insignificant [26]. Rejection of the IS may have several causes. One of these is senior management which is unwilling to be involved in the process of change to the new IS, because they fear a hostile response [66].

Taking into account the importance of user acceptance, it is essential to not only perceive IS implementation as an IS development process. IS implementation is also an organizational change process [55] (as cited by [49]) and user acceptance can be addressed and improved during this process.

Change Management

Many consulting companies offer services to support the organizational change process, under the heading of Change Management (CM). In an IS context, CM will help changing organizations to cope with changing attitude, behavior and skills of users towards the new IS. Through CM, employees become aware of the need for change. This decreases resistance to the IS and increases user acceptance.

Customer Relationship Management

An example of organizationally oriented IS are Customer Relationship Management (CRM) systems. CRM systems can be used in for example sales, service, and marketing [70]. As it is cheaper to keep an existing customer than to acquire a new one, organizations change from a product-focused strategy to a customer-focused strategy [34]. Since CRM systems help the organization to manage relationships with changing customers' needs [34], an increase of demand for CRM systems is observed [22, 21, 87]. By analyzing and gathering up-to-date, rich information on all aspects of the customer, a more personal interaction with the customer can be created [77, 11, 70, 34].

Understanding customers' needs and offering value-added services are recognized as determining factors for success of companies [51]. CRM helps with maintaining positive relationships, resulting in higher customer loyalty and expanded customer lifetime value [51]. Table 1 lists some of the identified CRM system benefits [22].

Exploiting the advantages of a CRM system requires user acceptance. As CRM systems are used organization-wide, CRM implementation decisions are typically made on a strategic, management, level. This may drive resistance on operational, end users level, as it is

obliged to use a new system without users having their say in the decision process for a new IS. Organizations can try to increase user acceptance through CM. An example of a CM practice is to give trainings to help employees in applying the new CRM system in their daily work.

Unfortunately, the failure rates of CRM projects obtaining their business results are high [78, 63, 34]. This might indicate that the implementation processes focuses too much on the development of the software without "an in-depth understanding of the issues of integrating culture, process, people, and technology within and across organizational context" [34].

In the integration process of the IS with the organization, factors such as senior management support and sponsorship, providing end user training, internally convincing people of the change, reconfiguring business process and establishing rewarding systems are key [72]. This whole process of managing the change can be problematic and very time and resource consuming, but should lead to higher acceptance [34]. The question is however to what extent CM contributes to user acceptance. To the best of the author's knowledge, no data is available to quantify the relationship between CM and user acceptance.

CM is often part of the CRM implementation process, but the failure rates of CRM systems are still too high. To improve this situation, the focus of this thesis is on CM and resulting user acceptance in the context of CRM systems. Moreover, as the author is doing an internship at the CRM department of Avanade Netherlands, the author is able to do a field study at the customers of Avanade.

The Avanade CRM department develops CRM products, based on Microsoft Dynamics CRM. Depending on the customer's wishes, time and effort is put into CM. Some customers may also decide to manage the change themselves.

Table 1: Benefits of Customer Relationship Management systems, obtained from Chen & Chen (2004) [22]

Tangible benefits	**Intangible benefits**
Increased revenues and profitability	Increased customer satisfaction
Quicker turnaround time	Positive word-of-mouth
Reduced internal costs	Improved customer service
Higher employee productivity	Streamlined business process
Reduced marketing (e.g. direct mailing) costs	Closer contact management
Higher customer retention rates	Increased depth and effectiveness of customer

Table 1: Benefits of Customer Relationship Management systems, obtained from Chen & Chen (2004) [22]

Tangible benefits	**Intangible benefits**
Protected marketing investment with maximized	Acute targeting and profiling of customers
	Better understanding/addressing of customer

2 RESEARCH METHODOLOGY

As mentioned in the previous chapter, this research focuses on CM and user acceptance of CRM systems. The research should help to further increase the number of successful new IS, by increasing CRM user acceptance.

User acceptance can be increased by managing the change to the new IS. However, managing the change can be hard, because many of the changes in organizations fail and do not give the financial benefits as forecasted [6, 64, 52]. To address problems in the change process, the effects should be evaluated at the end users' side, because the end users are the ones who should accept the system and are one of the targets in the organizational change process. The focus on end users will help to determine what drives user acceptance and identify problems. Monitoring the change process at the input side is less useful, as this does not say anything about the resulting users' involvement.

The question remains, however, to what extent CM can influence CRM user acceptance. Therefore, the main research question is:

To what extent does change management contribute to CRM user acceptance?

The main research question can be split in three sub-questions. The first two research questions can be discussed in parallel while the third integrates the first two.

First, a general overview of the CM field has to be obtained in terms of perspectives on CM. Based on these outcomes, CM will be defined from an end user's perspective.

1. *How can change management be operationalized from an end user's perspective, in a CRM context?*

Secondly, an overview of the user acceptance knowledge for CRM is needed. This should give insight in user acceptance and its determinants. CM might influence these determinants to improve user acceptance.

2. *What are the predictors of user acceptance of a CRM system?*

Based on the outcomes of the two previous sub-questions, a model will be developed which combines the relationship of CM and user acceptance.

3. *How can change management and user acceptance be integrated into a single model?*

The developed model will be validated to answer the main research question. This will be done with a survey, conducted at the end users of CRM systems. The survey will give quantitative results, which is best suited for studies which focus on individuals [8].

2.1 APPROACH

To structure this research, the design science methodology of Hevner et al. (2004) will be used [44]. A model will be composed using literature in the field of CM and user acceptance. In order to operationalize CM from an end user's perspective, a general overview of the CM approaches is needed first. This overview is obtained by looking for CM theories and approaches in Scopus and Google Scholar, using the query ("change management" theories approaches). In Google Scholar and Scopus, the first 20 results will be reviewed. Scopus will be sorted on number of citations. The results will be reviewed further if they describe fundamental approaches in CM. Using one-step forward and backward citation, research will be widened to gain a basic understanding of the academic works concerning CM.

To get an overview of CM for IS in general and CRM in particular, Scopus and Google Scholar will be consulted with the query ("change management' crm approach). The results will be reviewed if they contain a method for handling the change in an organization. A review of the methods used by practitioners will be done, by using the book of Erskine (2013) [33]. The book has been provided by Avanade and is specialized in change for Information Technology Infrastructure Library (ITIL), which is expected to have similarities with CM for IS. The Avanade approach to CM will be reviewed as well, to make the thesis applicable to Avanade.

Information Technology Infrastructure Library

For user acceptance, the starting point is the literature provided at University of Twente, during the course Foundations of Information Systems (FIS). The selection of the literature for this course has been published by Moody, Iacob & Amrit (2010) [65], to find the core theories concerning IS. Many of these core theories have a considerable amount of overlap and are competing in the IS success and IS usage field. Forward search will be done to find the latest developments in the IS success/usage field. The studies should aim to further describe and understand user acceptance.

Foundations of Information Systems

User acceptance for CRM will be researched using Scopus and Google Scholar with the query (user acceptance crm). The papers will be selected when they are building on the non CRM specfic user acceptance theories.

A survey will be conducted among the end users of Avanade's CRM systems, to evaluate the proposed model. A requirement of the participating companies is that the survey could take up to five minutes.

3 THESIS OVERVIEW

Part ii, state of the art, introduces change management and user acceptance, based on the relevant theories and related work in the field.
Part iii, development of the model, operationalizes Change Management and determines relevant user acceptance concepts for CRM, in order to develop and test the model.
Part iv, describes the results, discussion and conclusion of the resulting model.

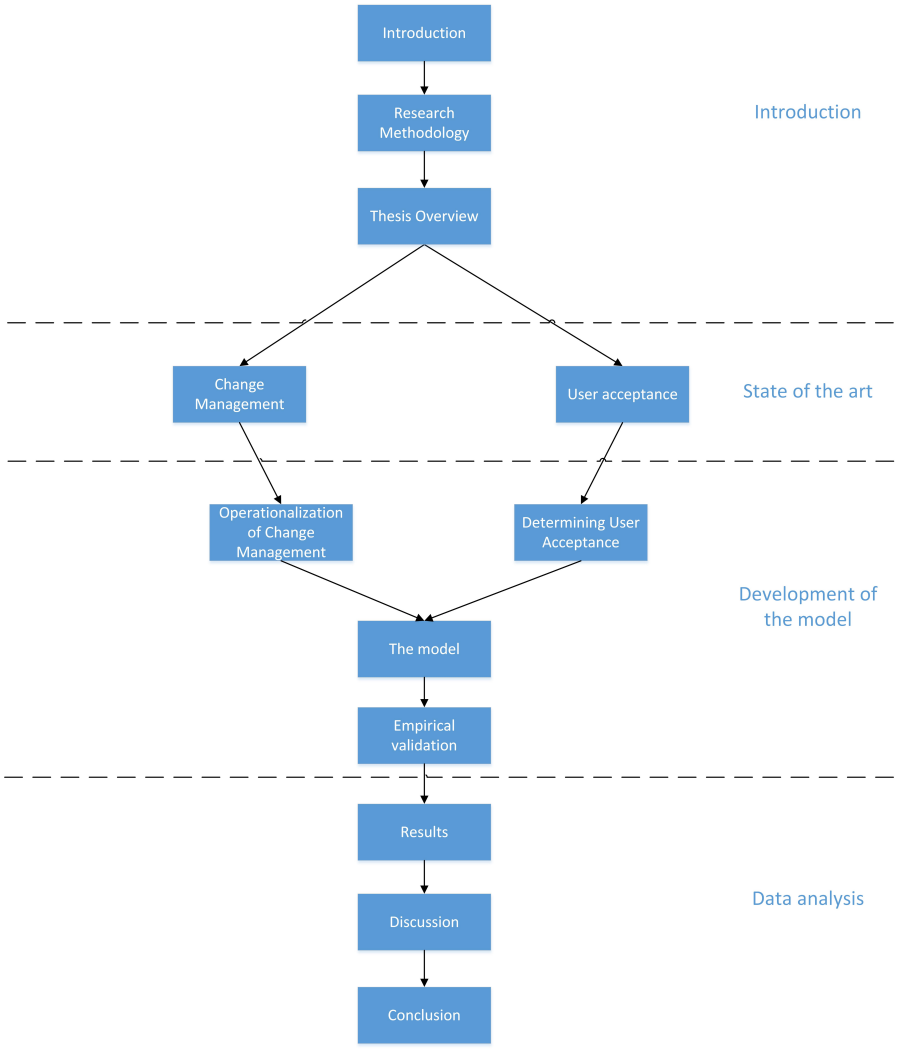

Figure 1: The structure of the thesis

Part II

STATE OF THE ART

4

CHANGE MANAGEMENT

In this chapter, the concept of CM will be introduced in general as well as in a CRM context. This chapter aims to:

- Briefly explain the results of the literature study;
- Explain the processes of, resistance to, and the individual perspective on CM.

4.1 LITERATURE STUDY RESULTS

In his book, Burnes (2004) gives an overview of the CM field [17]. He describes the development of the field, as well as its main approaches. Bamford & Forrester (2003) and By (2005) critically review these main approaches [7, 19]. Avanade's perspective on CM, Kotter & Schlesinger (2008) perspectives on resistance to change [53], and the ADKAR model for the individual perspective on change [45] are also incorporated in this research.

4.2 APPROACHES TO CHANGE MANAGEMENT

CM is not a clear-cut discipline with well-defined boundaries [17]. The most well-known approaches to the change are the planned change approach and the emergent change approach.

4.2.1 *Planned change*

The planned change approach originated in the work of Lewin [7, 20]. According to Burnes (2004) [16], Lewin used the term planned change to distinguish change which is consciously scheduled from change which derives from accidental actions. Lewin believes that "people in organizations work in groups" and "individual behavior must be seen, modified or changed in the light of groups prevailing practices and norms" [16]. To bring about change, the focus should not be on individuals but on the groups' norms, roles and values [24].

Lewin developed a three-stage model for his envisioned change. These stages are unfreezing, moving, and refreezing. Lewin states the current set of behavior needs to be destabilized, unfrozen, before new behavior can replace old behavior [17]. Three processes are needed for this unfreezing [75]. First, people should disconfirm their current set of behavior. Secondly, people should feel 'attached' to this

disconfirmation and have a strong desire to change. At last, people should feel save from loss and humiliation [17].

Following the process of implementation, the organization implements the actual change. The outcome of this change cannot always be predicted, but the forces influencing the change - such as reinforcement of old behavior - can be evaluated in an iterative way to steer to a more acceptable set of behavior [75]. Trying to change behavior without reinforcement, could make change short-lived [56] (as mentioned by [16]).

After the change has been implemented, the organization tries to regain stability as soon as possible, and refreezes. The new behavior needs to be congruent with the set of other behavior, personalities and the environment of the employees, to keep stability [17]. Otherwise, the change could become unsuccessful.

Based on the three-step approach by Lewin, new models have been developed. Bullock and Batten (1985) tried to make a more practical model, by reviewing more than 30 models of planned change [7]. The model consists of four phases and contains the exploration, planning, action and integration phase [14].

In the exploration phase, members of the organization determine and decide whether or not a change is needed. If so, resources are committed to the change. In the second phase, the problem is diagnosed and change goals and actions are defined. In the action phase the changes are implemented as planned, including the feedback needed to control the change [3]. Once the changes are implemented, the integration phase has been reached. In this phase the organization tries to stabilize and new behavior is reinforced. This four phase model has broad applicability to most change situations according to [24] (as cited by [3]).

4.2.2 *Emergent change*

Considerable disagreement exists about the most appropriate way to change organizations. The planned change method is seen as too heavily relying on the role of the managers and assumes the managers have a full understanding of the change process as a whole [85]. Because of the criticism on planned change, the emergent change approach has gained ground [19]. Within this approach, change is seen as a continuous, dynamic and contested process that emerges in an unpredictable and unplanned fashion [17]. Emergent change is bottom-up driven [7] and the 'increasingly dynamic and uncertain nature' of organizations makes the emergent change more appropriate than planned change [85] (as cited by [17]). Furthermore, change is seen as sudden, messy and unpredictable and not as a linear, planned, process [29, 13].

According to Burnes (2003), in the emergent approach five aspects of organizations make or break change [15]. These aspects are organizational structures, cultures, organizational learning, managerial behavior and power and politics. Some types of formal and informal organizational structures are easier to achieve change than others [36]. More dynamic and chaotic environments require organizations to be more flexible and less hierarchical. For change to be successful, the new situation has to be anchored in the organization's culture.

Organizational learning concerns 'the capacity of members of an organization to detect and correct errors and to seek new insights that would enable them to make choices that better produce outcomes that they seek' [61]. Making employees dissatisfied with the current situation can help building momentum for change [85]. According to Pettigrew and Whipp (1993), 'collective learning' is a main precondition for sustainable change [71].

The emergent change approach sees managers as facilitators and coaches, in contrast to directing and controlling function in the planned approach. This difference requires various capabilities from managers. Power and politics are recognized as important factors in the emergent approach. It is important to 'gain support of senior management, local management, supervisors, trade unions and workplace employees' [28] and to build coalitions [47].

4.3 INDIVIDUAL PERSPECTIVE ON CHANGE

Erskine, a practitioner in the field of IT and organizational change initiatives, outlines the individual perspective on change, causes of resistance to change, and how to cope with this resistance [33]. She describes the ADKAR model - which is developed by Hiatt (2006) [45] - as a method which covers the aspects needed for an individual to adapt to the change.

The ADKAR model concerns managing the people side of change. This model highlights more than just the task of communication, sponsorship or training [45]. The goal of this model is to realize change faster, with greater participation levels, and higher performance by all individuals affected by the change. This should result in realizing the goals of the change and maximize the financial benefits.

In Table 2, the CM elements of the ADKAR model are aligned with the business results. The CM activities are connected to the business results through the ADKAR model. To achieve the business results, all the element of the ADKAR model have to be covered. In order to fulfill the ADKAR criteria, different CM activities have to be undertaken. For these activities to be completed, a strategy is needed.

Because various activities and ways of doing these activities exists, the focus will be on the ADKAR element, to make it fit with all kind

of activities. For example, some organizations may give trainings in a virtual way, some may do it once, and some only give on-site support.

Table 2: Change management aligned with business results, obtained from Hiatt (2006) [45]

CM strategy development	**CM activities**	**CM elements - ADKAR**	**Business results**
Assess the change	Communications	Awareness	On time
Assess the organization	Sponsorship	Desire	On budget
Assess sponsorship	Training	Knowledge	Archieve business objectives
Assess risks and challenges	Coaching	Ability	- lower costs
Design special tactics	Resistance management	Reinforcement	- increased revenue
Form team and sponsor model			- improved quality
Assess team readiness			- maximize ROI

As mentioned in Table 2, five elements of CM need to be covered from the individual perspective [45]. First of all, an individual needs to be **aware** why the change is needed. This is done by communicating the need for change. Then, it is important that the person has the **desire** to support and participate in the change. There should be some motivation to change, in terms of advantages for the individual. Third, the employee should have the **knowledge** on what is expected from him or her and how or she should change.

After these three above-stated criteria have been fulfilled, the person should have the **ability** to change his or her skills and behavior. The skills and behavior should be **reinforced** to sustain the change.

The ADKAR can be used in tandem with the six steps method to decrease the resistance to change, as discussed in the next section [33].

4.4 RESISTANCE TO CHANGE

Kotter & Schlesinger (2008) researched reasons for an individual to resist change. Four main reasons were found, which are parochial self-interest, misunderstanding and lack of trust, different assessments of the situation, and low tolerance to change [53].

Kotter & Schlesinger (2008) found that people predominantly act out of self-interest in a change process. If employees think that by changing their behavior, they lose something of value for themselves - for example their position or job -, they are not willing to change.

Furthermore, when people do not understand why the change is needed and interpret the results of the change as non-beneficial, another barrier for change is created. Often this barrier is caused by a lack of trust in the person initiating the change [2].

Thirdly, an employee might have a different assessment of the situation than the person initiating the change. The employee may see more disadvantages than advantages to change and will feel less committed to the change.

Finally, people can feel unable to develop the required skills, attitude, and behavior. A lack of knowledge and a lack of time may be examples why people feel uncomfortable to change.

4.4.1 *Coping with resistance*

Kotter & Schlesinger (2008) came up with six solutions to deal with the resistance to change [53]. Successfully managed changes may contain a combination of the six approaches.

Kotter & Schlesinger (2008) found that when **communicating and educating** about the change beforehand, people will become less resistant to the change. This helps them to find out why the change is needed and overcomes problems with incorrect information or rumors within the organization.

Secondly, by **involving** and letting people **participate** in the change process, knowledge gaps can be identified and solved. Knowledge gaps can exist because the change manager is unable to know everything about the employee's working process. Involvement will also lead to participants feeling more committed to change.

Moreover, it is important that people are **facilitated and supported** to adopt to the changes, by providing trainings. Additionally, giving employees time off when a substantial amount of work is delivered can help the employees feel supported.

By **negotiating** with potential and active resisters in the organization, an incentive can be created to change. For example, a higher salary can be negotiated. Negotiated **agreements** are a relatively easy way to avoid major resistance.

Fifth, someone will become less resistant to change by giving him or her an important role in the change process or by providing selective information to this person. This is called **manipulation and co-option**. A major risk is that if the person finds out and feels manipulated, their resistance will be even larger than at the initial stage.

At last, employees may also be forced to change through **explicit or implicit coercion**. For instance, employees can be fired when they do not change to the desired situation. This is a risky approach as people strongly resent forced change. However, sometimes coercion is not be unavoidable.

4.5 CHANGE MANAGEMENT FOR CRM

In the context of an organization's customer-focus, a CRM system may be implemented, as described in Chapter 1. The decision to implement a CRM system is made at a strategic level, as CRM systems are used organization-wide. The integration of the different business units with their processes in one IS, is a significant issue for today's organizations [38].

4.5.1 *Multi-layered CRM implementation approach*

Finnegan & Currie (2010) introduced a multi-layered approach to CRM implementation [34]. The approach consists of four layers, which can be found in Figure 2. The layers are are culture, people, process and technology. A "collaborative approach which promotes integration of culture, people, processes and technology" is seen as paramount. Each of the layers depends on, enables and constrains one another.

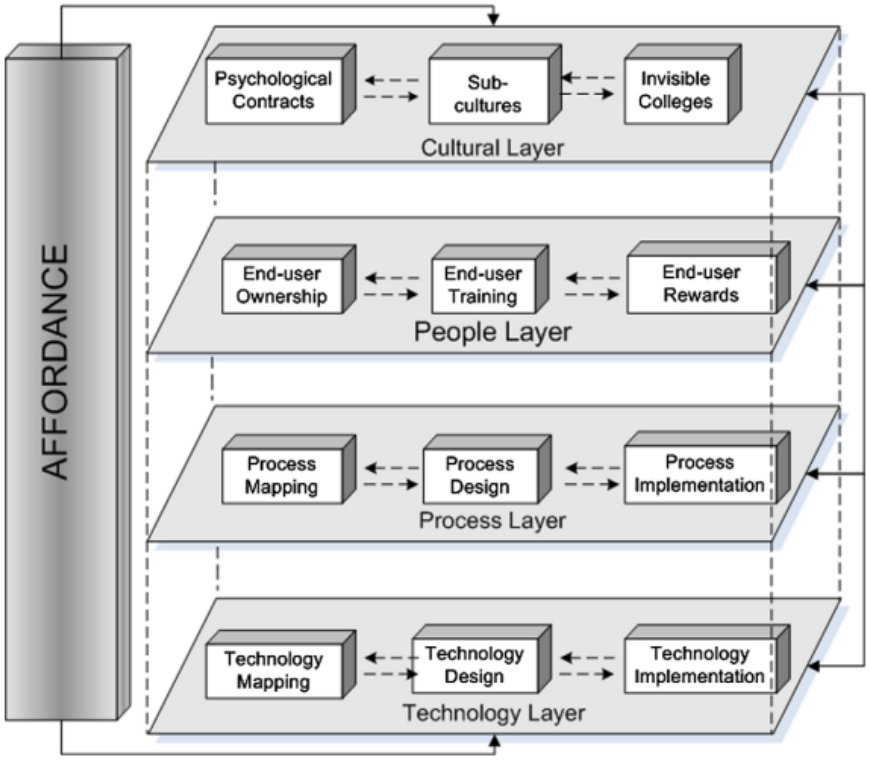

Figure 2: Multi-layered CRM implementation approach, obtained from [34]

Affordance is a central construct in this model, which represents the "perceived aspects of the setting that enable and/or constrain human actions and interactions" [39].

The cultural aspect is relevant as the shift to a customer focused organization with a CRM requires a change in "the culture to sharing information and knowledge more freely". This cultural change can be supported by "effective communication throughout the entire project" and should reach all levels of employees.

A diversity of people, such as sales, marketing and managers, are working with the CRM system. Because of the diversity, it is hard to embrace the demanded and planned change to make people accountable for change success. With senior executives support, employees can be motivated to change and overcome accountability problems.

The move to a customer focused organization requires a change in the product-driven processes. A customer-focused organization should be able to adapt to changes in the customer's demand as fast as possible.

The technology layer concerns the CRM and its technical implementation to "collect and analyze data on customer patterns, interpret customer behavior, develop predictive models, respond with timely and effective customized communications, and deliver product and service value to individual customers".

4.5.2 *Avanade's change management*

Avanade developed its own approach to CM, called 'change enablement'. The focus of this approach is on user acceptance and achieving the business case[1]. Achieving the business case is important, as success is measured based on whether the solution is turned-on, on-time and on-budget. Only few customers show concern for achieving business results, in terms of efficiency and effectiveness[2]. User acceptance is needed for the business results to be obtained.

The Avanade Change Enablement methods integrates the change process with the software development process. Six phases in the development process match five aspects of the change process, as shown in Figure 3.

During the 'Plan Change' stage, the stakeholders are identified and it is determined how the stakeholders will be affected by the change. Moreover, the change process is planned, as well as the target state is defined. This stage contains all preparation needed for the change process.

The 'Manage Change' stage ensures the identified stakeholders are engaged in the change and are ready to adopt to the new situation. The progress of the change is monitored and it is made sure that the business is ready to perform in the target state.

Enabling the organization ensures individuals adopt to the planned situation, by aligning the jobs, business processes, and the IS. It is

1 As mentioned at Avanade's Change Enablement internal webpage.
2 Based on the experience of Avanade's employees.

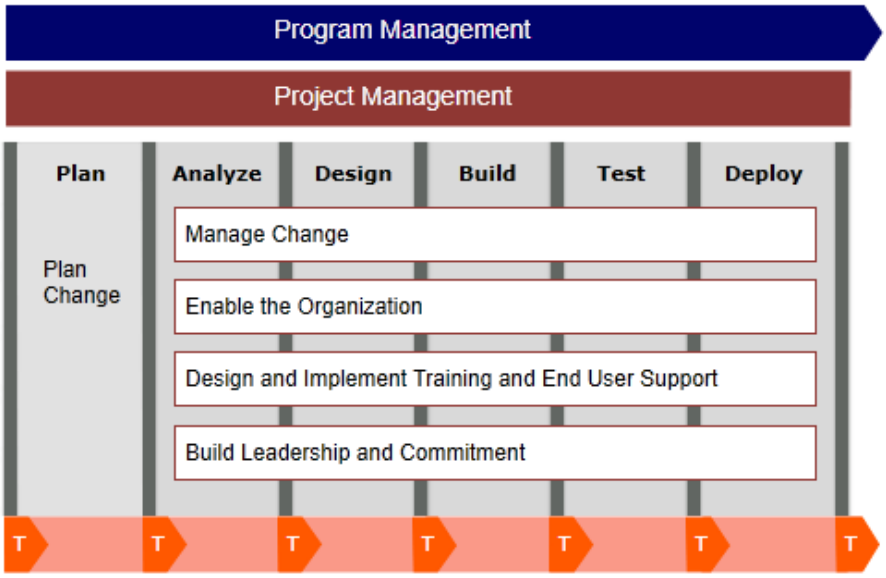

Figure 3: Avanade Change Engagement approach

important that these are aligned, otherwise the organization may not be as efficient and effective as possible.

Designing and implementing training and end user support aims at adapting the set behavior, skills, capabilities, and knowledge, to fit the new way of working. This is important because if someone does not have the ability to adapt himself or herself to the new situation, adoption may fail.

When building leadership and commitment, the leaders of the change are trained to have the required behavior to effectively lead the organization through the change. When the new behavior is identified for all stakeholders, these should be aligned by integrating them in the performance objectives and incentives, and by incorporating them into training and end user support.

As can be seen in Figure 3, the last four phases run in parallel and only the first is done beforehand. The tasks and activities of each stage are clearly defined and scheduled. This matches Lewin's definition of planned change, as discussed 4.2.1.

4.5.3 *Most suitable change management approach*

A matrix has been developed by Burnes (2004), to select which way of CM is most suitable [17]. On the horizontal axis, the need for change is mapped. In the case of near bankruptcy, drastic and fast changes may be needed to the organization. If an organization wants to improve its service, but no fundamental changes are needed, slow transformation and change are preferred.

On the vertical axis, the degree of impact, in terms of size and the amount of change, is mapped. If the impact is high, the focus is on the

organization as a whole. If the impact is low, individuals and groups behavior and attitudes should be changed. The matrix can be found in Figure 4.

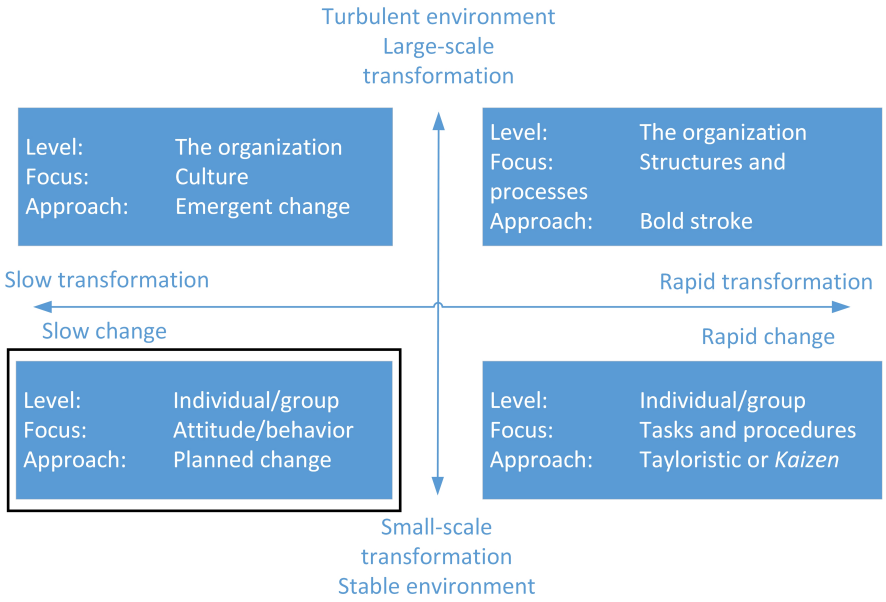

Figure 4: Framework for change, developed by Burnes (2004) [17]

The implementation of a CRM system does not involve structural or drastic changes to the organization. A CRM system is part of a customer-focused strategy in an organization [22, 21]. The customers of Avanade implement a CRM system to further improve their efficiency and effectiveness. Although many of the departments in an organization will directly or indirectly be influenced by the CRM system, this implementation does not have influence on culture of an organization. The change should mainly focus on the attitude and behavior of the end users, as the users should change their attitude and behavior to accept the new CRM system. Based on Burnes' (2004) matrix [17], the planned change approach is most appropriate for the introduction of a CRM system, which is in the lower left quadrant. This matches the current approach of Avanade, as the organization uses a planned change approach to implement the CRM system into the organization.

5 USER ACCEPTANCE

In this chapter, the concept of user acceptance will be introduced. Afterwards, the concept will be applied to the CRM context. This chapter aims to:

- Briefly discuss the results of the literature study;
- Explain the context of user acceptance;
- Justify the current understanding of user acceptance and its determinants.

According to Venkatesh et al. (2003), IS research has for a long time studied why and how people accept new information technologies [81]. The goal of this research is to understand what user acceptance depends on. However, current theoretical models and perspectives are weak in prescriptive guidance to practitioners on how to improve user acceptance [81].

5.1 LITERATURE STUDY RESULTS

As mentioned in the approach 2.1, the starting point for the literature study is the literature given at the University of Twente, at the course FIS. Special attention is given to the publication of Moody, Iacob & Amrit (2010) [65]. Unified Theory of Acceptance and Use of Technology (UTAUT) is found as a central point in literature. By using forward citations, several additions are found. One of these additions is the Habit (HT) [57, 50]. To clarify user acceptance, the theory of Karahanna et al. (1999) is found [48].

Unified Theory of Acceptance and Use of Technology

Habit

For CRM specifically, UTAUT is expanded with Task-Technology Fit (TTF) by Pai & Tu (2011) [69]. Moreover, Avlonitis & Panagopoulos (2005) researched the determinants of CRM acceptance for individual, organizational and social factors specifically [4]. It is important to note that in several articles the use of IS is voluntary. In the context of this thesis, however use is not voluntary, since end users have to use the CRM system. Also, the CRM system is the only sufficient IS for performing certain tasks.

Task-Technology Fit

5.2 USER ACCEPTANCE

As was briefly discussed above, Karahanna et al. (2009) developed a model, called Theory of Reasoned Action (TRA). Additionally, they

Theory of Reasoned Action

found differences in the determinants of user acceptance for the pre-adoption and post-adoption phase [48]. *Pre-adoption* has been referred to as "the stages leading to the adoption decision". In the pre-adoption stages, the target behavior is adoption. The stages following the adoption decision" are referred to as *post-adoption* stages and the goal here is to continued usage. Continued usage is often used as a synonym for post-adoption.

Behavioral Intention

In the pre-adoption phase, the normative determinants dominate the prediction of Behavioral Intention (BI). On the contrary, in the post-adoption phase the attitudinal determinants predominate the behavioral intention to continue using the IT. The model, developed by Karahanna et al. (1999) [48], can be found in Figure 5.

When reflecting the two phases on the work of Venkatesh et al. (2003), the pre-adoption phase is not studied [81]. However, a distinction is made for low levels of experience and higher level of experience.

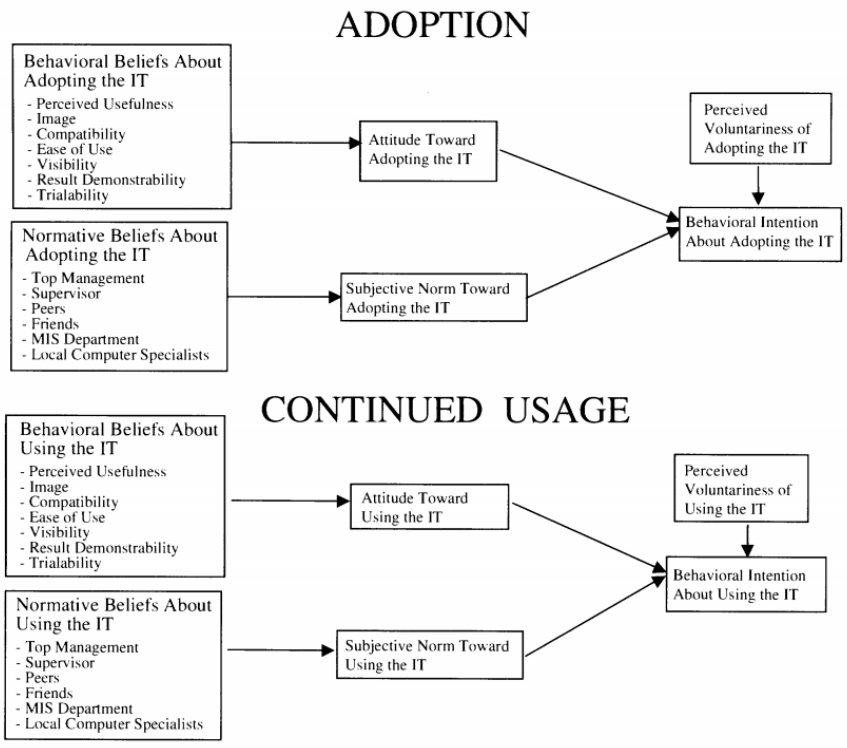

Figure 5: Theory of Reasoned Action, obtained from Karahanna et al. (1999) [48]

5.3 UTAUT

As was introduced earlier, Venkatesh et al. (2003) unified eight models of user acceptance, including TRA, into one model called UTAUT [81]. The model outperforms the eight individual models by predicting

69% of the variance in BI and 47% of the variance in Use Behavior (UB). The model can be found in Figure 6.

Use Behavior

UTAUT describes nine constructs, (in)directly influencing UB. UB was measured as actual use of the system, by analyzing the system logs. A central, mediating, construct in the model is BI. This is the extent to which a person aims to act in a certain way, in this case to use the IS. One of the predictors for BI is Performance Expectancy (PE).

Performance Expectancy

PE is 'the degree to which an individual believes that using the system will help him or her to attain gains in job performance'. PE is a strong predictor for BI, moderated by gender and age. This effect is stronger for men and younger workers.

Another predictor for BI is Effort Expectancy (EE), which is defined as 'the degree of ease associated with the use of the system'. EE is moderated by gender, age, and experience for predicting BI. This effect is stronger for women, particularly younger women, at early stages of experience.

Effort Expectancy

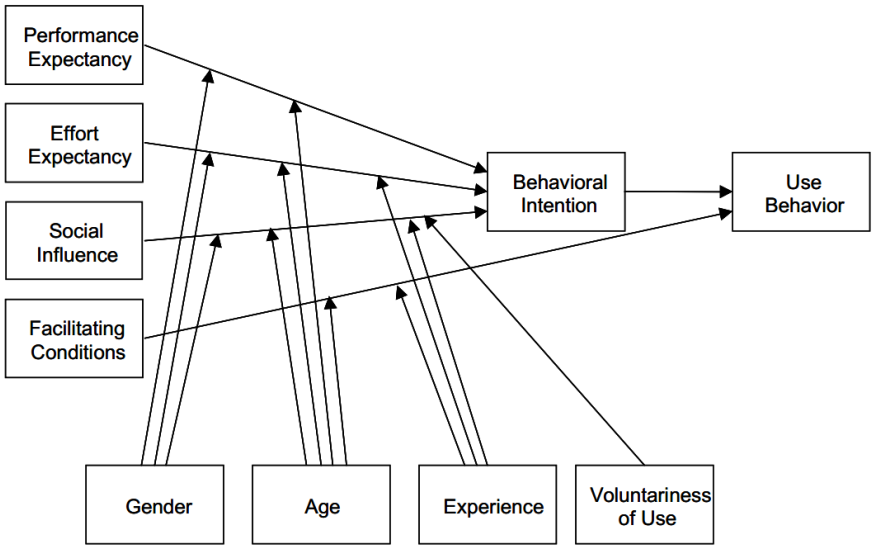

Figure 6: UTAUT, obtained from Venkatesh et al. (2003) [81]

Social Influence (SI) is defined as 'the degree to which an individual perceives that important others believe he or she should use the new system'. SI is moderated by gender, age, voluntariness, and experience. This effect is stronger for women and older persons. When use is mandatory, social influence has found to be relevant only in the early stages of individual experience with the technology. Its influence decreases over time and becomes non-significant.

Social Influence

Facilitating Conditions (FC) directly influences UB and is defined as 'the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system'. FC is found to be stronger for older workers, particularly with increasing experience.

Facilitating Conditions

5.3.1 *Elaborating on UTAUT*

One of the critiques of Limayem et al. (2007) on user acceptance research, including UTAUT, is that "it does not reveal what is really driving continued usage" [57]. When the degree of HT increases, the BI prediction of UB is worse. The authors suggest that HT has a moderating effect on the relationship between BI and UB and may fill the gap in understanding continued UB [57]. HT is defined as "the extent to which people tend to perform behavior (use IS) automatically because of learning". This definition is supported by Kim et al. (2005) [50], who tested other perspectives on HT.

In reaction to this, Venkatesh et al. (2012) researched UTAUT in a consumer's context and developed UTAUT 2 [82]. Specifically for this context, three constructs were added to the model, which are Hedonic Motivation (HM), Price Value (PV), and HT.

Hedonic Motivation
Price Value

HM is defined as "the fun or pleasure derived from using a technology" and is modeled as determinant of BI, moderated by gender, age and experience. The addition of HM is based on the work of Brown & Venkatesh (2005) and is confirmed once more in the research of Venkatesh et al. (2012) [82, 12].

The second added construct, PV, is only relevant in a consumer use context because users have to pay money for usage, whereas employees do not [82]. The last construct which was added is HT, which has an effect on BI as well as UB. HT is moderated by age, gender, and experience and the effects of HT are stronger for older men with high levels of experience.

5.4 USER ACCEPTANCE OF CRM SYSTEMS

Although a considerable amount of research is done on user acceptance of IS in general, research clearly falls short on the user acceptance of CRM. Two of the articles related to user acceptance in a CRM context are discussed below.

5.4.1 *Individual, organizational, and social characteristics*

Avlonitis & Panagopoulos (2005) researched additional determinants of CRM acceptance and the resulting performance of salespersons [4].

Technology Acceptance Model

In their article, they combine Technology Acceptance Model (TAM) and the IS Success model of DeLone and McLean (1992) into a new and extended model, which can be found in Figure 7 [30, 25].

The authors added individual, organizational, and social characteristics to the model, influencing CRM ease-of-use and CRM usefulness [4]. The individual characteristics are Computer Experience, Computer Self-Efficacy, and Innovativeness. The organizational factors are Training, User Participation, and Accurate Expectations. The social

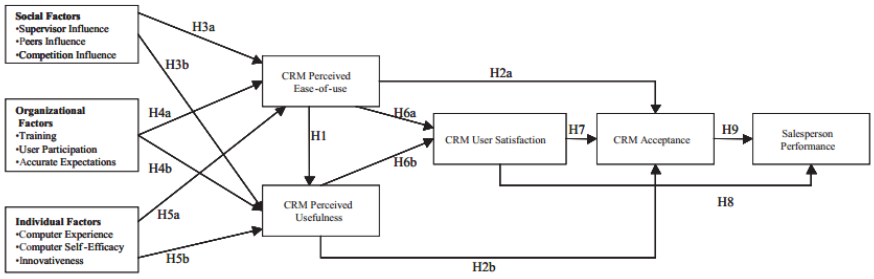

Figure 7: CRM acceptance model by Avlonitis & Panagopoulos (2005) [4]

factors are Supervisor Influence, Peers Influence, and Competition Influence.

In the results only Supervisor Influence and Accurate Expectations are found to have an influence on CRM Perceived Ease-of-use, as can be seen in Figure 8. User Participation is the only factor influencing CRM Perceived Usefulness.

Supervisor Influence, Competition Influence and Personal Innovativeness are found to have a direct effect on CRM Acceptance. User Participation also has an influence on User Satisfaction.

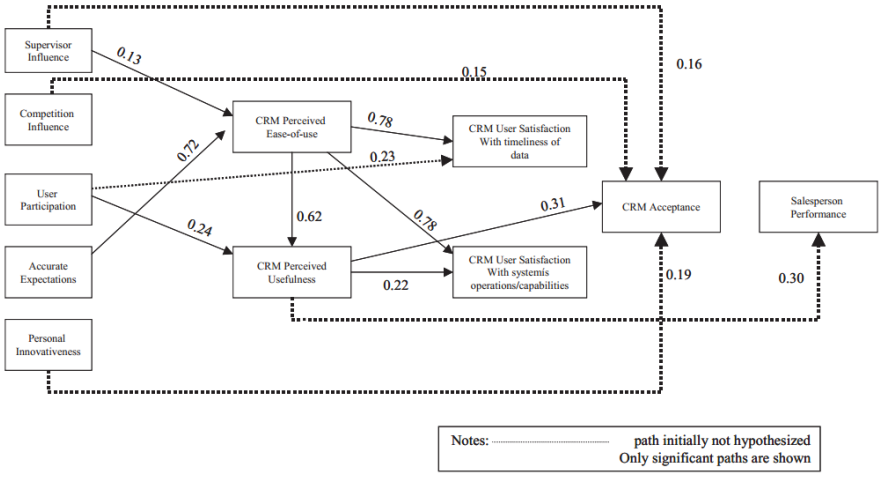

Figure 8: Resulting CRM acceptance model by Avlonitis & Panagopoulos (2005) [4]

5.4.2 *UTAUT and Task-Technology Fit*

Pai & Tu (2011) explored the factors affecting user acceptance of CRM systems [69]. The authors integrated UTAUT with TTF model of Goodhue & Thompson (1995) [40], "to explore the acceptance and use of CRM system in distribution industry". Task-Technology Fit "focuses on the match between user task needs and the available functionality of the IT" [32].

They used the definition of Goodhue & Thompson (1995) for their constructs [69, 40]. Therefore, task characteristics are defined in terms of interdependence and non-routine. The first dimension, which is interdependence, determines the degree to which tasks are related to more than one business function. The second dimension, non-routine, determines to what extent business problems are ill-defined and ad-hoc.

Goodhue & Thompson (1995) measured technology characteristics along two dimensions, the number of IS used by each respondent, and the department of the respondents [40]. The authors assumed different departments would pay different levels of attention on for example trainings. Moreover, they assumed that the characteristics of system is the same for all who use that system. TTF describes the degree "to which a technology assists an individual in performing his or her portfolio of tasks". The tested and resulting model by Pai & Tu (2011) can be found in Figure 9. The influence of Task-Technology fit on Behavioral Intention was found to be high.

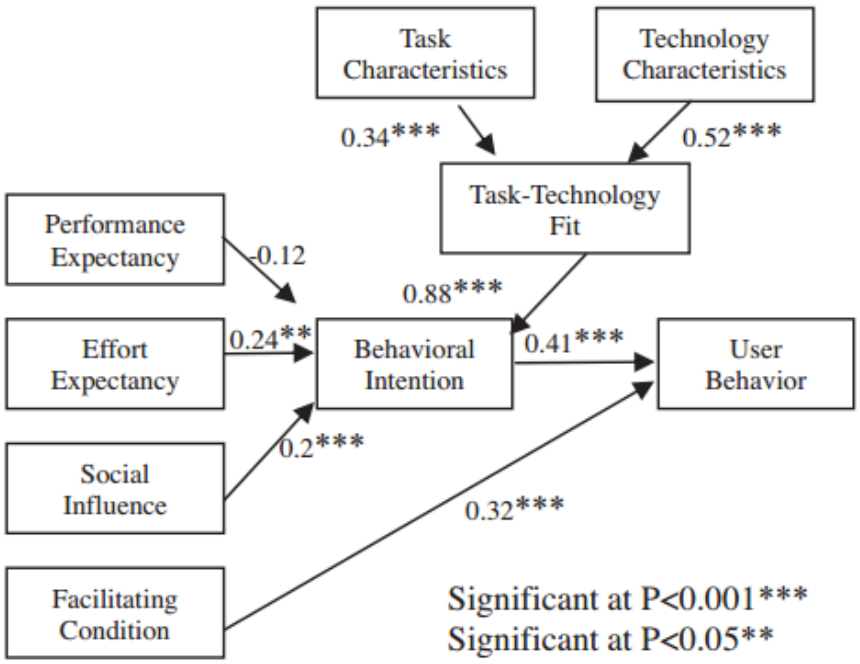

Figure 9: Integrated model of UTAUT and TTF, obtained from Pai & Tu (2011) [69]

5.5 CONCEPTUALIZATIONS OF USE BEHAVIOR

Venkatesh et al. (2008) used three different conceptualizations of system use, which are perceived frequency, duration and intensity [80]. These are subjective conceptualizations of UB, instead of the objective way of measuring system use with system logs. These conceptualiza-

tions can be used in combination with the objective way of measuring system usage, such as analyzing system logs [81].

The authors retrieved the conceptualizations from David et al. (1989) [27] and Straub et al. (1995) [76]. Both papers note that the correlation between perceived system use and actual system use is not perfect. Davis et al. (1989) handled this problem by not handling the conceptualization as an exact measure, but as a relative measure [9, 43]".

Part III

DEVELOPMENT OF THE MODEL

6

OPERATIONALIZATION OF CHANGE MANAGEMENT FROM END USER'S PERSPECTIVE

As mentioned in Chapter 4, the goal of CM for CRM is to change users' attitudes and behavior to match with the new IS. In this chapter, the different approaches to CM will be compared in order to operationalize CM from an end user's perspective. First, the end user related goals in the Avanade's Change Enablement method will be determined. Then Avanade's method will be compared with the ADKAR model and the six actions to deal with resistance to change. The 'Multi-layered CRM implementation approach' will not be included in the operationalization as it does not focus on individuals and is not detailed enough for operationalization.

6.1 AVANADE'S END USER RELATED CHANGE MANAGEMENT GOALS

Avanade's change enablement approach contains five processes with different goals, as shown in Figure 3. In Avanade's method, a change manager is appointed and his or her corresponding goals are defined. This change manager is responsible with regards to the change process. In order to operationalize CM from an individual's perspective in the Avanade method, the end user related goals are included in the operationalization. The goals which apply to the end user of the system can be found in Table 3[1]. The inclusion or exclusion of these goals is subjective. Therefore, a motivation is added to each goal, why it is included or not.

Table 3: Avanade's change method's applicability to end user

Process / objective	*Motivation*
Plan Change	
Identify all change stakeholders, and determine their needs, expectations, constraints, and interfaces for all stages of the project.	*Not included: Task of change manager, end user not involved.*
Clearly articulate the target state to guide the project's path forward.	*Not included: This goal is specifically aimed at higher-level management [2].*
Define how to organize and govern the change structure.	*Not included: Task of change manager, end user not involved.*

1 The goals can be found on Avanade's internal website
2 As stated in their internal methodology

Develop a Change Brand to provide a meaningful identity to the project.	*Not included: Task of change manager, end user not involved.*
Develop a Value Plan expressing how each part of the organization contributes to achieving project benefits.	*Not included: Task of change manager, end user not involved.*
Define a Change Plan to address the impacts and enable people and the organization to operate the new capability.	*Not included: Task of change manager, end user not involved.*
Assess the effort and resources associated with the change activities required to achieve the business case and objectives	*Not included: Task of change manager, end user not involved.*
Managing change	
Ensure ownership of the change within the business.	*Not included: Task of change manager, end user not involved.*
Ensure any external stakeholders are identified and appropriately involved.	*Not included: Task of change manager, end user not involved.*
Educate employees about the change initiative and the new ways of working - both at the executive level and at the operational level - to support understanding of issues during change.	*Included: End user directly involved.*
Establish and monitor a network of change agents to act as liaisons between project leadership and target stakeholders.	*Not included: Task of change manager, end user not involved.*
Develop joint understanding among senior executives, sponsors, and key stakeholders as to what they expect to achieve from the change effort and their role in making it happen.	*Included: Some end users are key stakeholders and should know and understand what is expected from them.*
Measure and report the progress of the change adoption.	*Not included: Task of change manager, end user not involved.*

Assess the readiness of the organization to undertake and enable the change and to conduct interventions to ensure change success, if in scope.	*Not included: Task of change manager, end user not involved.*
Enable the Organization	
Enable the change by aligning the organization and Human Resources (HR) processes to support the new processes and motivate individuals.	*Included: End users may be motivated by the Human Resources department to adopt to the change.*
Develop the required behavior, skills, capabilities, and knowledge to be successful in the target state.	*Included: Users should develop their abilities to adopt and reach targeted state.*
Design and Implement Training and End User Support	
Support employees to develop the behavior, skills, capabilities and knowledge required to effectively perform new or improved ways of working.	*Included: End users receive support to develop themselves.*
Define the training and end user support strategy and plan to effectively enable the change.	*Not included: Task of change manager, end user not involved.*
Design and develop training materials needed to achieve the new or improved way of working.	*Not included: Task of change manager, end user not involved.*
Design and develop end user support to sustain performance in the short and long term.	*Not included: Task of change manager, end user not involved.*
Deploy training and end user support to ensure adoption of new or improved ways of working.	*Included: End users receive training and support to improve adoption.*
Evaluate the effectiveness of training and end user support provided to optimize adoption of new or improved ways of working.	*Included: End users' feedback may be used to optimize adoption and identify knowledge gaps.*

Transition ownership of training and end user support to customer.	*Not included: Task of change manager, end user not involved.*
Build Leadership and Commitment	
Ensure the target state vision and end point are clearly articulated by senior leaders and understood by all levels of leadership in the organization.	*Not included: Task of change manager and leadership levels. End user not directly included.*
Ensure leaders remain aligned throughout the change.	*Not included: Task of change manager, end user not involved.*
Ensure senior leaders build and maintain alignment.	*Not included: Task of change manager, end user not involved.*
Help leaders understand the activities required to lead through the change.	*Not included: Task of change manager, end user not involved.*
Ensure leaders are prepared to lead actively throughout the change.	*Not included: Task of change manager, end user not involved.*
Ensure leaders cascade leadership down to the front-line supervisor level where most of the change typically occurs	*Not included: Task of change manager and front-line supervisors, end user not involved.*
Assist leaders with looking ahead and being proactive, as well as maintaining the momentum of the change.	*Not included: Task of change manager, end user not involved.*
Help leaders monitor and adjust the volume of change to achieve assimilation as the fastest possible rate.	*Not included: Task of change manager, end user not involved.*

Based on Table 3, the following goals are end user related and need to be taken into account for the operationalization of change management.

1. Educate employees about the change initiative and the new ways of working - both at the executive level and at the operational level - to support understanding of issues during change.

2. Develop joint understanding among senior executives, sponsors, and key stakeholders as to what they expect to achieve from the change effort and their role in making it happen.
3. Enable the change by aligning the organization and Human Resources (HR) processes to support the new processes and motivate individuals.
4. Develop the required behavior, skills, capabilities, and knowledge to be successful in the target state
5. Support employees to develop the behavior, skills, capabilities and knowledge required to effectively perform new or improved ways of working.
6. Deploy training and end user support to ensure adoption of new or improved ways of working.
7. Evaluate the effectiveness of training and end user support provided to optimize adoption of new or improved ways of working.

6.2 COMPARISON OF THREE CHANGE MANAGEMENT METHODS

The goal of comparing the different CM methods is to operationalize CM from a user's perspective, covering all aspects. In Figure 10 the Avanade's change enablement method, the ADKAR model, and the six change resistance reduction ways are mapped. The item numbers of the Avanade method correspond to the goals mentioned in the previous section.

The factors of the ADKAR model are proposed as factors of CM, because the model suggests to cover all CM aspects from user's perspective. For each of the factors in the ADKAR model, the link to the other two models is explained. First the connection with the method of Kotter and Schlesinger (2008) is be discussed, which is explained is 4.4.1 [53]. Then the connection with the Avanade approach is be reviewed, which can be found in 4.5.2.

6.2.1 *Awareness*

The 'Education and communication' resistance reduction way of Kotter and Schlesinger (2008) 'helps people see the need for and the logic of a change' [53]. This shows similarities with the awareness factor of the ADKAR model. To raise awareness, employees should know why the change is needed. Based on this similarity, 'Education and communication' and Awareness can be linked.

The second item of the Avanade Change Enablement method is 'develop joint understanding among senior executives, sponsors, and

key stakeholders as to what they expect to achieve from the change effort and their role in making it happen'. This indicates an introduction to the change, as it discusses what is expected from the new IS and what their role is in the change. By having this introduction, awareness to change is created. Based on this relationship, the second item of the Avanade Change Enablement method and Awareness can be linked.

6.2.2 *Desire*

Participation & involvement can be mapped with Desire because Participation & involvement aims to leads commitment, which is be needed for change success [53]. Desire is willingness to support and participate in the change [45]. Based on this mutual overlap, Desire can be linked to Participation & involvement.

The third item of the Avanade method, 'aligning the organization and Human Resources (HR) processes to support the new processes and motivate individuals', tries to create an incentive to change. This incentive should create a desire to change. Therefore, 'Enable Change (3)' and Desire can be linked.

6.2.3 *Knowledge*

'Education & communication' aims to create knowledge, since employees who are educated about the change, overcome problems such as 'inadequate or inaccurate information and analyses'. Moreover, the people get the knowledge on what the change is expected to look like. Based on this relationship, 'Education & communication' can be connected to Knowledge.

'Educating employees (1)' for a change makes sure that the employees get the right level of knowledge, which is needed for the change. Because the education of employees aims at creating knowledge about the change, 'Educating employees (1)' can be linked to Knowledge of the ADKAR model.

6.2.4 *Ability*

When the previous three aspects of the ADKAR model are fulfilled, an employee should have the ability to change. 'Facilitation & support' may support an employee to increase his or her ability to change. When an employee does not want to change 'Explicit & implicit coercion' can be used to force an employee to change. Therefore, both 'Facilitation & support' and 'Explicit & implicit coercion' items can be linked to ability.

'Behavior, skills, capability, and knowledge (4)' need to be developed to address the ability to change. 'Trainings and End user sup-

port (6)' and 'Support employees to develop (5)' should make the employee able to change. Therefore, these three items are linked to Ability.

6.2.5 *Reinforcement*

Reinforcement makes sure the employee will stick to the changes situation. According to Lewin, without reinforcement, change could be short-lived [56] (as cited by [17]). 'Negotiating & Agreement' may help to make sure employees stick to the change, even if the employee has certain requirements or problems. 'Evaluate (7)' might also help to keep the new behavior reinforced, as identified problems may be solved to stick to the new situation.

6.3 CHANGE MANAGEMENT APPROACHES MAPPING

In Figure 10 the mutual overlap of the three different methods is mapped. As mentioned earlier, the factors of the ADKAR model are used for the operationalization of CM. CM can now be defined as "the extent to which an employee has the awareness, desire, knowledge, ability and reinforcement to change and uphold behavior, attitude & skills".

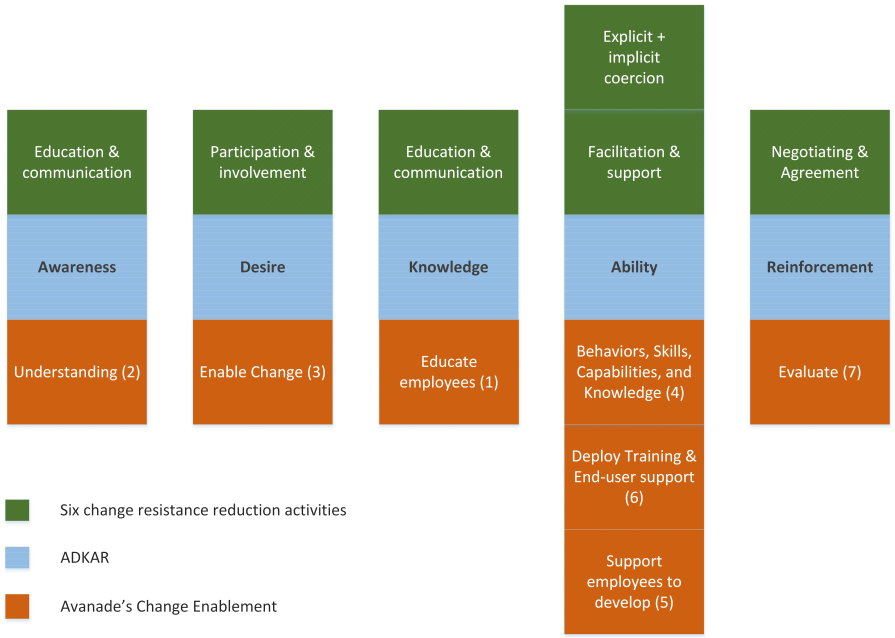

Figure 10: Change management mapped from user's perspective

7

DETERMINING USER ACCEPTANCE FOR CRM

In this chapter, the current understanding of user acceptance is exploited to prepare a model which is applicable to the user acceptance of CRM systems. The core of the user acceptance model is the UTAUT model of Venkatesh et al. (2003), as it unified eight models with a high explanatory power [81]. As use of the CRM is mandatory in this organizational setting, voluntariness of use is dropped. Some constructs are added to the core model, based on their applicability to CRM. In the coming sections, possible additional constructs are discussed, based on the results of Chapter 5.

7.1 NOT INCLUDED CONSTRUCTS

Venkatesh et al. (2012) updated UTAUT model to UTAUT 2, by adding several new constructs for consumer use context [82]. One of these constructs is HM, which is the pleasure of using an IS. Resulting from the upcoming trend of gamification, this construct may be useful [31]. However, currently Avanade does not work with gamification and therefore, no variance is expected in HM. Therefore, HM will not be included in the model.

Another construct which is not included in the model is PV [82]. Because the users of the system do not pay for the IS themselves, the construct is not relevant in a CRM context [82].

7.2 ADDITIONAL CONSTRUCTS

As discussed in Chapter 5, several constructs were added to UTAUT, or one of the covered models in UTAUT. Two of these constructs are HT and TTF.

HT is found to be a critical factor in post-adoption use [57, 50, 82]. The explanatory power of BI on UB is found to decrease, when behavior becomes more habitual [57, 82]. In UTAUT 2, HT is modeled as factor influencing BI as well as UB, moderated by gender, experience and age [82]. Because HT seems to play such an important role in the use of IS, HT is added to the core model.

For the prediction of CRM usage, Pai & Tu (2011) [69] integrated the TTF model of Goodhue & Thompson [40] with UTAUT, as can be found in Figure 11. TTF has positive influence and a high explanatory power on BI. Therefore, TTF suggests to be a useful addition to the core model.

Because the task and technology characteristics may vary among the different implementations of a CRM system[1], only Task-technology is added to the core model. Moreover, adding extra constructs to TTF does not give extra insight in BI or UB.

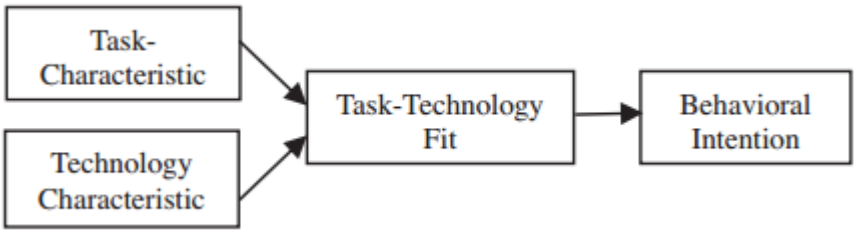

Figure 11: Part of Task-Technology Fit included in the model of Pai & Tu (2011) [69]

7.3 CONCEPTUALIZATIONS OF USE BEHAVIOR

As mentioned in 5.5, Venkatesh et al. (2008) used three different, subjective, conceptualizations of UB. Namely frequency, duration and intensity [80]. The advantage of these conceptualizations is that no system changes are needed to measure UB. Since Avanade does not measure UB currently, these three conceptualizations are used. It has to be noted however, that using these conceptualizations implicates that the outcomes of the measured UB cannot be taken as exact measure, but as a relative measure [9, 43].

7.4 ADDITIONAL DETERMINANTS OF CRM ACCEPTANCE

Avlonitis & Panagopoulos (2005) researched additional determinants of CRM acceptance [4], as discussed in 5.4.1. Supervisor influence and accurate expectations are determined to have a significant influence on CRM Perceived Ease-of-use, which is incorporated in UTAUT as EE [81]. User participation is found as a factor influencing perceived CRM usefulness, merged in UTAUT as PE [81]. Supervisor influence, competition influence and personal innovativeness had a direct effect on CRM Acceptance, which matches BI in UTAUT [4]. User Participation resulted to have an influence on User Satisfaction.

All these influences are a useful addition to the core model. However, SI of UTAUT covers supervisor influence as well as competition influence, because this is part of the definition of SI which is the 'degree to which an individual perceives that important others believe he or she should use the new system' [81].

1 At some customers of Avanade, 80% of the code may be custom made, and at some customers almost nothing may be custom made.

Both accurate expectations and user participation are not incorporated in UTAUT, therefore these two concepts are a useful addition to the core model.

8

INTEGRATING CHANGE MANAGEMENT AND USER ACCEPTANCE FOR CRM

In this Chapter, CM and user acceptance are merged into one model based on Chapter 6 & 7. As mentioned in Chapter 7, the core for the model is UTAUT. HT and TTF are added to the core model, as well as the conceptualizations of UB. Furthermore, the determinants for CRM success should be integrated.

CM, which is operationalized in 6.3 as "the awareness, desire, knowledge, ability and reinforcement to change and uphold behavior, attitude & skills", is expected to have on the user acceptance part of the model. Hypothesis are proposed to predict the effect of CM on the user acceptance part of the model. The developed model can be found in Figure 12.

8.1 ADDITIONAL DETERMINANTS OF CRM ACCEPTANCE

As discussed in 7.4, accurate expectations of the system and user participation are additional determinants of CRM acceptance and should therefore be included in the model. However, user participation is already covered by the Desire factor of CM, since Desire is the willingness 'to support and participate in the change' [45]. Accurate expectations is covered by the Awareness and Knowledge factors of CM, as the end users gain awareness and knowledge about what needs to be changes, which should lead to accurate expectations. Consequently, no additional determinants of CRM acceptance are included in the model.

8.2 CHANGE MANAGEMENT IN THE MODEL

Based on Chapter 6, the aspects awareness, desire, knowledge, ability, and reinforcement of CM are integrated into the model. It is expected that CM influences PE, EE, SI, and FC.

8.2.1 *Change management's influence on Performance Expectancy*

New IS, and consequently CRM systems also, are introduced to further increase job performance, organization's efficiency and effectiveness [26, 44]. PE has been defined as 'the degree to which an individual believes that using the system will help him or her to attain gains in job performance' [81]. CM is expected to influence PE, because if the end user is increasing its awareness of the change, to further increase

job performance, organization's efficiency and effectiveness [26, 44], he or she should also be aware of the performance benefits. Based on this relationship it is expected that CM will increase PE.

Hypothesis 1: CM will increase PE.

8.2.2 *Change management's influence on Effort Expectancy*

EE has been defined as 'the degree of ease associated with the use of the system' [81]. CM programs contain activities such as trainings and support to make the employees able to work with the IS. Trainings and support should also make working with the system easier. Therefore, CM is expected to increase perceived EE.

Hypothesis 2: CM will increase EE.

8.2.3 *Change management's influence on Social Influence*

SI has been defined as 'the degree to which an individual perceives that important others believe he or she should use the new system' [81]. When management stimulates the change to the new IS, this will put a certain pressure on the employees and motivate them to change. As a result, CM is expected to increase the perceived SI.

Hypothesis 3: CM will increase SI.

8.2.4 *Change management's influence on Facilitating Conditions*

FC has been defined as 'the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system' [81]. In the CM process, trainings, end user support and discussions may take place to facilitate employees in adoption to the new IS. Therefore, it is expected that CM will increase perceived FC.

Hypothesis 4: CM will increase FC.

8.2.5 *Change management's influence on Task-Technology Fit*

When end users are participating in a change, knowledge gaps may be solved, as mentioned in 4.4.1, and problems may be identified in the early stages. This feedback can be used to improve the way of working with the system and make the technology fit the tasks. Based on this relationship, it is expected that CM has influence on the TTF.

Hypothesis 5: CM will increase TTF.

8.3 HABIT TAKING OVER

When HT increases, the predictability of BI on UB is found to decrease [57, 1] and HT becomes more important for predicting UB. Indirectly, it is expected that the effect of change management will fade out over time. However, change management may be relevant in the beginning to facilitate people to adopt and develop the HT.

Venkatesh et al. (2012) modeled HT as construct influencing BI as well as UB, moderated by Age, Gender and Experience [82]. The effect is stronger for older men with high levels of experience with the technology. When the end user just started using the system, no HT has been developed. Therefore, it is expected that HT does not influence BI and UB when the user just adopted.

Hypothesis 6(a): Habit will not influence BI and UB for people with less experience.

On the other hand, in higher experience levels HT was found to be a critical factor for predicting UB [57, 50, 82]. Therefore, it is theorized that HT will increase and have a significant influence on BI and UB. This indirectly decreases the impact of change management over time.

Hypothesis 6(b): Habit will have a positive influence on BI and UB for people with higher levels of experience.

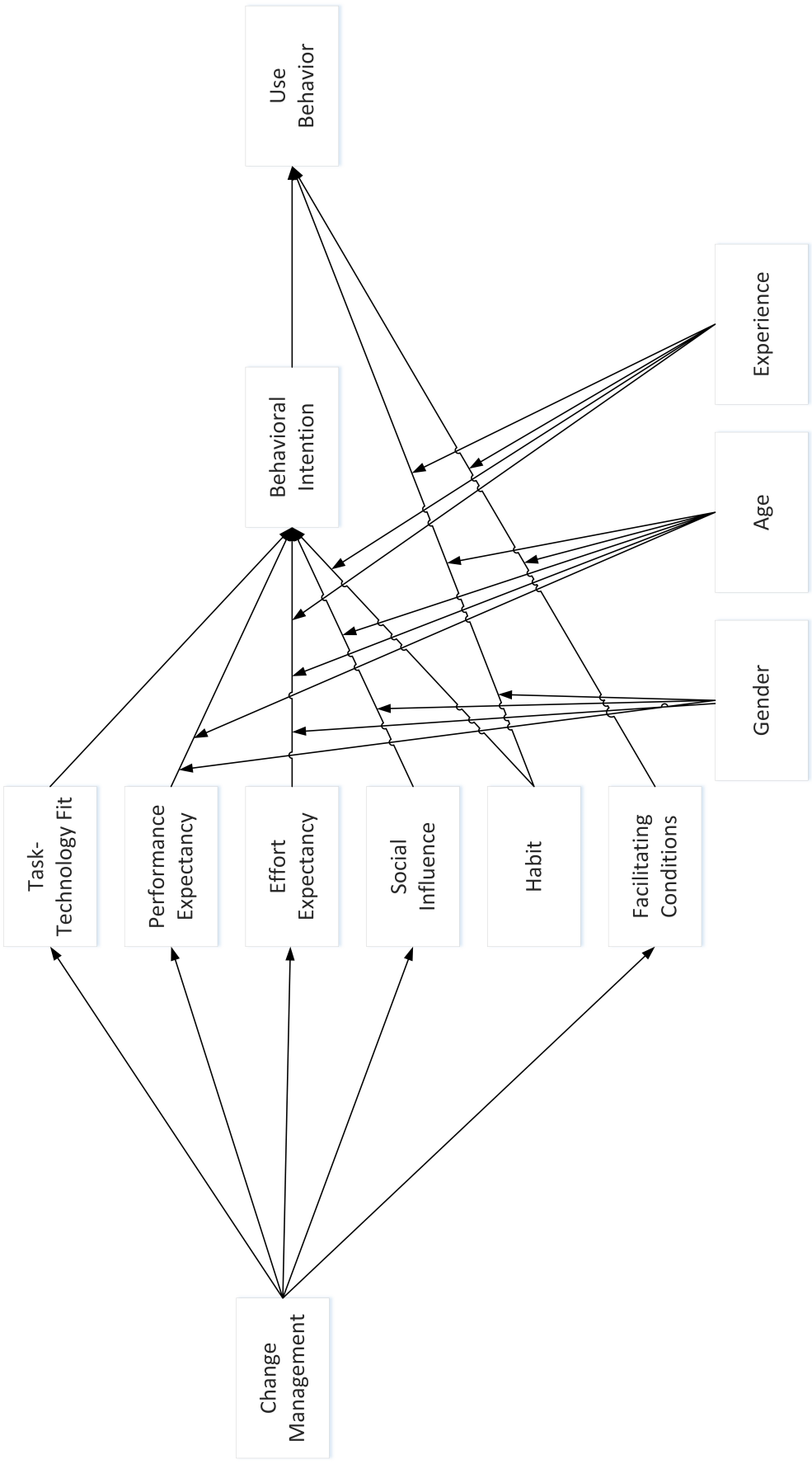

Figure 12: The constructed model

9 EMPIRICAL VALIDATION

A field survey will be conducted among the end users of different implementations of the CRM systems, based on Microsoft Dynamics CRM. According to Bhattacherjee (2012), field surveys capture "a snapshot of practices, beliefs, or situations from a random sample of subjects" [8]. The strength of field surveys is external validity, as data is collected in field settings. However, cause-effect relationships are hard to determine, called internal validity. Moreover, the internal validity may be threatened by 'socially desirable' responses. This is mediated by anonymizing the results of the survey, but "there is practically no way of overcoming the social desirability bias in a questionnaire survey" [8].

Venkatesh et al. (2003) did a longitudinal study at four organizations from low to higher levels of experience [81]. Because of the time-span of the thesis, it is not possible to do a longitudinal study. However, this survey will be conducted at different companies with differences in average levels of experience.

As mentioned in the Approach (2.1), the field survey is allowed to take up to five minutes. The survey can be found in Appendix A. The survey is developed in Dutch, as the "end users would not understand" an English version. If possible, the items of previous studies are reused and translated to Dutch. The sources of the English items can be found in Table 4. Moreover, extra items are created to make sure the language barrier would not create a gap in the definition of the constructs. For each of the constructs which needs more explanation, in terms of developing questions, will be described in Section 9.1.

Table 4: Sources of questionnaire items

General information	Venkatesh et al. (2003) [81]
Habit	Limayem, Hirt & Cheung (2007) [57]
Task-Technology Fit	Lin & Huang (2008) [59]
Performance Expectancy	Venkatesh et al. (2003) [81]
Effort Expectancy	Venkatesh et al. (2003) [81]
Social Influence	Venkatesh et al. (2003) [81]
Facilitating Conditions	Venkatesh et al. (2003) [81]
Behavioral Intention	Venkatesh et al. (2003) [81]
Use Behavior	Venkatesh et al. (2008) [80]

Change management	Not applicable

9.1 INDICATORS

In this section, the constructs which needs extra attention for creating items for the survey are described below.

9.1.1 *Task-Technology Fit*

The survey that Pai & Tu used for determining TTF was not mentioned in the paper, as it was developed in Chinese[1] [69]. To keep the explanatory power of the TTF model on BI, similar research is retrieved.

Zhou, Lu & Wang also integrated TTF of Goodhue & Thompson with UTAUT for mobile banking user adoption [88, 40]. Their items regarding the TTF construct are based on the work of Lin and Huang [59]. These questions are reused as basis for the Dutch translation.

9.1.2 *Habit*

The items used by Venkatesh et al. (2012) for determining HT are based on the work Limayem & Hirt (2003) [58, 82]. Limayem, Hirt & Cheung (2007) also used the items generated by Limayem & Hirt (2003) [58]. As Limayem & Hirt (2003)'s work is unavailable, Limayem, Hirt & Cheung's (2007) items are used and converted to a CRM context [57]. A well-designed self-reported measure of HT is found to be a good indicator for the degree to which a behavior is habitual [83] (as cited by [57]).

9.1.3 *Measurement of Use Behavior*

As mentioned in 7.3, UB can be conceptualized as frequency, duration and intensity [80]. For frequency and intensity, the authors used Likert scale items. Duration was measured in hours. For comparison purposes, it is important to determine the duration of usage relative to the number of hours the employee works per week. Therefore, participants are asked to fill in the duration for a 40 hours working week.

9.2 ASSESSMENT OF RELIABILITY & VALIDITY

For the constructs of which the indicators are reused, seven items are translated and created. For perceived CM, thirty items are developed. Then, validity and reliability is assessed. The participants in the vali-

1 Mr. Pai was called to ask for the survey.

dation process are interns at Avanade Netherlands, mainly studying Computer Science and Business Information Technology at University of Applied Sciences.

The first step of the validation process is done by a group of five to ten persons in three rounds, assessing clarity, readability & semantic meaning, and selecting the right construct, as suggested by Bhattacherjee (2012) [8]. Three rounds were needed to have an acceptable amount of items with an inter rater reliability of 70%, which is considered an adequate rate [67].

In total, six people assessed face validity & content validity for the remaining items. Respondents assessed whether they thought the item matches the construct and is necessary for the measurement of the construct. If 70% of the persons agreed on face validity and content validity the question was accepted. When people said they were uncertain, this would count for half [2].

All of the constructs remained with at least three items. Only for UB, two out of the three previously validated questions were accepted. The indicator measuring the number of hours was not validated. The author expects this was caused by the scale which was not mentioned clearly and a small mistake in the translation to Dutch. This question was retranslated and inserted into the questionnaire. A minimum of three items per construct is acceptable as the survey can only take five minutes and most constructs were already validated by other authors (see Table 4). Fourteen questions remained for the change management construct.

Six persons took part in the pilot. A fake case was used for the pilot, since no companies were able to take part during the pilot period. The case was introduced and people were motivated to start using the Microsoft Dynamics CRM system. A small introduction to the system was given and the people could practice themselves for about five to ten minutes. Then the survey was conducted.

An exploratory factor analysis was done to assess convergent and discriminant validity. Factors were extracted with an eigenvalue higher than 1.0. Items with same-factor factor loading $\geqslant 0.60$, and cross factor loading of $\leqslant 0.30$ were accepted as stated by Bhattacherjee (2012) [8]. For the resulting items, Cronbach's Alpha was determined. The results per construct can be found in Table 5.

Different authors write about acceptable values of Cronbach's Alpha, starting from 0.70 [10, 79]. One of the constructs, UB, reported a Cronbach's Alpha lower than 0.70. The scale item about the use in hours greatly reduced the Cronbach's Alpha value, as the indicated the value would be .848 without this item. This was probably caused by the pilot setting, as the participators did not know how long they

2 For example, if four out of six agree on face validity and content validity, one disagrees and one is uncertain the acceptance percentage would be 4/6*100+0.5*1/6*100=75%.

would normally use the system, as they used it for just five to ten minutes. This item was also not dropped because it represents one of the three conceptualizations of UB (see 5.5).

Table 5: Cronbach's Alpha results of pilot

Construct	**Cronbach's Alpha**
TTF	0.750
PE	0.872
HT	0.762
EE	0.968
SI	0.753
FC	0.971
BI	0.966
UB	0.638
CM	0.903

9.3 SURVEY

Because all the potential companies participating in the survey are Dutch, the survey was developed in Dutch. However, after asking potential participating companies, not much progress was made. After that, it was decided to translate the survey to English, to broaden the scope of research. All questions can be found in Appendix A.

9.4 CASES

The surveys is conducted among the end users of CRM at customers of Avanade. Moreover, different groups at LinkedIn are asked to fill in the survey. All of the participating companies have a different implementation of Microsoft Dynamics CRM. Both companies are described below. Afterwards, the approach to reach people on LinkedIn is be described.

9.4.1 *Company X*

Company X manages the contact with the hotel and catering industry, to sell its products. The department started using Microsoft Dynamics CRM in December 2013. In total, 120 employees are working with the CRM system, out of which 80 users are in the Sales division and 40 users are in the Sales Support division.

The Sales people are visiting customers every day, afterwards Sales Support submits the information to the CRM system. Sales uses the

CRM system to retrieve customer information. It is essential that both groups work together to keep information up to date.

Before the employees started using the system, they got different kinds of exercises and two days of training. Someone is available for extra help or training new users. However, at management level, the feeling was that both parts have different perceptions of the CRM system and some users still have difficulties with using the system.

The survey is used to determine the differences in use for the two divisions and to determine problems with user acceptance. If any problems are detected, measures may have to be taken.

Before the survey was accepted at Company X, some changes had to be made to the questions. Otherwise, the employees 'would not understand'. The 'new' version of the survey was also conducted at the other company and on LinkedIn.

9.4.2 *Company Y*

Company Y employs about 350 to 400 persons, depending on the season, out of whom 120 use Microsoft Dynamics CRM.

Company Y runs two implementations of CRM, one for retail and one for the hotel and catering industry. In retail, the system is mainly used for marketing purposes in for example promotions in a supermarket, while in the hotel and catering industry, the system is used for contracting.

Company Y started the CRM project in the summer of 2012, the first implementation went live in the beginning of 2013, and the second in October 2013. The management team was highly committed to the CRM project, as they wanted to gain insight in the potential benefits of a new customer.

The way of working did not change with the new system, as the processes have stayed the same for five years already. Many of the users already work with a CRM for about three to seven years. No specific trainings have been provided to the users, as it was 'just' a different system and nothing else changed. The CRM system is the only system the users work with.

Before a new functionality of a CRM system is implemented, the employees work with a paper prototype for some time. When this fits their needs, it is implemented in the system.

9.4.3 *LinkedIn*

As mentioned 9.3, the survey is translated to English. This way, the survey could be posted on LinkedIn. In different Microsoft Dynamics CRM groups, the author asked twice to fill in the English version of the survey. The following groups we asked to take part in the research.

- Dynamics CRM User Group (CRMUG) [3]
- Microsoft Dynamics CRM. [4]
- MS Dynamics CRM [5]

3 https://www.linkedin.com/groups?gid=1224317
4 https://www.linkedin.com/groups?gid=21231
5 https://www.linkedin.com/groups?gid=114154

Part IV

DATA ANALYSIS

10 RESULTS OF THE CRM SURVEY

Partial Least Squares

In this chapter, the results of the survey is discussed, as well as validity, reliability and significance. Since Partial Least Squares (PLS) allows to test a model with several interaction terms, PLS is used to test the proposed model [23]. SmartPLS is used in combination with the method of Wong (2013) to assess validity and reliability as well as the significance of various models [86, 74]. SmartPLS is also used by Venkatesh et al. (2012) [82].

In Chapter 9, Cronbach's alpha was calculated for assessing internal consistency reliability. However in this variant of PLS (PLS-SEM), composite reliability is found to be a better measure for internal consistency reliability [5], as it "prioritizes indicators according to their individual reliability" [42].

10.1 RELIABILITY AND VALIDITY

In this section, the reliability and validity of the survey are assessed. The method of Wong (2013) is primarily used for this purpose, as well as the paper of Venkatesh et al. (2012), to cover all aspects of reliability and validity [86, 82].

10.1.1 *Indicator reliability*

According to Hulland (1999), indicator reliability should be higher than 0.4, but preferably higher than 0.7 [46]. In Table 6, indicator reliability can be found. The results of indicator reliability suggest there are no major problems. However, indicator reliability is relatively low for CM and UB. In UB, this is mainly the case for hours of use and frequency.

Table 6: Indicator reliability

	CM	EE	FC	HT	BI	PE	SI	TTF	UB
C1_10	**0,61**	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
C1_12	**0,70**	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
C1_13	**0,63**	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
C1_4	**0,52**	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
C1_8	**0,69**	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
E1_1	0,00	**0,86**	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Table 6: Indicator reliability

	CM	EE	FC	HT	BI	PE	SI	TTF	UB
E1_3	0,00	**0,86**	0,00	0,00	0,00	0,00	0,00	0,00	0,00
E1_4	0,00	**0,83**	0,00	0,00	0,00	0,00	0,00	0,00	0,00
E1_5	0,00	**0,85**	0,00	0,00	0,00	0,00	0,00	0,00	0,00
E1_7	0,00	**0,88**	0,00	0,00	0,00	0,00	0,00	0,00	0,00
F1_2	0,00	0,00	**0,87**	0,00	0,00	0,00	0,00	0,00	0,00
F1_3	0,00	0,00	**0,90**	0,00	0,00	0,00	0,00	0,00	0,00
F1_4	0,00	0,00	**0,86**	0,00	0,00	0,00	0,00	0,00	0,00
H1_1	0,00	0,00	0,00	**0,89**	0,00	0,00	0,00	0,00	0,00
H1_2	0,00	0,00	0,00	**0,90**	0,00	0,00	0,00	0,00	0,00
I1_2	0,00	0,00	0,00	0,00	**0,73**	0,00	0,00	0,00	0,00
I1_4	0,00	0,00	0,00	0,00	**0,93**	0,00	0,00	0,00	0,00
P1_1	0,00	0,00	0,00	0,00	0,00	**0,92**	0,00	0,00	0,00
P1_2	0,00	0,00	0,00	0,00	0,00	**0,92**	0,00	0,00	0,00
P1_5	0,00	0,00	0,00	0,00	0,00	**0,93**	0,00	0,00	0,00
P1_7	0,00	0,00	0,00	0,00	0,00	**0,95**	0,00	0,00	0,00
S1_2	0,00	0,00	0,00	0,00	0,00	0,00	**0,84**	0,00	0,00
S1_4	0,00	0,00	0,00	0,00	0,00	0,00	**0,88**	0,00	0,00
T1_1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,94**	0,00
T1_2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,92**	0,00
U1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,40**
U2_1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,53**
U3_1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,82**

10.1.2 *Internal consistency reliability*

According to Bagozzi & Yi (1988), composite reliability should be higher than 0.6, and preferably higher than 0.7 [5]. The results can be found in Table 7 in the column "Composite Reliability". The outcomes suggest the internal consistency reliability to be good, as all values are 0.8 or higher.

10.1.3 *Convergent validity*

According to Bagozzi & Yi (1988), convergent validity says the Average Variance Extracted (AVE) should be higher than 0.5 [5]. As can be seen in Table 7, all AVE values are above 0.5. No problem is thus

Average Variance Extracted

expected in convergent validity. Again, the values are relatively low for CM and UB.

Table 7: Composite reliability and AVE

	Composite Reliability	AVE	$\sqrt{AVE}$
CM	0,89	0,63	0,95
EE	0,97	0,86	0,98
FC	0,95	0,87	0,98
HT	0,95	0,90	0,97
BI	0,91	0,83	0,95
PE	0,98	0,93	0,99
SI	0,93	0,86	0,96
TTF	0,96	0,93	0,98
UB	0,80	0,58	0,90

10.1.4 *Discriminant validity*

To confirm discriminant validity, Fornell and Larcker (1981) suggest the square root of AVE of each latent variable should be greater than the correlations with the other latent variables [35]. All values can be found in Table 8. The square root of AVE can be found on the intersection of the same constructs. Discriminant validity is suggested to be good, as all square roots of AVE are higher than the correlations with other constructs.

Table 8: Fornell-Larcker test for discriminant validity [35]

	CM	EE	FC	HT	BI	PE	SI	TTF	UB
CM	**0,79**								
EE	0,57	**0,93**							
FC	0,40	0,50	**0,93**						
HT	0,49	0,66	0,40	**0,95**					
BI	0,28	0,27	0,42	0,33	**0,91**				
PE	0,63	0,52	0,16	0,49	0,12	**0,96**			
SI	0,40	0,31	0,30	0,32	0,34	0,20	**0,93**		
TTF	0,47	0,44	0,31	0,23	0,13	0,51	0,06	**0,96**	
UB	0,21	0,29	0,04	0,33	0,15	0,20	-0,04	0,15	**0,76**

Discriminant validity is also assessed by determining factors' loadings and cross-factor loadings, which can be found in Table 10. This

way of assessing discriminant validity is also performed by Venkatesh et al. (2012) [82]. For all loadings, the construct the loading belongs to should be at least 0,1 higher than the loadings to other constructs [60, 37]. The results suggest discriminant validity is suggested to be fine.

UB is operationalized using three formative indicators[1], namely hours of use per week, frequency and intensity. The outer weights can be found in Table 9 and show especially low outer weighting for U1. Nevertheless, as suggested by Wong (2013), U1 is not dropped because its outer loading is significant [86].

Table 9: Outer weights of Use Behavior

Indicator	Weight
U1 (Hours)	-0.03
U2_1 (Frequency)	0.23
U3_1 (Intensity)	0.89

Table 10: PLS loadings and cross-loading

	CM	EE	FC	HT	BI	PE	SI	TTF	UB
C1_10	**0,78**	0,50	0,31	0,33	0,24	0,45	0,29	0,42	0,18
C1_12	**0,84**	0,46	0,30	0,33	0,17	0,46	0,30	0,37	0,27
C1_13	**0,79**	0,43	0,40	0,48	0,36	0,51	0,44	0,36	0,26
C1_4	**0,72**	0,36	0,27	0,35	0,18	0,50	0,30	0,33	-0,03
C1_8	**0,83**	0,50	0,29	0,44	0,15	0,59	0,25	0,37	0,11
E1_1	0,54	**0,93**	0,41	0,58	0,20	0,55	0,28	0,41	0,34
E1_3	0,51	**0,93**	0,46	0,63	0,23	0,46	0,33	0,35	0,25
E1_4	0,52	**0,91**	0,53	0,60	0,32	0,41	0,29	0,45	0,24
E1_5	0,48	**0,92**	0,46	0,63	0,23	0,47	0,25	0,38	0,25
E1_7	0,59	**0,94**	0,47	0,60	0,26	0,54	0,28	0,45	0,24
F1_2	0,34	0,43	**0,93**	0,42	0,44	0,11	0,29	0,23	0,07
F1_3	0,41	0,48	**0,95**	0,35	0,38	0,17	0,27	0,33	-0,01
F1_4	0,36	0,51	**0,93**	0,36	0,36	0,16	0,27	0,32	0,06
H1_1	0,42	0,57	0,33	**0,95**	0,34	0,42	0,31	0,13	0,36
H1_2	0,50	0,68	0,43	**0,95**	0,29	0,50	0,30	0,30	0,26
I1_2	0,18	0,12	0,24	0,14	**0,86**	0,07	0,28	0,16	0,17

1 Formative indicators are used when the indicators of a construct are not interchangeable among each other. Reflective indicators are highly correlated and interchangeable, and try to measure the same. For more information, please check Wong (2013) [86]. In this research, only UB was modeled with formative indicators.

Table 10: PLS loadings and cross-loading

	CM	EE	FC	HT	BI	PE	SI	TTF	UB
I1_4	0,30	0,32	0,47	0,40	**0,96**	0,13	0,33	0,10	0,12
P1_1	0,62	0,51	0,12	0,46	0,10	**0,96**	0,17	0,50	0,19
P1_2	0,58	0,47	0,11	0,43	0,08	**0,96**	0,15	0,47	0,21
P1_5	0,62	0,53	0,20	0,52	0,12	**0,97**	0,23	0,49	0,20
P1_7	0,62	0,52	0,18	0,47	0,15	**0,98**	0,21	0,50	0,20
S1_2	0,33	0,31	0,30	0,34	0,30	0,18	**0,92**	0,07	-0,03
S1_4	0,40	0,27	0,26	0,26	0,32	0,19	**0,94**	0,04	-0,05
T1_1	0,47	0,45	0,30	0,22	0,14	0,52	0,08	**0,97**	0,11
T1_2	0,43	0,40	0,30	0,22	0,11	0,47	0,04	**0,96**	0,18
U1	0,16	0,15	0,03	0,15	-0,03	0,15	-0,12	0,05	**0,63**
U2_1	0,07	0,11	0,02	0,23	0,15	0,08	-0,03	0,03	**0,73**
U3_1	0,23	0,34	0,05	0,33	0,16	0,23	0,00	0,20	**0,90**

10.1.5 *Multicollinearity*

Multicollinearity is the result of two formative indicators highly correlated to each other. Small changes in one indicator may have large impact on the other indicator. To verify no multicollinearity exists in this model, the formative indicators of UB have been calculated. The results suggest that multicollinearity is not a problem, since all Variance Inflation Factor (VIF)'s are lower than 5 [42, 86].

Variance Inflation Factor

10.1.6 *Common Method Variance*

Common Method Variance

Common Method Variance (CMV) is assessed to make sure the model cannot be explained by a single factor. CMV is the 'variance that is attributable to the measurement method rather than to the constructs the measures represent' [73, 54].

To test for CMV, Harman's single factor test is conducted. The test fails if a single factor emerges from the factor analysis or one general factor accounts for the majority of the covariance among the variables [54]. The data passed the Harman's single factor test, which means no major single factor is found.

10.2 RESPONSES

In total, 127 persons participated in the survey. In Table 11, the overall results and the results per group are provided in terms of the Mean (μ) and Standard Deviation (σ).

Table 11: Results per group and total

	X - Sales (30)		X - S. S. (23)		Y (56)		Linkedin (18)		All (127)	
	μ	σ	μ	σ	μ	σ	μ	σ	μ	σ
CM	5,23	1,39	5,00	1,38	5,85	0,83	6,10	1,19	5,59	1,21
EE	4,46	1,59	4,84	1,51	5,53	1,02	5,40	1,30	5,14	1,38
FC	5,73	0,96	6,00	1,10	6,15	0,70	5,72	1,16	5,96	0,93
HT	5,03	1,50	5,11	1,37	6,19	0,66	5,36	1,74	5,60	1,32
BI	6,47	0,75	6,24	0,87	6,46	1,07	6,33	0,86	6,41	0,94
PE	2,88	1,43	2,65	1,21	4,79	1,35	5,86	1,35	4,10	1,78
SI	5,80	1,02	4,78	1,66	5,79	1,15	5,78	0,81	5,61	1,24
TTF	4,45	1,43	4,98	1,06	5,34	1,27	5,72	0,97	5,12	1,30
U-H	9,93	4,71	29,17	9,94	15,63	8,86	25,94	14,44	18,20	11,60
U-F	6,63	1,03	6,91	0,42	6,91	0,35	6,78	0,65	6,83	0,63
U-I	5,30	1,32	6,00	1,45	6,00	1,08	5,83	1,25	5,81	1,25
Exp	6,53	2,16	7,13	2,53	13,46	7,97	72,00	52,87	18,98	29,74
Age	39,47	7,41	36,43	9,47	36,43	8,22	43,00	11,70	38,08	9,22
Gndr	0,90		0,57		0,71		0,72		0,73	

10.3 RESULTING MODEL

The resulting model can be found in Figure 13. Significance has been tested by bootstrapping to 5000 samples. Experience has been measured as the number of months the user is using a CRM system, which is similar to Venkatesh et al. (2012) [82]. Gender is coded as a dummy variable, a 0 for women and 1 for men. The moderating effect of Experience has been normalized among the four participating groups to be able to compare relative experience.

R^2 can be found above each construct. Above the significant arrows, the regression coefficient (B) is mentioned. Cohen's f-square was calculated to check the effect size of the main-effect variables and the interaction terms. All found moderation effects are between low (0.02) and medium (0.15) effect size. In case a moderating variable is found, the coefficient for these moderating variables is mentioned as well.

Three constructs which are normally moderating factors, have a direct effect. This is the case for Age on EE, Gender on FC, and Experience on HT.

The model ran twice, once without moderating effect, once with moderating effects. An additional legend for Figure 13 can be found in Table 12. The resulting model with all significant relationships can be found in Figure 13, Appendix B.

Table 12: Legend for Figure 13

Item	**Meaning**
*	$p < 0.05$
**	$p < 0.01$
***	$p < 0.001$

Table 12: Legend for Figure 13

Item	**Meaning**
X/X	With/without moderation
G	Gender
A	Age
E	Experience

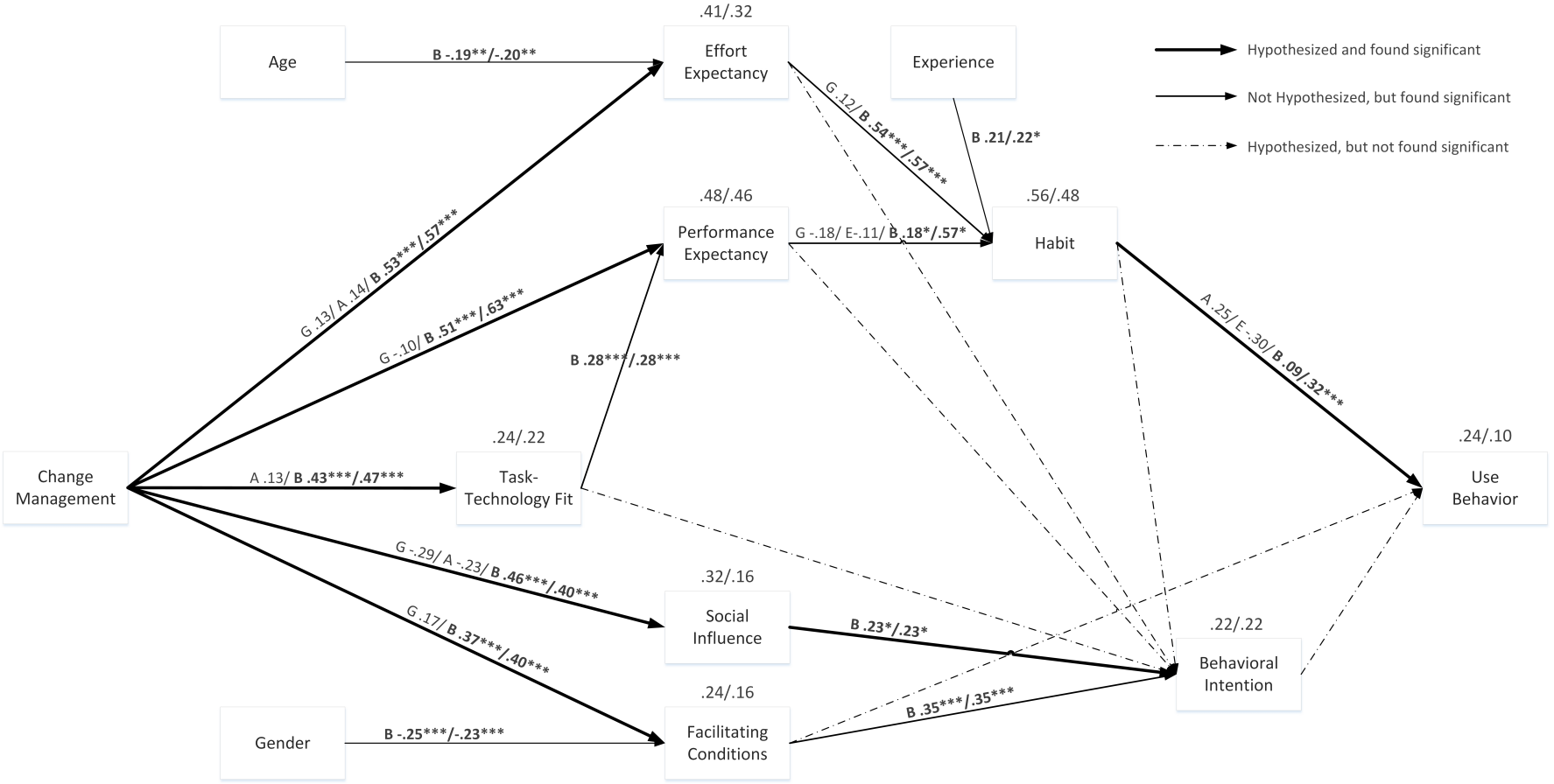

Figure 13: The resulting model

10.4 HYPOTHESIS

Each of the hypothesis developed in Chapter 8 will be confirmed or disconfirmed, based on the results.

Hypothesis 1: Change management will increase PE. As can be seen in Figure 13, this hypothesis is confirmed. Moreover, gender was found to be a moderator meaning that the effect is stronger for women.

Hypothesis 2: Change management will increase EE. CM is found to have a positive relationship on EE, meaning that it is easier to work with the IS in the case of a higher perceived CM. This relationship is moderated by Gender and Age, which implicates that for men, and older persons this effect is stronger. This hypothesis is therefore approved.

Hypothesis 3: Change management will increase SI. CM has a positive relationship on SI. The effect is stronger for women and younger people. This hypothesis is confirmed.

Hypothesis 4: Change management will increase FC. CM is determined to have a positive relation on FC. For men, this relationship is even stronger than for women. This hypothesis is confirmed.

Hypothesis 5: Change management will increase TTF. CM is found to have an increasing effect on TTF. The older the person, the stronger this relationship. This hypothesis is approved.

Hypothesis 6(a): Habit will not influence BI and UB for people with less experience. This hypothesis cannot be confirmed or dis-confirmed. In the development of UTAUT, Venkatesh et al. (2003) studied only the first six months [81]. As only 31 (out of 127) of the respondents are using the CRM six months or less and four of participants use the system three months or less, the limited experience group is too small.

Hypothesis 6(b): Habit will have a positive influence on BI and UB for people with higher levels of experience. A significant relationship has been found between Habit en UB. For older people this relationship is stronger and for persons with more experience, this relationship is less strong. Therefore, this hypothesis is partially confirmed.

11 DISCUSSION

In this chapter both the 'Hypothesized, not significant' as well as the 'Not hypothesized, but significant' relationships are be discussed. Furthermore, the theoretical implications, managerial implications and limitation are be described.

11.1 HYPOTHESIZED, NOT SIGNIFICANT

All of the six expected, but insignificant relationships are connected to BI or UB. Not much variance is found in BI, as can be seen in Table 13. The majority of participants (totally) agreed on having the BI to use. This is understandable as the users have no choice to work with a system other than the CRM system. Working with the IS is one of their tasks, and no other IS suffices the requirements of the tasks. This low variance may have resulted in difficulties finding relationships with BI and UB.

Table 13: Five-number summary of intention

Minimum	1
Quartile 1	6
Median	7
Quartile 3	7
Maximum	7

For predicting UB, another problem arose. The participants in the survey have different tasks, and consequently use other functionalities of the CRM system. Some may even be contracted to work with the system all day and for others, working with the system is a secondary task. Therefore, not all conceptualizations of UB, such as the number of hours, may be the best indicator of UB for CRM.

Furthermore, this study was not longitudinal as many other researches in the field [81, 82, 57]. This may have caused problems in finding relationships, as BI also focuses on future UB.

Thirdly, a low variance was found in the frequency of usage, as can be seen in Table 14. A frequency of 7 corresponds to use 'Several times a day'. This low variance may have resulted in difficulties finding relationships, similar as for BI.

Table 14: Five-number summary frequency of use

Minimum	2
Quartile 1	7
Median	7
Quartile 3	7
Maximum	7

As can be seen in Figure 8, less moderating effects have been found than in UTAUT and UTAUT 2. This may be due to the reasons mentioned earlier in this section. All the expected, but non-significant relationships will be discussed in the next subsection.

11.1.1 *Behavioral intention -> Use behavior*

BI may not have had a significant effect on UB because in this research, participants in the survey have different tasks. Someone may have the full intention to work with the system, but only needs the system one hour a week to fulfill the tasks. On the other hand, the intention may be irrelevant if the person has to work with the system 40 hours a week anyway.

In previous studies, on which the proposed model is based, mostly a longitudinal survey was done [81, 82, 57]. In this research, a survey was filled in at one moment in time, to take a so called 'snapshot'. As BI focuses on future UB and use is only measured at one point in time, this might have resulted in insignificance.

Furthermore, Limayem et al. (2007) admit circumstances might exist in which BI cannot be regarded as reliable predictor of UB, which is confirmed by Warsaw & David (1984) [57, 84]. This context of fully obliged usage in CRM context might create the circumstances in which BI is insignificant for predicting UB.

11.1.2 *Performance expectancy -> Behavioral intention*

Pai & Tu (2011) also showed no significant relationship between PE and BI [69]. This insignificance is explained by the fact that the "system dawns no apparent effect regarding performance merit bonus or promotion matters". For the cases handled in this thesis, the same applies. In none of the cases, the KPIs and bonuses of the users are directly related to the use of the CRM system.

Moreover, Venkatesh et al. (2003) expected the effect of PE on BI would be stronger for men and younger workers [81]. However, in their paper no average age is mentioned. In Venkatesh et al. (2012), the average age was 30 [82]. In this research, the average age is 38, which may be a reasons why PE did not have a significant effect on BI.

11.1.3 *Effort expectancy -> Behavioral intention*

As can be seen in Table 11, the average experience is at least 6,5 months and the overall average experience is 19 months. Venkatesh et al. (2003) expected this relationship would only exist for users with limited experience [81]. As only a small group used a CRM system for six months or less, which is the scope of Venkatesh et al. (2003), this might be the reason why no relationship was found between EE and BI.

11.1.4 *Task technology fit -> Behavioral intention*

Pai & Tu (2011) established a significant influence of TTF on BI in a CRM context. According to them, the user is more willing to use the CRM system

if it 'can handle business issues for user' [69]. This relationship was not found in this research.

The relationship between TTF and BI can be questioned. In case a certain tasks requires the CRM system, it does not matter how well the technology fits to the tasks, as the task has to be done anyway. Therefore, no relationship between BI and TTF is required.

Moreover, BI also has a focus on future UB, as discussed earlier, and TTF is about present use. This may cause in insignificant relationship between TTF and BI as well.

11.1.5 *Habit -> Behavioral intention*

No significant effect of HT on BI is found. This indicates that there is no evidence the variance in HT can predict variance in BI. As discussed earlier, this may be due to the low variance in BI.

Furthermore, just as the relationship between BI and UB, BI is also about future use and HT is about the current situation. As the measurements have taken place at only one point in time, this might have weakened the relationship as well.

In a fully mandatory setting, the relationship between HT and BI is not tested. In the previous studies of HT, on which this research is based on, usage was voluntary [82, 57]. The relationship suggests that in a mandatory settings, it is not BI which is relevant for performing a tasks, but it is HT.

11.1.6 *Facilitating condition -> Use behavior*

No significant relationship has been found between FC and UB. This may be due to a shift in the content of the indicators in the survey.

Venkatesh et al. (2003) used the following questions for FC:

1. I have the resources necessary to use the system.
2. I have the knowledge necessary to use the system.
3. The system is not compatible with other systems I use.
4. A specific person (or group) is available for assistance with system difficulties.

In this research the following questions were used for FC:

1. There is a person or group available to help with difficulties regarding in the CRM system.
2. If I need help with the CRM system, I can get it.
3. I get support with using the CRM system.

This shift towards support is caused by the introduction of CM in UTAUT. As knowledge is operationalized as an important factor of change management, these questions could not be used for FC.

11.2 NOT HYPOTHESIZED, BUT SIGNIFICANT

In this section, the unexpected, but found significant effects will be listed and explained.

11.2.1 *Task technology fit -> Performance expectancy*

The effect of TTF on PE, which was found in this study, was not found by Pai & Tu (2011) [69]. However, it can be argued that when a certain task fits to the technology, the performance of a user increases. When, for example, the user needs less clicks to do a certain tasks, or the system fills in a large part of the form automatically, job performance can increase.

11.2.2 *Performance expectancy -> Habit*

PE was found to facilitate an increasing HT. Moreover, this relation is stronger for women and less experienced users. This may be the case if someone feels the CRM system increases his or her performance, the person might be more willing to use the system and build a HT in using the system.

11.2.3 *Effort expectancy -> Habit*

EE was found to have a strong positive effect on HT. The easier it is to work with the system, the less effort and thinking a user has to put in working with the system and to perform a certain tasks. The effect is even stronger for men. Empirical evidence suggests if not much of effort is needed, the easier performing certain tasks becomes a HT.

11.2.4 *Experience -> Habit*

Experience was found to have a direct effect on HT. As mentioned in 5.3.1, HT is defined as 'the extent to which people tend to perform behavior (use IS) automatically because of learning'. When people gain more experience in using the CRM system, they learn to work with the CRM and build a HT.

11.2.5 *Age -> Effort*

Age was found to have a direct effect on EE. The older a person gets, the more time this person needs to work with the system. In the model of Venkatesh et al. (2003), age was a moderating variable in the relationship of EE on BI [81]. Resultingly, it might not be unexpected that age was found to have a direct effect on EE.

11.2.6 *Gender -> Facilitating conditions*

Venkatesh et al. (2012) found the effect of FC on BI to be stronger for women than for men [82]. In this investigation, gender was found to have a direct significant influence on FC. In this research the relationship is stronger for women as well. Again, it may not be surprising Gender was found to have a direct effect on FC.

11.2.7 *Facilitating conditions -> Behavioral intention*

The relationship from FC to BI was also found in the research of Venkatesh et al. (2012) [82]. Nonetheless, age, gender, and experience were moderating

the effect of FC on BI. In this research, the moderating effects were not found, but gender was found to directly influence FC.

11.3 RESULTS DISCUSSION COMPANY X AND COMPANY Y

The results of the survey have been discussed with company X and company Y. At both companies it was suggested to further improve EE and PE, based on the results at Company X and the comments of Company Y. Company X was informed about a new mobility project at Company Y. Furthermore, both companies should invest in a user friendly Knowledge Base. The measures to implement all of this are still to be discussed with both companies.

11.4 THEORETICAL CONTRIBUTIONS

A major contribution of this research is the addition and operationalization of CM to UTAUT. CM is defined as "the extent to which an employee has the awareness, desire, knowledge, ability and reinforcement to change and uphold behavior, attitude & skills". Empirical evidence suggests CM has a significant influence on EE, PE, TTF, SI, FC. Future work might focus on what methods work best to increase perceived CM and how to best manage the change to a new IS.

Moreover, the resulting model gives insight in how HT can be explained. HT is found as a central construct in the model, with a predictability of 56%. HT can directly be facilitated by increasing PE, EE, and indirectly via TTF and CM. Future work can focus on expanding the knowledge about creating a HT en whether it also applies to other parts of the IS field.

Furthermore, user acceptance research might discuss whether studying and predicting UB is the ultimate goal. In an organizational context, the ultimate goal of a system is increase job performance and make the organization as efficient and effective as possible [26, 44]. UB does not fully cover this goal, as a higher level of UB might not mean higher efficiency and effectiveness. HT might be a better subject of study, as it shows whether or not the user is able to work with the IS, and working with the IS feels natural. Having a HT might implicate that a user is using the system when the organization is better off. Studying HT over UB also helps in making the research more applicable to the business. HT is more general and can be compared with users of another IS. For UB, the measurements such as hours of use, intensity and frequency depend on users' tasks.

This research has shown that not under all circumstances BI is able to predict UB. The may be due to the fully mandatory setting, or because the measurements were not taken in a longitudinal way. Furthermore, participants have different tasks which require others amounts of UB. As BI has found to be an important predictor in many other researches [81, 82, 57], future research might look into this non-significant relationship.

11.5 LIMITATIONS AND FUTURE RESEARCH

Generalizability is one of the limitations of this research, since the focus is on the field of CRM only and the surveys have taken place at two different companies in the same sector as well as CRM users on LinkedIn. However, as the study was quite broad in the sense that participants have different kind of tasks, the research may be relevant to other field than just CRM.

Secondly, the average age in this research is 38. The finding may not apply for people and groups significantly older than 38. This issue is also reported by Venkatesh et al. (2012) [82]. The difference in age may be an interesting topic for future research.

In addition, all measurements are sell-reported. For all constructs this might mean that the 'actual' truth is not reflected. For the operationalization of UB in particular, UB can only be used as a more relative measure than an exact measure, as mentioned in section 5.5. To further improve the accuracy of the UB measurements, future research may look into the operationalization of UB related to users' tasks. This addition is also suggested by Burton-Jones & Straub (2006) [18].

Also, quite a large difference in number of participants exists in this study and for example the study of Venkatesh et al. (2012) [82]. This research was built upon 127 participants, versus 1512 in Venkatesh et al. (2012). This is a large difference and might not uncover small differences in moderating effects. However, Venkastesh et al. (2003) also had a similar number of participants (119) [81].

Fifth, this is research contributes to further uncovering HT. In this research the variance of HT was found to be predictable with 56%, by EE and PE, through TTF and CM. The limitation is however the CRM context as well as the number of participants. Future research should show the generalizability of the further uncovered HT.

Finally, future research should also focus on how individual contribution to organization's efficiency and effectiveness can best be measured. An increased UB might not lead to higher efficiency or effectiveness of the organization. Increased use might also mean that someone has more trouble in using the IS.

11.6 MANAGERIAL IMPLICATIONS

This research shows that CM does matter for User Acceptance of CRM systems. Through effective CM more IT projects can be successful. CM shows to have a significant positive effect on TTF, PE, EE, SI, and FC. This means CM is a useful method to help users adopt to a CRM system. It is essential for companies to be aware of the fact that CM is relevant for IS success.

Creating a HT for using the IS may be the ultimate goal of the CM process, as the goal of an IS is to increase job performance, organization's efficiency and effectiveness [26, 44]. HT seems to better fit the goal of IS than UB, as the measures for UB are difficult to define since employees use different features of a CRM system and have different task. HT might implicate that the system is used when it can increase job performance, organizations' efficiency and effectiveness.

Based on the results of the survey, the focus of CM should be on EE and PE, as main predictors of HT. Also, TTF should be taken into account, in order to ensure PE. A simplified model is proposed in Figure 14. The model and corresponding survey can be used to measure the progress of an IT project, in terms of HT and its predictors. The survey can take place at one moment in time, in contrast to a longitudinal study which is done in research field [81, 82, 57]. The results can be used to steer projects towards a success.

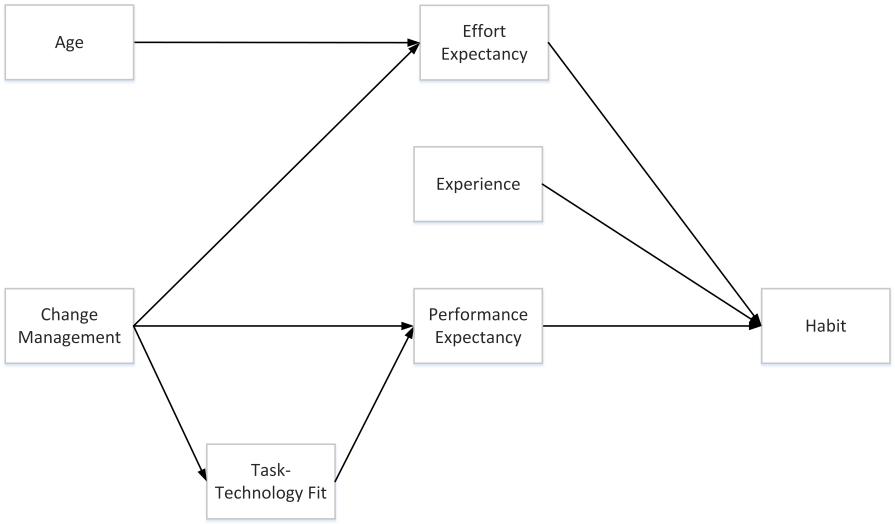

Figure 14: Stripped research model, applicable for practice

12 CONCLUSION

Information Systems

The lack of user acceptance has long been and still is a major barrier for the success of new Information Systems (IS) [26, 41, 62, 68]. The goal of most organizationally focused IS is to improve efficiency, effectiveness, and employees' job performance [26, 44]. However, when users reject the IS this goal will not be accomplished or the results will become insignificant [26].

Change Management

Change Management (CM) will help changing organizations to cope with changing attitudes, skills and behavior, needed for new IS. Through CM, people become aware of the need for change. This leads to a decreased resistance to the new IS and an increase of user acceptance. The goal of this research is to find out to what extent CM contributes to Customer Relationship Management (CRM) user acceptance.

Customer Relationship Management

CM is defined as "the extent to which an employee has the awareness, desire, knowledge, ability and reinforcement to change and uphold behavior, attitude & skills". The relationships of CM with the other constructs is moderated by Age and/or Gender. The current study shows that CM has a significant influence on the concept of user acceptance, in terms of the Task-Technology Fit (TTF), Effort Expectancy (EE), Performance Expectancy (PE), Social Influence (SI), and Facilitating Conditions (FC), as discussed in 11.4. CM influences the predictors of Use Behavior (UB) and Habit (HT).

Task-Technology Fit
Effort Expectancy
Performance Expectancy
Social Influence
Facilitating Conditions
Use Behavior
Habit

UB is indirectly influenced by CM, via HT, EE, PE and TTF. A central construct in this study is HT, which can be predicted for 56% by PE, EE, and Experience. HT is suggested as ultimate goal in organizations' system implementation, as it is unrelated to the tasks of the user. Moreover, a higher level of UB, which is a central construct in earlier research, does not necessarily lead to a more efficient en effective organization.

To find the previously mentioned relationships, a field survey is conducted among the end users of different implementations of the CRM systems, based on Microsoft Dynamics CRM. These end users are reached through two companies and through LinkedIn. In total, 127 CRM users participated in the research.

Since only the CRM end users at two companies and CRM end users at LinkedIn participated in the study, generalizability is one of the main limitations of this research. This is also described in 11.5. Future research should determine whether the same results apply to other implementations of CRM and other IS.

Secondly, all measurements are sell-reported. For all constructs this might mean that the 'actual' truth is not reflected. To further improve the accuracy of the UB measurements in particular, future research may look into the operationalization of UB related to users' tasks.

Thirdly, this research contributes to further explain HT. The variance in HT is found to be predictable for 56%. The limitation is however the CRM context as well as the number of participants. Future research should show the generalization of the further explained HT.

Finally, future research should focus on how individual contribution to organizations efficiency and effectiveness can best be measured. As an increased UB might not lead automatically to higher efficiency or effectiveness of the organization.

It is important for businesses to recognize CM as a crucial part of IS implementation, as discussed in 11.6. To support this goal, a simplified model is proposed for the businesses, to gain insight in their CM process and corresponding PE, EE, TTF and HT.

As the goal of an IS is to increase job performance, organization's efficiency and effectiveness [26, 44], creating a HT seems to be essential. HT better fits the goal of IS than UB, as the measures for UB are difficult to define since employees use different features of a CRM system and have different tasks.

The focus of CM should be on EE and PE. Also, TTF should be taken into account, in order to ensure PE. A simplified model is proposed in Figure 14. The model and corresponding survey can be used to measure the progress of an IT project, in terms of HT and its predictors. The results of the survey can be used to steer IT projects towards success.

Part V

APPENDIX

A

VALIDATED SURVEY QUESTIONS AND ANSWERS

Table 15: Survey questions

	Dutch	English
Gen.		
	Geslacht	Gender
	Leeftijd	Age
	Ervaring	Experience
CM		
C1_4	Ik weet waarom de organisatie beter wordt van het nieuwe CRM-systeem.	I know why the organization is be better off with the new CRM system.
C1_8	De (voorgestelde) verandering, met daarin het nieuwe CRM-systeem, bevalt me.	The (proposed) change, including the new CRM system, pleases me.
C1_10 [1]	Ik kan mijn houding, gedrag en vaardigheden ontwikkelen naar wat het CRM-systeem vereist.	I can develop my attitude, behavior and skills to what the CRM system requires.
C1_12	Ik kan mijn gedrag en vaardigheden zo ontwikkelen dat ik het CRM-systeem kan gebruiken.	I can develop my behavior and skills so that I can use the CRM system.
C1_13	Ik word gemotiveerd om mijn vaardigheden en gedrag verder te ontwikkelen zodat ik het CRM-systeem blijf gebruiken.	I am motivated to develop my skills and behavior such that I continue to use the CRM system.
EE		
E1_1	Ik vind het CRM-systeem makkelijk om te gebruiken.	I find it easy to use the CRM system.
E1_3	Ik hoef niet veel moeite te doen om het CRM-systeem te gebruiken.	I don't need to put much effort into using the CRM system.
E1_4	Het werken met het CRM-systeem is duidelijk en begrijpelijk.	Working with the CRM system is clear and understandable.
E1_5	Het is makkelijk voor mij om met het CRM-systeem te werken.	It's easy for me to work with the CRM system.

1 Based on the feedback of Company X, 'benodigdheden' was changed to 'vereist'.

Table 15: Survey questions

	Dutch	English
E1_7	Het CRM-systeem is makkelijk in gebruik.	The CRM system is easy to use.
FC		
F1_2	Er is een persoon of groep beschikbaar voor hulp met moeilijkheden in het systeem.	There is a person or group available to help with difficulties regarding in the CRM system.
F1_3	Als ik hulp nodig heb voor het CRM-systeem kan ik dat krijgen.	If I need help with the CRM system, I can get it.
F1_4 [2]	Ik word ondersteund in het gebruik van het CRM-systeem.	I get support with using the CRM system.
HT		
H1_1	Het is voor mij een gewoonte om het CRM-systeem te gebruiken.	Using the CRM system is a habit for me.
H1_2	Het voelt als een gewoonte om het CRM-systeem te gebruiken.	It feels like a habit to use the CRM system.
BI		
I1_2	Ik ben van plan om het CRM-systeem de komende maanden te gaan gebruiken.	I am planning to use the CRM system the coming months.
I1_4	Ik heb de bedoeling om het CRM-systeem de komende maanden te gaan gebruiken.	I aim to use the CRM system the coming months.
PE		
P1_1	Het gebruik van het CRM-systeem verhoogt mijn productiviteit.	The use of the CRM system increases my productivity.
P1_2	Het CRM-systeem helpt mij om sneller mijn taken uit te voeren.	The CRM system helps me to perform my tasks faster.
P1_5	Het gebruik van het CRM-systeem helpt me om mijn werk sneller gedaan te krijgen.	The use of the CRM system helps me to get my work done faster.
P1_7	Ik kan beter en sneller werk leveren door het CRM-systeem.	I can work better and faster because of the CRM system.
SI		

2 Based on the feedback of Company X, 'gefaciliteerd' was changed to 'ondersteund'.

Table 15: Survey questions

	Dutch	English
S1_2	Mensen die ik belangrijk vind, vinden dat ik het CRM-systeem moet gebruiken.	People who I find important, think I should use the CRM system.
S1_4	Als ik het CRM-systeem gebruik, vinden de mensen die ik belangrijk vind dat fijn.	When I use the CRM system, the people who I find important appreciate that.
TTF		
T1_1 [3]	De functionaliteiten van het CRM-systeem zijn passend.	The functionalities of the CRM system are suitable.
T1_2	De functionaliteiten van het CRM-systeem zijn geschikt.	The functionalities of the CRM system are appropriate.
UB		
U1	Hoeveel uren per week gebruikt u het systeem gemiddeld (Uitgaande van een 40-urige werkweek)?	On average, how many hours per week do you use the system average (assuming a 40-hour week)?
U2_1	Hoe vaak gebruikt u het systeem?	How often do you use the system?
U3_1	Hoe intensief gebruikt u het CRM-systeem?	How do you consider the extent of your current system use?

Table 16: Survey answers

Question	Value	Dutch	English
Gender			
	0	Vrouw	Female
	1	Man	Male
Mostly			
	1	Helemaal mee oneens	Strongly disagree
	2	Mee oneens	Disagree
	3	Een beetje mee oneens	Somewhat disagree
	4	Niet mee oneens/niet mee eens	Neither agree or disagree
	5	Een beetje mee eens	Somewhat agree
	6	Mee eens	Agree
	7	Helemaal mee eens	Strongly agree

3 Based on the feedback of Company X, 'adequaat' was changed to 'passend'.

Table 16: Survey answers

Question	Value	Dutch	English
U2_1			
	1	Nooit	Never
	2	Bijna nooit	Rarely
	3	Minder dan een keer per maand	Less than once a month
	4	Een paar keer per maand	A few times a month
	5	Een paar keer per week	A few times a week
	6	Een keer per dag	Once a day
	7	Meerdere keren per dag	Several times a day
U3_1			
	1	Geen gebruik	No usage
	2	Licht gebruik	Light use
	3	Matig gebruik	Below average use
	4	Gemiddeld gebruik	Average use
	5	Bovengemiddeld gebruik	Above average use
	6	Intensief gebruik	Heavy use
	7	Zeer intensief gebruik	Very heavy use

B

RESULTING MODEL ONLY SIGNIFICANT

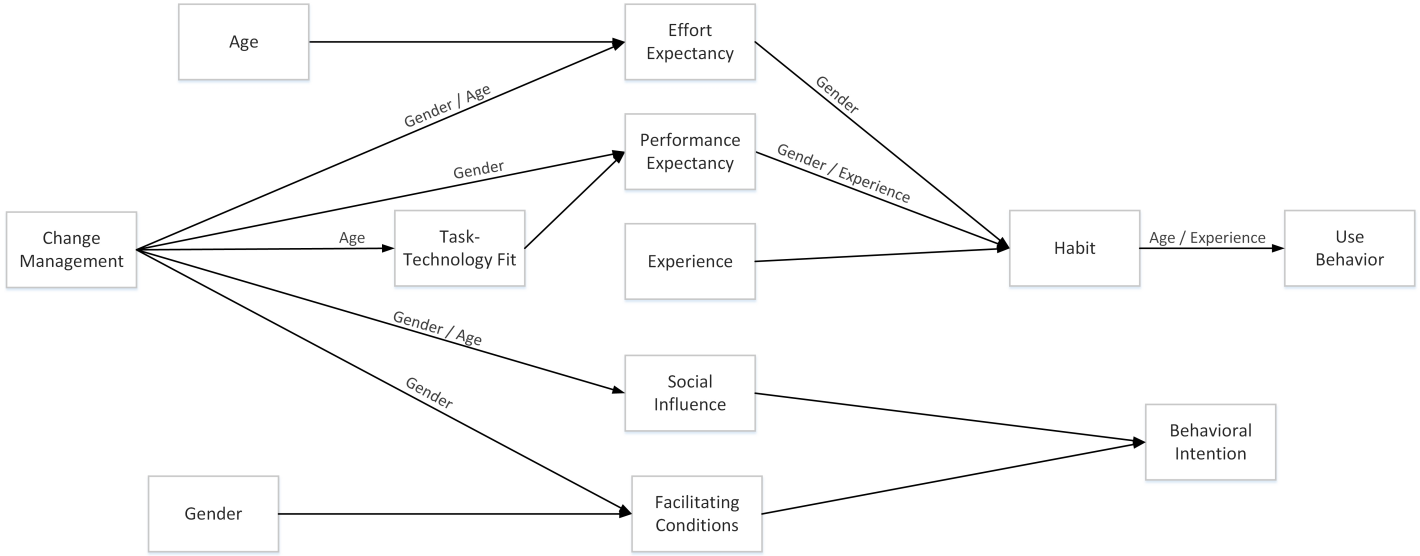

Figure 15: The resulting model, only significant relationships

BIBLIOGRAPHY

[1] Ajzen, I. Residual Effects of Past on Later Behavior: Habituation and Reasoned Action Perspectives. *Personality and Social Psychology Review 6*, 2 (May 2002), 107–122.

[2] Argyris, C. *Intervention Theory and Method: A Behavioural Science View*. Addison-Wesley, 1970.

[3] Arnold, J., Silvester, J., Patterson, F., Robertson, I., Cooper, C., and Burnes, B. *Work Psychology: Understanding Human Behaviour in the Workplace*. Financial times management. Prentice Hall/Financial Times, 2005.

[4] Avlonitis, G. J., and Panagopoulos, N. G. Antecedents and consequences of CRM technology acceptance in the sales force. *Industrial Marketing Management 34*, 4 (May 2005), 355–368.

[5] Bagozzi, R. P., and Yi, Y. On the evaluation of structural equation models. *Journal of the Academy of Marketing Science 16*, 1 (Mar. 1988), 74–94.

[6] Balogun, J., and Hope Hailey, V. *Exploring strategic change*. Pearson Education, 2008.

[7] Bamford, D. R., and Forrester, P. L. Managing planned and emergent change within an operations management environment. *International Journal of Operations & Production Management 23*, 5 (2003), 546–564.

[8] Bhattacherjee, A. Social Science Research: principles, methods, and practices, 2012.

[9] Blair, E., and Burton, S. Cognitive Processes Used by Survey Respondents to Answer Behavioral Frequency Questions. *Journal of Consumer Research 14*, 2 (Sept. 1987), 280.

[10] Bland, J. M., and Altman, D. G. Statistics notes: Cronbach's alpha. *BMJ 314*, 7080 (Feb. 1997), 572–572.

[11] Brohman, M. K., Watson, R. T., Piccoli, G., and Parasurama, A. Data completeness. *Communications of the ACM 46*, 6 (June 2003), 47.

[12] Brown, S., and Venkatesh, V. Model of adoption of technology in households: A baseline model test and extension incorporating household life cycle. *MIS quarterly 29*, 3 (2005), 399–426.

[13] Buchanan, D., and Storey, J. Role-taking and role-switching in organizational change: the four pluralities. *Innovation, organizational change and technology* (1997), 127–145.

[14] Bullock, R. J., and Batten, D. It's just a phase we're going through: a review and synthesis of OD phase analysis. *Group & Organization Management 10*, 4 (1985), 383–412.

[15] Burnes, B. Managing change and changing managers from ABC to XYZ. *Journal of Management Development 22*, 7 (2003), 627–642.

[16] Burnes, B. Kurt Lewin and the Planned Approach to Change: A Reappraisal. *Journal of Management Studies 41*, 6 (Sept. 2004), 977–1002.

[17] Burnes, B. *Managing Change: A Strategic Approach to Organisational Dynamics*. Prentice Hall/Financial Times, 2004.

[18] Burton-Jones, A., and Straub, D. W. Reconceptualizing System Usage: An Approach and Empirical Test. *Information Systems Research 17*, 3 (Sept. 2006), 228–246.

[19] By, R. T. Organisational change management: A critical review. *Journal of Change Management 5*, 4 (Dec. 2005), 369–380.

[20] By, R. T., Burnes, B., and Oswick, C. Change Management: The Road Ahead. *Journal of Change Management 11*, 1 (Mar. 2011), 1–6.

[21] Chalmeta, R. Methodology for customer relationship management. *Journal of Systems and Software 79*, 7 (July 2006), 1015–1024.

[22] Chen, Q., and Chen, H.-M. Exploring the success factors of eCRM strategies in practice. *Journal of Database Marketing & Customer Strategy Management 11*, 4 (July 2004), 333–343.

[23] Chin, W. W., Marcolin, B. L., and Newsted, P. R. A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study. *Information Systems Research 14*, 2 (June 2003), 189–217.

[24] Cummings, T. G., and Huse, E. F. *Organization Development and Change*. West series in management. West Publishing Company, 1985.

[25] Davis, F. D. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly 13*, 3 (Sept. 1989), 319.

[26] Davis, F. D. User acceptance of information technology: system characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies 38*, 3 (Mar. 1993), 475–487.

[27] Davis, F. D., Bagozzi, R. P., and Warshaw, P. R. User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science 35*, 8 (Aug. 1989), 982–1003.

[28] Dawson, P. *Organizational Change*. Human Resource Management series. SAGE Publications, 1994.

[29] Dawson, P. *Reshaping Change: A Processual Perspective*. Understanding organizational change. Routledge, 2003.

[30] DeLone, W. H., and McLean, E. R. Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research 3*, 1 (Mar. 1992), 60–95.

[31] Desisto, R. P. Hype Cycle for CRM Sales, 2013. Tech. Rep. August, Gartner, Inc., 2013.

[32] Dishaw, M. T., and Strong, D. M. Extending the technology acceptance model with task technology fit constructs. *Information & Management 36*, 1 (July 1999), 9–21.

[33] Erskine, P. *ITIL and Organizational Change*. It Governance Limited, 2013.

[34] Finnegan, D. J., and Currie, W. L. A multi-layered approach to CRM implementation: An integration perspective. *European Management Journal 28*, 2 (Apr. 2010), 153–167.

[35] Fornell, C., and Larcker, D. F. Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research* (1981), 39–50.

[36] Galbraith, J. R. The role of formal structures and processes. *Breaking the code of change* (2000), 139–160.

[37] Gefen, D., and Straub, D. A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information systems 16* (2005), 91–109.

[38] Giachetti, R. E. A framework to review the information integration of the enterprise. *International Journal of Production Research 42*, 6 (Mar. 2004), 1147–1166.

[39] Gibson, J. J. The theory of affordances In RE Shaw & J. Bransford (eds.) Perceiving, Acting, and Knowing, 1977.

[40] Goodhue, D. L., and Thompson, R. L. Task-Technology Fit and Individual Performance. *MIS Quarterly 19*, 2 (June 1995), 213.

[41] Gould, J. D., Boies, S. J., and Lewis, C. Making usable, useful, productivity-enhancing computer applications. *Communications of the ACM 34*, 1 (1991), 74–85.

[42] Hair, J. F., Sarstedt, M., Ringle, C. M., and Mena, J. a. An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science 40*, 3 (June 2011), 414–433.

[43] Hartley, C., Brecht, M., Pagerey, P., Weeks, G., Chapanis, A., and Hoecker, D. Subjective time estimates of work tasks by office workers. *Journal of Occupational Psychology 50*, 1 (Mar. 1977), 23–36.

[44] Hevner, A. R., March, S., Park, J., and Ram, S. Design science in information systems research. *MIS quarterly 28*, 1 (2004), 75–105.

[45] Hiatt, J. *ADKAR: A Model for Change in Business, Government, and Our Community*. Prosci Learning Center Publications, 2006.

[46] Hulland, J. Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic Management Journal 20*, 2 (Feb. 1999), 195–204.

[47] Kanter, R., Stein, B., and Jick, T. *The Challenge of organizational change : how companies experience it and leaders guide it*. Free Press Maxwell Macmillan Canada Maxwell Macmillan International, New York Toronto New York, 1992.

[48] Karahanna, E., Straub, D., and Chervany, N. Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS quarterly 23*, 2 (1999), 183–213.

[49] Katsma, C. *An organizational change approach for enterprise system implementations*. University of Twente, 2008.

[50] Kim, S. S., Malhotra, N. K., and Narasimhan, S. Research Note Two Competing Perspectives on Automatic Use: A Theoretical and Empirical Comparison. *Information Systems Research 16*, 4 (Dec. 2005), 418–432.

[51] King, S. F., and Burgess, T. F. Understanding success and failure in customer relationship management. *Industrial Marketing Management 37*, 4 (June 2008), 421–431.

[52] Kotter, J. Leading change: Why transformation efforts fail. *Harvard business review* (1995).

[53] Kotter, J. P., and Schlesinger, L. A. Choosing strategies for change. *Harvard business review 86*, 7/8 (2008), 130.

[54] Krishnaveni, R., and Deepa, R. Controlling Common Method Variance while Measuring the Impact of Emotional Intelligence on Well-being. *VIKALPA 38*, 1 (2013), 41–47.

[55] Kruithof, E. J. D., and Poll, H. K. *Systeem Implementatie Methode*. Academic Service, 1991.

[56] Lewin, K. Frontiers in Group Dynamics: Concept, Method and Reality in Social Science; Social Equilibria and Social Change. *Human Relations 1*, 1 (June 1947), 5–41.

[57] Limayem, M., Hirt, S., and Cheung, C. How habit limits the predictive power of intention: the case of information systems continuance. *Mis Quarterly 31*, 4 (2007), 705–737.

[58] Limayem, M., and Hirt, S. G. Force of Habit and Information Systems Usage: Theory and Initial Validation. *Journal of the Association for Information Systems 4* (2003).

[59] Lin, T.-C., and Huang, C.-C. Understanding knowledge management system usage antecedents: An integration of social cognitive theory and task technology fit. *Information & Management 45*, 6 (Sept. 2008), 410–417.

[60] Lowry, P. B., and Gaskin, J. Partial Least Squares (PLS) Structural Equation Modeling (SEM) for Building and Testing Behavioral Causal Theory: When to Choose It and How to Use It. *IEEE Transactions on Professional Communication 57*, 2 (June 2014), 123–146.

[61] Martin, R. Breaking the code of change. Observations and critique. *Breaking the code of change 453* (2000), 449–473.

[62] McCarroll, T. What new age. *Time 138*, 12 (1991), 44–46.

[63] Mendoza, L. E., Pérez, M., and Grimán, A. Critical Success Factors for Managing Systems Integration. *Information Systems Management 23*, 2 (Mar. 2006), 56–75.

[64] Miller, D. Successful change leaders: What makes them? What do they do that is different? *Journal of Change Management 2*, 4 (Dec. 2001), 359–368.

[65] Moody, D. L., Iacob, M.-E., and Amrit, C. In Search of Paradigms : identifying the theoretical foundations of the information system field. In *18th European Conference on Information Systems, ECIS 2010* (2010).

[66] Moran, J. W., and Brightman, B. K. Leading organizational change. *Journal of Workplace Learning 12*, 2 (2000), 66–74.

[67] Multon, K. D. Encyclopedia of Research Design. In *Encyclopedia of research design*, N. Salkind, Ed. SAGE Publications, Inc., 2455 Teller Road, Thousand Oaks California 91320 United States, 2010, pp. 627–629.

[68] Nickerson, R. S. Why interactive computer systems are sometimes not used by people who might benefit from them. *International Journal of Man-Machine Studies 15*, 4 (Nov. 1981), 469–483.

[69] Pai, J.-C., and Tu, F.-M. The acceptance and use of customer relationship management (CRM) systems: An empirical study of distribution service industry in Taiwan. *Expert Systems with Applications 38*, 1 (Jan. 2011), 579–584.

[70] Pan, S. L., and Lee, J.-N. Using e-CRM for a unified view of the customer. *Communications of the ACM 46*, 4 (Apr. 2003), 95–99.

[71] Pettigrew, A., and Whipp, R. Understanding the environment. *Managing change 2* (1993), 5–20.

[72] Pettigrew, A. M. *The awakening giant: Continuity and change in Imperial Chemical Industries*. Blackwell Oxford, 1985.

[73] Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., and Podsakoff, N. P. Common method biases in behavioral research: a critical review of the literature and recommended remedies. *The Journal of applied psychology 88*, 5 (Oct. 2003), 879–903.

[74] Ringle, C., Wende, S., and Will, S. SmartPLS 2.0 (M3) Beta, 2005.

[75] Schein, E. H. Kurt Lewin's change theory in the field and in the classroom: Notes toward a model of managed learning. *Systems Practice 9*, 1 (Feb. 1996), 27–47.

[76] Straub, D., Limayem, M., and Karahanna-Evaristo, E. Measuring System Usage: Implications for IS Theory Testing. *Management Science 41*, 8 (Aug. 1995), 1328–1342.

[77] Swift, R. S. *Accelerating Customer Relationships: Using CRM and Relationship Technologies*. Prentice Hall PTR, 2001.

[78] Tafti, M. Analysis of factors affecting implementation of customer relationship management systems. In *Issues & Trends of Information Technology Management in Contemporary Organizations*, M. Khosrow-Pour, Ed. Idea Group Inc (IGI), 2002.

[79] Tavakol, M., and Dennick, R. Making sense of Cronbach's alpha. *International Journal of Medical Education 2* (June 2011), 53–55.

[80] Venkatesh, V., Brown, S., Maruping, L. M., and Bala, H. Predicting Different Conceptualizations of System Use: The Competing Roles of Behavioral Intention, Facilitating Conditions, and Behavioral Expectation. *Mis Quarterly 32*, 3 (2008), 483–502.

[81] Venkatesh, V., Morris, M., Davis, G., and Davis, F. User acceptance of information technology: Toward a unified view. *MIS quarterly 27*, 3 (2003), 425–478.

[82] Venkatesh, V., Thong, J., and Xu, X. Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly 36*, 1 (2012), 157–178.

[83] Verplanken, B., and Orbell, S. Reflections on Past Behavior: A Self-Report Index of Habit Strength. *Journal of Applied Social Psychology 33*, 6 (2003), 1313–1330.

[84] Warshaw, P. R., and Davis, F. D. Self-understanding and the accuracy of behavioral expectations. *Personality and Social Psychology Bulletin 10*, 1 (1984), 111–118.

[85] Wilson, D. C. *A Strategy of Change: Concepts and Controversies in the Management of Change*. ITBP Textbooks Series. International Thomson Business Press, 1992.

[86] Wong, K. Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS. *Marketing Bulletin* (2013).

[87] Yu, L. Successful customer-relationship management. *MIT Sloan Management Review* (2001), 1–4.

[88] Zhou, T., Lu, Y., and Wang, B. Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior 26*, 4 (July 2010), 760–767.