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Realising advanced Enterprise system Affordances

A single-case study of a CRM-system implementation at a technology consultancy company

Master's thesis in Management and Economics of Innovation

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Abstract

Enterprise systems offer organisations great action potentials (Affordances), however, getting employees to use the systems to their full potential is a lengthy process which is challenging for organisations. While previous studies have focused on strategic success factors from implementers point of view, less emphasis has been put on the perspective of users and how the envisioned affordances of the enterprise systems are actualised in practice. This thesis investigates what affordances implementers and users perceive in a technology and how certain variables affect users in realising the affordances of a technology. The thesis was conducted in the form of a qualitative single-case study of a technology consultancy company and the ongoing implementation of a Customer Relationship Management (CRM) system. Data was collected through semi-structured interviews with participants from the case company, observations, and internal documents and reports. Findings indicate that implementers and users at the case company had an overall similar understanding of what affordances the new CRM-system could offer. Four main affordances were identified, namely *Single entry and access point*, *Aggregated view*, *Data driven actions*, and *Cross-collaboration*. The realisation of these affordances followed a trajectory, creating different levels of affordances, meaning that the realisation of some affordances was dependent on the realisation of others. Further, the analysis identified twelve variables that influence users' realisation of perceived affordances of the CRM-system, and these variables can explain difficulties experienced by the case company in the implementation. Five of the identified variables can be found in existing affordance theory literature while the remaining seven emerged from the data. Finally, the analysis indicated interrelations between variables and identified the reaching of a critical mass of users who feed the CRM-system with information as an essential steppingstone to realise the higher-level affordances of the system.

Keywords: *Affordance theory, affordance actualisation, Customer relationship management, CRM-system, Enterprise system implementation, Technology adoption*

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1. Introduction

Digitalisation can be regarded as the process of utilising digital technology to change the business model of an organisation and open up new opportunities for value-adding and revenue streams (Gartner, n.d.). One success factor of digitalisation is the implementation of relevant enterprise systems (ES). One such enterprise system is the Customer relationship management (CRM) system, which is a way to support, manage and improve an organisation's relationship with customers (Zwass, n.d.).

Enterprise system (ES) implementation is the integration of enterprise systems into an organisation. It entails for instance installation, configuration, and customisation of the technology to fit the existing business environment, integration of legacy systems, and training of users (Fui-Hoon Nah et al., 2001). An implementation process involves typically two groups, implementers that drive the process and users that are envisioned to integrate it in their routines. Implementation of enterprise systems such as a CRM-system can be challenging for implementers since users may be reluctant to use systems that are available even though they have potential to provide the users and the organisation with great gains in performance (Davis et al., 1989). Shapiro and Varian (1999) states that the success or failure of a new technology or product are as much influenced by consumers expectations as by the products underlying value. The potentials of new technologies are not necessarily perceived by users in the same way as they are perceived by the organisation, (Pozzi et al., 2014; Ortmann & Kuhn, 2010). Therefore, a gap is to be expected between organisations and their employees regarding the perception of what an enterprise system can and should enable. Such misalignments in expectations can have a negative effect on the adoption of technologies (Au & Kauffman, 2003). Prior studies on ES implementations have often looked at success factors for implementation on a strategic level from the perspective of implementers (Nguyen et al., 2007; Amoako-Gyampah, 2004; Fui-Hoon Nah et al., 2001). Less focus has been put on the perspective of the group of people that ultimately are responsible to realise the values of enterprise systems, that is, the users and how this group perceive and realise advanced ES potentials during the implementation processes (Arvidsson et al., 2014; Amoako-Gyampah, 2004)

Therefore, the aim of this study is to (1) investigate how implementers perceive the potential and function of an enterprise system and how that compares to the perception of the users, and (2) examine how users realise advanced ES potentials within the implementation process. To do so, we investigate a CRM-system implementation at a technology consultancy company (Company α) and draw upon the concept of affordances, described as “*possibilities for goal-oriented action afforded to specified user groups by technical objects*” (Markus & Silver, 2008 p.622). The theory allows us to take the perspective of the individual and analyse an actor's perceived opportunities represented by a particular technology and what variables affect the actor's actualisation (realisation) of those opportunities. Previous research has outlined certain variables that influence actors' actualisation of affordances, such as, *Technology configuration*

and features; Difficulty of the actualisation itself; Actors' ultimate goal; Willingness to change behaviour; and Organisational level of skill or knowledge (Pozzi et al., 2014). With this in mind, the following two research questions have been formulated:

1. How do perceived CRM-system affordances of implementers compare to users' perceived affordances?
2. How do affordance actualisation variables influence users' realisation of CRM-system affordances?

The findings of this thesis show that users and implementers had congruent understanding of the perceived affordances of the CRM-system, contrasting what one would expect from findings of previous literature (Pozzi et al., 2014; Ortmann & Kuhn, 2010). Despite this, the case company encountered challenges in their implementation process. The realisation of these affordances follows a determined sequence of actions which formed a hierarchy of affordances, where more advanced capabilities were unlocked by realising lower affordances. For the users to realise these affordances, we identified 12 variables, 5 from literature and 7 that emerged from data, that influence the user's decision whether to act on the affordances. The findings show that the individual realisation of advanced CRM-system affordances is in particular dependent of other individuals adopting the CRM-system. Therefore, a sufficient number of active users are important for the organisation to be able to realise advanced CRM functions.

The desired practical contribution of the thesis is that it can guide organisations when implementing enterprise systems like a CRM-system, by investigating how the actualisation of affordances can be supported to facilitate CRM-system implementations. Theoretically, our study contributes to enterprise system literature by investigating an ongoing implementation and putting emphasise on the perspective of users. Also, we contribute to affordance theory literature by applying it to the specific case of customer relationship management systems and comparing the perspectives of implementers, and employees using the system. Also, insights regarding how established actualisation variables manifest themselves in a case context are shown, and additional variables are suggested to expand current framework.

2. Theoretical Framework

In this chapter, a theoretical background is presented to clarify essential theoretical concepts of the master's thesis. The chapter will cover selected literature relevant for enterprise system implementation and customer relationship management.

2.1 Enterprise system implementation

There can be many reasons and motivations for a company to invest in an enterprise system. Enterprise systems can re-engineer organisations at the operational level and, for instance, facilitate organisations to integrate business functions, share data across the organisation, automate business processes and access real-time data by using a single database (Jagoda & Samaranyake, 2017; Strong & Volkoff, 2004). These functionalities can bring substantial business value to organisations by a thorough data and process integration, leading to best business practices (Koh et al., 2011), better return on investment, and increased technological competence (Galy & Saucedo, 2014).

Implementation of enterprise systems have become an area of interest for researchers to study due to their high failure rate (Davenport, 1998; Jagoda & Samaranyake, 2017). Thus, much focus has been put on studying critical success factors of ES implementations (Fui-Hoon Nah et al., 2001; Ahmad & Pinedo Cuenca, 2013). Previous studies have identified several success factors for enterprise system implementations. For instance, the choice of ES should align with strategy to suit current business environment and operations. Dedicated resources in the form of personnel and money need to be assured by gaining support from top management and clear goals and objectives must be set to be able to monitor and measure progress in the implementation. Effective communication is essential to communicate goals and objectives, and expectations. Also, when implementing a new ES, legacy systems need to be considered to decide whether some should be integrated or phased out (Arvidsson et al., 2014; Fui-Hoon Nah et al., 2001; Ahmad & Pinedo Cuenca, 2013; Jagoda & Samaranyake, 2017; Strong & Volkoff, 2004). However, many studies do not pay adequate attention to the perspective of the people which organisations rely on to realise the values of enterprise systems, namely the users, and how these values can be realised in practice (Arvidsson et al., 2014; Amoako-Gyampah, 2004). Also, fewer studies have investigated initial and ongoing ES implementations (Fui-Hoon Nah et al., 2001; Zach & Bjorn, 2012).

2.2 Theory of affordance

The perceived usefulness of a new technology or service offering is subjective (Ortmann & Kuhn, 2010). Thus, innovators and adopters may have different views of the potential of technologies. Scholars have frequently drawn upon the concept of affordances to explain this relationship between technologies and users.

2.2.1 The origin of affordance theory

The notion of affordance was coined, within the field of Ecological Psychology, by James J. Gibson (1977, 1979) as “*an action possibility formed by the relationship between an agent and its environment*”. Since then, the concept has been developed by researchers within other fields of research, for instance, human-computer interaction (HCI) (Norman, 1988) or more recently within the field of information systems (IS) (Anderson & Robey, 2017). Several new and different definitions of affordance have emerged over time (Volkoff & Strong, 2013). Considering different definitions and viewpoints, Volkoff and Strong (2013) stated their definition to consolidate previous fragmented descriptions of affordance. They define affordance as “*the potential for behaviours associated with achieving an immediate concrete outcome and arising from the relation between an object (e.g., an IT artefact) and a goal-oriented actor or actors.*” (Volkoff & Strong, 2013, p. 823). Pozzi et al. (2014, p. 7) contribute with a similar definition of affordance in the IS domain: “*affordances are action potentials arising from the capabilities and goals of the organisation and the features of the IT artefact in a unique way where both are equally needed.*” Since there is a relationship between the object and the actor, the affordances can be regarded as actor and technology-specific (Strong et al., 2014), meaning that members of an organisations could have different affordances in relation to a specific technology.

2.2.2 A theoretical framework of affordances

One theoretical framework which has been used by scholars to discuss the process of an affordance, from when it emerges to when it gives an effect, was developed by Pozzi et al. (2014). The framework has four main steps, which follow in a sequential order, starting with (1) affordance existence, (2) affordance perception, (3) affordance actualisation, and finally (4) affordance effect. These four steps will be presented more in detail below and can be seen in figure 1.

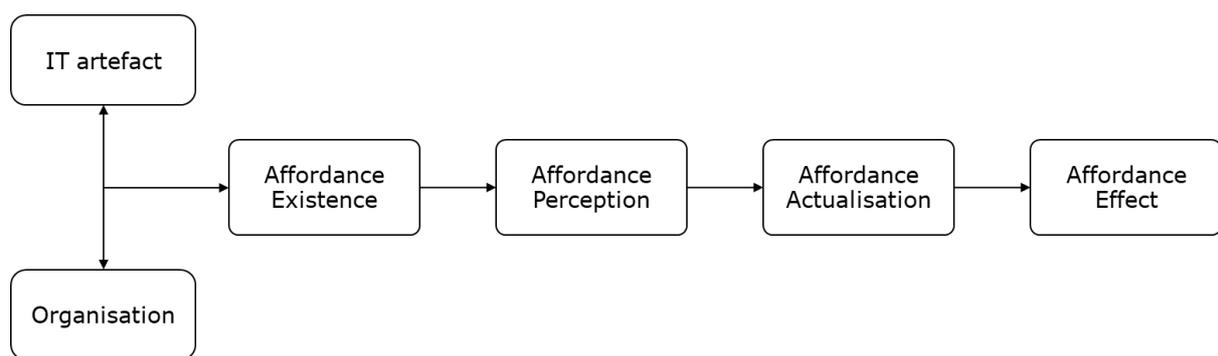


Figure 1. The theoretical framework of affordance (adapted from Pozzi et al., 2014)

2.2.3 Affordance Existence

The existence of an affordance relates to the fact that affordances exist even if the actor does not care or perceive the affordance or even if there is perceptual information for them to exist

or not (Pozzi et al., 2014). Affordances are instead seen as preconditions for an action or an activity, but the mere presence of an affordance in a system situation does not imply that an activity will take place, even if the odds for a possible activity are increased (Greeno, 1994). This view, to see affordances as an enabler, is shared by other scholars (Leonardi 2011; Majchrzak and Markus 2012; Zammuto et al., 2007). Some researchers also recognise that affordances can constrain actors from actions, depending on their characteristics and capabilities (Pozzi et al., 2014).

An affordance exists as a relationship between an artefact and an actor (Pozzi et al., 2014). Affordances can be regarded as both objective and subjective. Objective in the way that they do not depend on interpretation and value, and subjective as an actor is needed to set the frame of reference (Pozzi et al., 2014).

2.2.4 Affordance perception

The perception of an affordance is influenced by the information that is available about an affordance existence (Pozzi et al., 2014). For an actor to be able to exploit the potential that an affordance possesses it is logical that the affordance also needs to be perceived first, meaning that the actor needs to recognise the opportunity or opportunities that they have in relation to an artefact (Greeno, 1994). However, recognising the potential does not necessarily imply that the actor will exploit the potential (Greeno, 1994). For example, the fact that an actor recognises a glass as a potential to fill it with water and drink does not mean that the actor will actually use it. The process of recognising the existence of an affordance is affected by four factors according to Pozzi et al. (2014), namely the feature of the object, the capabilities of the actor, the goal(s) of the actor, and external information. This means that the perception of affordances is highly subjective and is viewed as a relationship between a specific actor and a specific system (Pozzi et al., 2014). Ortmann and Kuhn (2010) also pointed out the same fact that it is widely accepted that humans do not objectively perceive environmental properties and objects, although they share the same physical environment. Ortmann and Kuhn (2010, p. 2) use the following examples: “a person in a wheelchair perceives curbstones and stairs differently from a person that can walk; the person in a wheelchair perceives an obstacle, where other people just perceive a step they can climb. An ornithologist perceives and categorises birds differently from an untrained observer”.

2.2.5 Affordance Actualisation

The actualisation of an affordance is defined by Strong et al. (2014, p. 70) as “*the actions taken by actors as they take advantage of one or more affordances through their use of the technology to achieve immediate concrete outcomes in support of organisational goals*”. As stated earlier, the fact that an affordance is perceivable for an actor does not imply that actions will be taken to actualise the potential that it offers (Greeno, 1994). The actualisation process is goal-oriented and iterative. It is goal-oriented because affordances are actualised to support the actor(s) goals, and it is iterative since actions that are taken generate outcomes that act as feedback for further actions (Strong et al., 2014). In a case study by Strong et al. (2014), the actualisation process

is described as an individual journey that will be different for each person as people may take different actions, experience different constraints, and achieve different outcomes. Pozzi et al., (2014) have summarised variables from the literature that may affect the difficulty to actualise an affordance (see table 1), the actualisation process of a perceived affordance can be seen as a function moderated by these variables.

Table 1. Variables of actualisation (Source: Pozzi et al., 2014)

Variables of actualisation	Meaning
Technology configuration and features	Relates to the characteristics of the IT-artifact, for instance user interface
Actualisation of previous affordances	By actualising previous affordances new ones emerge, for instance via learning
Difficulty of the actualisation itself	Relates to the degree of effort that the actor must take in order to realise the affordance. E.g. how much extra work will this lead to
Actors' ability and understanding	How easy it is for an actor to interpret a conceptual model. E.g how much must the individual actor cognitively "process" to actualise the affordance
Organisational and environmental structures and demands	How well suited (organised) the organisation is for actualising the affordance
Actors' ultimate goal	Does the actualisation of the affordance go hand in hand with the actors own ultimate goal.
Ability of the organisation to perceive an affordance when it is available	Self-explanatory
Willingness to change behaviour	Relates to the actor's attitude towards change
Organisational level of skill or knowledge	How well prepared is the organisation as a whole, the sum of its individuals.

As table 1 shows, there are several variables that affect the actualisation process or the decision to even begin the actualisation process of an affordance. In the case study by Strong et al. (2014), actors began to reason about their goals and the actions they would need to take even before starting to actualise the affordance(s), thus some variables may be anticipated by the actor(s) while others will be apparent during the process.

From an organisational perspective, the actualisation is also considered a journey. However, since an organisation is built on a collective of individuals the organisational actualisation journey is an aggregate of all individual actualisation journeys (Strong et al., 2014). This means that to achieve desired organisational outcomes, there need to be a consistency and alignment of individuals' actions and outcomes with the desired organisational outcomes (Strong et al., 2014).

2.2.6 Affordance potency

Anderson and Robey (2017) introduced the notion of *Affordance potency* which is connected to affordance actualisation and shares many similarities with the actualisation variables presented by Pozzi et al. (2014). Affordance potency is a product of three factors that support and restrict an individual's affordance actualisation (Anderson & Robey, 2017). The factors are abilities and preferences of the individual, features of the system, and characteristics of the work environment (Strong et al., 2014). Anderson and Robey (2017, p. 103) define *Affordance Potency* as “*the strength of the relationship between the abilities of the individual and the features of the system at the time of actualisation, conditioned by the characteristics of the work environment*”. This means that even though technology providers aim to create affordances and design system features based on their assumption or perception of users' abilities and the context in which the technology will be used, the potency of affordances will always depend on the specific individual's existing abilities and the existing system features within the actual context of use (Anderson & Robey, 2017). Anderson and Robey (2017) state that the goal of the individual, perception of the affordance, and affordance potency is essential conditions for affordance actualisation. According to Anderson and Robey (2017) affordance potency can help us understand why it is challenging for individuals to actualise an affordance and how the encountered challenges affect individuals' decision to not actualise an affordance or figure out ways around the challenges.

2.2.7 Affordance Effect

The final step of the affordance process is the effect that is produced by the behaviours generated in the actualisation of the affordance (Pozzi et al., 2014). The effect of the affordance is based on the actor's perception of time (Pozzi et al., 2014). For instance, if the effect generated by the actualisation is immediate (short term) this is referred to as immediate-concrete outcomes (Strong et al., 2014) which in turn might help the organisation to reach the long-term organisational goals (Strong et al., 2014). In their case study Strong et al., (2014) provides the following example, where an immediate- concrete outcome of an actualisation was that digital data about patients were captured and archived, which benefited the organisational long-term goal of higher quality of patient care (Strong et al., 2014). The effect following the actualisation of an affordance can, according to Pozzi et al. (2014), result in one or more of the following: (1) the actualisation of the affordance enables conditions necessary to open a new path for additional affordances (Pozzi et al, 2014). This is what Thapa and Sein (2018) describe as the trajectory of affordances. (2) new features are developed on the artefact, for instance, IT-related features. (3) Organisational change is achieved.

2.2.8 Different types of Affordances

In this subsection different classifications of affordances identified by affordance theory scholars will be presented.

2.2.8.1 Gaver's four types of affordances

Gaver (1991) separates affordances from the information that is available about them. Thus, the author suggests that affordances exist whether the actor cares about them or not (Gaver, 1991). The author presents four types of affordances: (1) Perceptible affordance, (2) Hidden affordance (3) False affordance, and (4) Correct rejected, these affordances can be seen in figure 2.

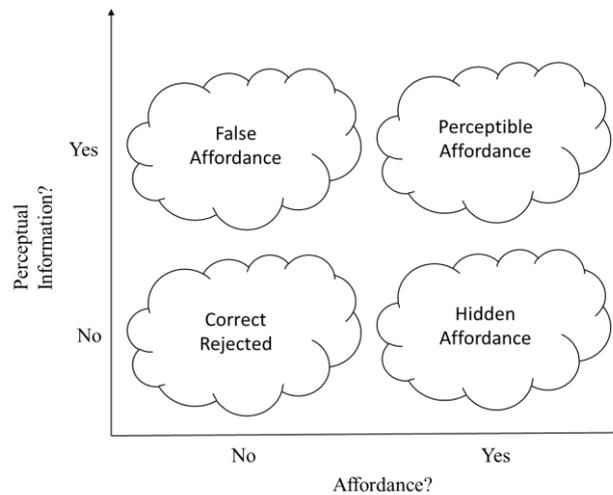


Figure 2. The four affordances, the x-axis display if the affordance is real or not. The y-axis displays if correct information is available about the affordance or not. (Adapted from Gaver (1991)).

For perceptible affordance, the information is available for the conceptualised affordances. If no information is available, the affordance can be regarded as hidden. In this case, the affordance must be activated by other evidence of the affordance. False affordance can be described as the situation when information suggests that a non-existing affordance exists and as a result actors try to act on it. The last example provided by Gaver (1991) is the notion of a correctly rejected affordance, a situation where both information and the affordance are missing and should thus be rejected.

2.2.8.2 Canonical and non-canonical affordances

Canonical affordances mean that the affordances are understood in a similar way by all actors who perceive it, while non-canonical affordances are dependent on the actor-object relationship (Ostern & Rosemann, 2021). An example of a canonical affordance is timestamping, which when used over a long period of time in an organisation will probably be perceived in a similar way by all actors, while for example a more complex technology like Blockchain is more likely to shape non-canonical affordances as the affordances are more influenced by the relationship between the IT-artefact and the individual actor (Ostern & Rosemann, 2021). Ostern and Rosemann (2021) suggest that the affordances of modern technology can be both canonical and non-canonical. This is due to the increased complexity and modular structure.

2.2.8.3 Composite, autonomous and trajectory of affordances

Affordances are not necessarily actualised at the same time, instead they may depend on each other and be actualised in a sequential pattern (Strong et al., 2014). The composite and

autonomous affordances can be described as to what extent an affordance is independent or interdependent of other affordances (Ostern & Rosemann, 2021). In other words, if an affordance is composite there are different levels, ranging from basic to higher-level affordances. In this sense, the actualisation of a basic level affordance can unlock new paths toward a higher-level affordance, or the existence and perceivability of higher-level affordances are decided by the actualisation of lower-level affordances (Ostern & Rosemann, 2021). These dependencies may vary in strength as the actualisation of some affordances may allow other higher-level affordances to be actualised, while other higher-level affordances become perceptible (Strong et al., 2014). Thapa and Sein (2018) further develop this concept, stating that the actualisation of affordances is an interdependent and connected process, described as the *Trajectory of Affordance*. The trajectory of the affordance will be different in different contexts and depending on the actor or actors actualising the affordance (Thapa and Sein, 2018). The conclusion is that by actualising one affordance, the effect is that new affordances might be generated (Pozzi et al., 2014) or other perceived higher-level affordances can be actualised (Strong et al., 2014). In contrast, autonomous affordances are not interdependent on the actualisation of other affordances and can thus be perceived or actualised by actors without any particular prerequisites (Ostern & Rosemann, 2021).

2.3 Technology adoption

In this section complementary literature to affordance theory that can explain the process of technology adoption will be highlighted.

2.3.1 Technology acceptance model (TAM)

According to the technology acceptance model, there are many potential variables to determine whether individuals accept or reject a new technology or system (Davis, 1989). The two most important ones are “perceived usefulness” (U) and “perceived ease of use” (EOU) (Davis, 1989). The first variable, perceived usefulness, can be described as the degree that a user thinks that the new novelty will help them in performing better in their everyday work, while the second variable, perceived ease of use, relates to the difficulty to use the system (Davis, 1989). Meaning that even if the technology is experienced to improve performance, it might still be rejected if it is not free from effort (Davis, 1989). One of the most critical findings in Davis (1989) article was the prominence of U over perceived EOU, meaning that even if a system is challenging to operate, it might still be adopted if the system is of substantial “usefulness”, this is not true the other way around (Davis, 1989). However, Davis (1989) showed that U was affected by EOU, meaning that a fair design can highlight the usefulness of a solution. Further on, Mathieson (1991) summarise the findings from Davis by stating that the U and EOU affect the individual's attitude towards the system (A), which in combination with U affect the Behavioural intention to use (I), which affect the Actual system use in the end. The initial factor, external variables, can be viewed as dependent on the situation (Mathieson, 1991). This could result in that even if users see the benefit of a solution, without the right resources (e.g.

time, financing), they are denied by external variables (Mathieson, 1991). The TAM-model is visualised in figure 3.

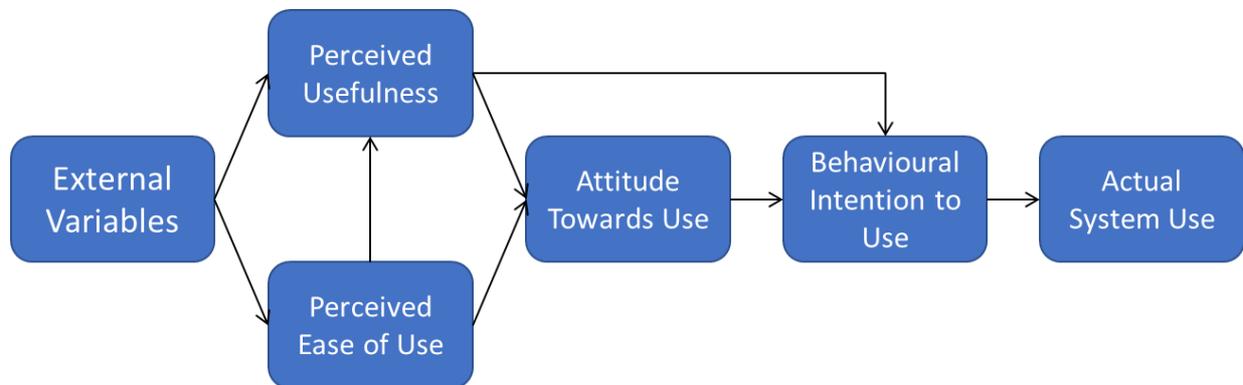


Figure 3. The Technology Acceptance Model (TAM) and its different phases (Adapted from Mathieson (1991))

2.3.2 Diffusion of innovations

Although new innovations can provide obvious advantages, they are difficult to get adopted in organisations (Rogers, 2003). As adoption can take time a common challenge for organisations is to increase the speed of diffusion of an innovation. Rogers (2003, p. 5) defines diffusion with four main elements as “*the process in which (1) an innovation (2) is communicated through certain channels (3) over time (4) among the members of a social system*”. Diffusion is a particular kind of communication since it conveys messages about a new idea. The newness in the idea implies that diffusion involves uncertainty and the way to reduce uncertainty is via communication of information to the members of the social system (Rogers, 2003). It is important to note that an innovation is an idea, practice, or product that is perceived as new by an individual or any other unit of adoption. Thus, it does not matter if an idea, practice or product is objectively new in terms of the time since it was first discovered in order to be classified as an innovation, at least when concerning human behaviour (Rogers, 2003).

The main questions that potential adopters usually ask about an innovation are *What is the innovation? How does it work? Why does it work? What are the consequences of the innovation? And What are the benefits and/or disadvantages for me?* Getting answers to these questions reduces uncertainty and affects the individual’s decision whether to adopt or reject an innovation (Rogers, 2003). All innovations have certain characteristics which are perceived differently by individuals and affects the rate of adoption. There are five characteristics that can help explain why different individuals have different rate of adoption, namely *Relative advantage, Compatibility, Complexity, Trialability, and Observability* (Rogers, 2003). In table 2 below an explanation of each characteristic is provided.

Table 2. An overview of the five characteristics of innovations and their meaning (Adapted from Rogers (2003)).

Characteristic	Meaning	Beneficial degree for adoption
Relative advantage	To which degree an innovation is perceived to be better than previous idea, practice, or product.	High
Compatibility	The degree to which an innovation fits the current values, needs, and experiences of an individual.	High
Complexity	The degree to which an innovation is perceived by an individual as difficult to understand and use.	Low
Trialability	The degree to which an innovation can be experimented with to increase understanding.	High
Observability	The degree to which the result of an innovation is visible for the individual to observe its advantages or disadvantages.	High

All individuals goes through a so called innovation-decision process which consist of five steps; (1) *Knowledge* (awareness of the existence of the innovation and its functionality), (2) *Persuasion* (the forming of a favourable or unfavourable attitude), (3) *Decision* (engagement in activities that lead to adoption or rejection), (4) *Implementation* (putting the innovation to use, if adopted), and (5) *Confirmation* (seeking reinforcement of an innovation-decision that has been made, which may lead to reversal of the decision if the individual is exposed to conflicting messages about the innovation) (Rogers, 2003). In the persuasion step it has been showed that interpersonal communication between peers with similar values and traits have been most effective (Rogers, 2003).

Rogers (2003) also discuss the notion of a so-called critical mass, which means that an innovation must reach a wide adoption to self-sustain. When this stage is reached the adoption will continue by itself. The concept of critical mass can be used to understand why an individual's own action is dependent on the perception of how many other individuals will behave in a particular way (Schelling, 1978). The concept of critical mass is important in the context of "*interactive innovations*" which are the type of innovations where an adopting individual have little value in adopting an innovation if the other individuals do not adopt (Rogers, 2003). In this sense interactive innovations depends on the perceived number of other users that already adopted the technology (Mahler & Rogers, 1999). These innovations are thus affected by *network effects*, where a lack of positive network effects lead to slower adoption of an innovation in the beginning, but once the critical mass is reached the adoption rate goes up (Rogers, 2003). The author suggest that this state is reached when individuals within the system starts to think "*everybody else is doing it, therefore I should do it as well*" (Rogers, 2003). But

when a critical mass affects the system, it does not only affect the speed of adoption, but it can also affect the speed of collapse (Mahler & Rogers, 1999). If people see that others are not using the innovation a discontinuance of the innovation spreads rapidly (Mahler & Rogers, 1999). This phenomenon occurs because interactive innovations are affected by reciprocal interdependence (Markus, 1987), meaning that past adopters are also influenced by the adoption of new users.

2.3.3 Game theory

Game theory is a tool that can be adapted to predict and analyse outcomes of competitive and sometimes cooperative games (business situations) where interdependencies between actors are present, meaning that the decision made by an actor is dependent on how other actors act or how the first actor expect that the other actors will act (Grant, 2019). One of the most famous games discussed in game theory is the model of prisoners' dilemma which describes a situation where both players would be best off if they cooperate but the fear that the other player will penalise the other makes the game competitive and they defect instead (Grant, 2019). When both players have defected, a pareto-maximum has been reached, and at this point no player can "change" strategy by themselves as this would lead to a lower outcome for the player. The game has thus reached a so-called Nash equilibrium.

Another phenomenon that can be explained by Game Theory is the so-called *Collective action problem* (Marwell et al., 1988). Holzinger (2003) defines collective action problems as "*the joint actions of a number of individuals which aim to achieve and distribute some gain through coordination or co-operation. The strategic constellations of actors can be such that they lead to difficulties in achieving the goals of collective action*". One dilemma of collective actions is the so-called *free rider problem*, which refers to an actor who reap benefit from value contributed by other team members without paying for the use (Marwell et al., 1988). The dilemma is that if all actors are rationale and realise that other have the possibility to free-ride they will not contribute themselves (Golembiewski & Olson, 1966). The dilemma also increases in systems with a larger number of participants (Golembiewski & Olson, 1966). Figure 4 aims to illustrate the so-called free-rider problem and can be seen below:

		Player 1	
		<i>Collaborate</i>	<i>Defect</i>
Player 2	<i>Collaborate</i>	6 / 6	10 / -2
	<i>Defect</i>	-2 / 10	0 / 0

Figure 4. The total value of the system is the sum of the numbers in each quadrant. One can see that the highest value in the system is when both players collaborate. But if one player defect (free ride) they will get the most individual value from the system.

2.4 Customer value

When developing new products or services, a central purpose is to deliver value for the customers. In a study from 1997, Woodruff identified a need for consolidation of fragmented definitions for the concept of customer value, which also was an area growing at that time as organisations started to view it as a source of competitive advantage (Woodruff, 1997). Woodruff (1997, p. 142) uses the following definition for customer value; “*Customer value is a customer's perceived preference for, and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations*”. The definition implies that there are three levels that determine the overall customer value which Woodruff (1997) arranges into a hierarchy. At the lowest level (first level), customers can perceive value based on the attributes of a product and the attribute performances. At the mid-level (second level), customer value is determined by the consequences of using the product in real situations. Finally, at the top level (third level), the customer can perceive value if the consequences of using the product facilitate the organisation to achieve its goal and purpose (Woodruff, 1997). Woodruff (1997) argues that the hierarchy can help organisations understand what more they need to know about their customers in addition to the first level of the hierarchy, which usually receives much attention.

Further on, in the literature of service quality the lack of understanding of customers are described as gaps (e.g., Parasuraman et al., 1985; Sharma & Lambert, 1994). One of the gaps arises when there is a mismatch between what the customer expects from a service and what the provider believes the customer wants (Parasauraman et al., 1985). This gap has the potential to hamper an organisation’s attempt to deliver value to its customer (Woodruff, 1997). Ulaga (2003) also acknowledges that there exist many definitions of customer value in marketing literature but that four characteristics are recurring. First, customer value is subjective; second, customer value is a trade-off between sacrifices and received benefits; third, sacrifices and benefits are multi-faceted, meaning that the perception of sacrifices and benefits may vary

between customers; fourth, the perception of value is relative to competition. In short, the general description of customer value is the trade-off between what you receive and what you give (Ulaga, 2003).

2.5 Customer Relationship Management and CRM-systems

The term customer relationship management was introduced in the 1990's and have since then grown to be more important for corporate strategy (Kumar & Reinartz, 2012). It has become a core topic as companies and organisations have realised that customers hold an important economic value. Hence companies are trying to become customer centric, looking to the needs of their customers to generate long-term competitive advantage, rather than continuing a product centric path (Chen & Popovich, 2003; Kumar & Reinartz, 2012; Reinartz et al., 2004).

One main aspect of customer relationship management is to create one consolidated view of customers across the whole organisation by systemically sharing customer intelligence over all different customer facing functions (Reinartz et al., 2004). It is not uncommon for a customer to interact with a company at different touchpoints, for example when a customer buys products from a company and interacts with different departments for each product (Reinartz et al., 2004). A customer's touchpoints with a company can be both physical and non-physical such as via the internet, e-mail, direct sales, phone calls or a coffee meeting (Chen & Popovich, 2003). By having a customer relationship management process in place, a company aims to capture these different interactions to establish an overview of the customer that can be shared among all departments (Reinartz et al., 2004). For some organisations customer relationship management is synonymous with a technology solution such as a CRM-system, while for others it is a tool for one-to-one communication with customers (Peppers & Rogers, 1999). Chen and Popovich (2003) argue that it should rather be a mixture in form of a customer-driven, and technology supported business process management strategy that optimises customer relationships and includes the whole organisation to maximise the profitability of customer interactions. Research has shown that it is very common that the customers who contributes most value and best margins receives relatively little attention, while customers with lower value receives much relative attention by companies (Reinartz et al., 2004). Hence, it has been argued that customer relationship management should not be about maximising the amount of customer interactions but rather about building the right kind of relationship with customers based on their value for the company and provide fair share of attention accordingly (Reinartz et al., 2004).

Customer relationship management initiatives aims, and has shown, to lead to higher competitiveness by increasing operational efficiencies and increasing revenues. By nurturing relationships with customers effectively, companies can increase customer satisfaction, loyalty, retention, and profitability (Chen & Popovich, 2003; Ko et al., 2008). As previously stated, customer relationship management aims to capture customer interactions and share intelligence over the organisation. According to Chen and Popovich (2003), the effects of customer data sharing can result in for example:

- *Better customer service*
- *Opportunities for cross-selling and up-selling*
- *A clearer view of customers' needs and habits*
- *A complete view over customers*
- *Increased possibility for targeting of segments and specific customers*

To support customer relationship management strategies and information sharing it is common to use a CRM-system (Ko et al., 2008; Chen and Popovich, 2003). A CRM-system is a type of information system that falls into the category of enterprise systems (Zwass, n.d.). Enterprise systems are used for collecting, storing, and processing data (Zwass, n.d.). CRM-systems can support organisations in customer relationship management by helping the organisation to get a full overview of customer information and interaction which can be shared among the system's users (Zwass, n.d.). The systemic way of collecting and storing information can allow companies to answer important questions such as *What is important for our customers? What are our customers' needs? How do we interact with our customers? What activities are we doing with our customers?* (Chen and Popovich, 2003). CRM-system applications can be considered as operational or analytical (Foss et al., 2008). Operational CRM-system applications aim to increase operational efficiencies such as lowering the time it takes for a salesperson to find information about a customer before having a sales call or meeting. Analytical CRM concerns the applications that gather customer information in one place and allows for analysis of information to improve decisions and actions (Foss et al., 2008).

2.5.1 Value networks and Network effects

The CRM-system is a platform that can be considered as a value network with the function of mediating communication and information sharing between its users (see figure 5 below). A value network consists of four components which are (1) an organisation that provides the service (for instance, the case company), (2) users in the network (e.g. employees), (3) a service enabling interaction between the users (e.g. the CRM-system), and (4) contracts that permits users access to the service (e.g. licences) (Øverby & Audestad, 2021). A value network is not a physical network but rather an abstract network of relationships between stakeholders. The strength in a value network builds on the quality of the service and the number of users active in the network and especially how the users stimulate other users to join the network. If the value of the network increases for one user when another user joins the network a phenomenon called network effect is present (Katz & Shapiro, 1994). In value networks, the value which is perceived by users is that information can be shared between them, and the value is the number of connections that can be established between different users (Øverby & Audestad, 2021). Thus, in a CRM-system there is on one hand a positive network effect that comes from an increase in the number of active users which increases the perceived value by the individual user, and on the other hand a negative network effect that comes from a decrease in the number of active users which decreases the perceived value. In value networks with network effects there exists a threshold of a certain number of users called the critical mass which must be obtained before a rapid growth in users and value occurs (Øverby & Audestad, 2021). The challenge is however to reach a critical mass in a short period of time. If this is not achieved

fast enough there is a risk that the growth curve takes a downturn, and the service fails (Øverby & Audestad, 2021).

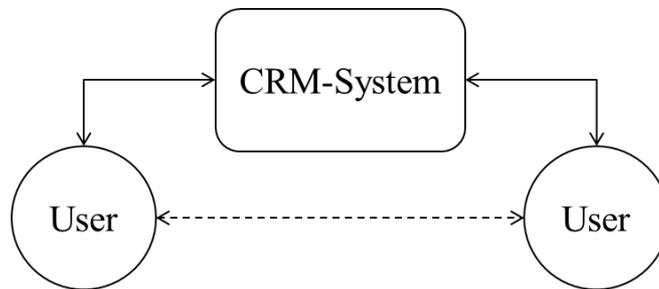


Figure 5. Demonstration of a CRM-system as a value network enabling information sharing between users.

3. Methodology

In this chapter the applied research methodology of the thesis will be described and discussed. Also, some background of the case and the case corporation will be introduced.

3.1 Research approach and design

The chosen method for this master thesis was a qualitative study with an abductive approach, which is a mix between the inductive and deductive research approach (Bell et al., 2019). The abductive approach entails a less linear direction as in the deductive and inductive approaches and instead suggest an iterative process between theoretical and empirical work (Bryman & Bell, 2015). The reason that a qualitative research approach was chosen was because qualitative research emphasises words rather than numbers in the collection and analysis of data, to get an in-depth understanding of the situation at hand (Bell et al., 2019). The study began with general research questions that were pivoted during the project as the authors learned more about the setting (Taylor et al., 2015). Thus, a flexible qualitative research design was used (Taylor et al., 2015). The research design was a single case study of one company (alpha, α), implementing a new CRM-system. Semi-structured interviews were used as the primary research method to collect data for both groups of interviewees. The interviews were recorded, transcribed, and coded.

3.2 Research methodology

The workflow consisted of three primary stages that were revisited in iterations when necessary. The first stage was a literature review to cover existing research on the topic in focus. In the second stage, data was collected through interviews, observations, and internal reports. In the third stage, the collected data was compiled, analysed, and interpreted. The structure of the workflow is summarised in figure 6 below.

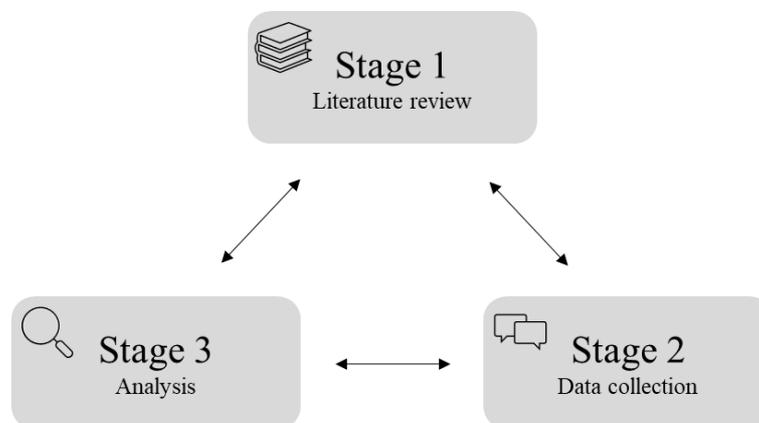


Figure 6. Structure of workflow

3.2.1 Literature review

The literature review was conducted to generate a general understanding of the topic and investigate what had been covered in prior research. To find relevant literature, the software “connected papers” was used in combination with searching in databases like ProQuest, EBSCO and Web of Science. When searching the databases, relevant keywords were used, one such example could be “Affordance AND CRM”.

3.2.2 Data collection

The sampling approach that was used was purposive sampling, which is central in most qualitative research. It means that the research questions guide the sampling considerations, that is, interviewees are selected based on their relevance to the research questions (Bell et al., 2019). Data was collected through semi-structured interviews and participant observations.

Interviews were conducted with employees from company α who were divided into two categories. The first set of interviewees was selected among employees in charge of the implementation of the CRM-system, both on a national and global level, these were in total four individuals. Interviews were conducted with all three members of the Swedish implementation teams and one high-profile member of the global implementation team. The other set of interviewees was selected among employees who are users, that is employees with a license to the system. These were in total eleven individuals. The interviewee set from the implementation group consisted of both decision-makers and employees that have a more active responsibility in the implementation. The user group consisted of people with different roles and responsibilities who might utilise the system in different ways, thus interviewees of varying character were chosen to account for a broader set of user perspectives. Interviews with both groups allowed for comparison of viewpoints to identify similarities and dissimilarities. A summary of the interviewees can be seen in table 3 below.

One type of purposive sampling that was applied is snowball sampling which implies using initial contacts or interviewees to establish contact with other people of relevance (Bell et al., 2019). Semi-structured interviews were applied to allow for flexibility and follow-up questions on responses from interviewees (Bell et al., 2019). An interview template was developed and used as a foundation for the interviews. The questions were formulated to give the interviewers an indication mainly of:

- (1) How the interviewees describe a CRM-system,
- (2) What values and functions that the CRM-system provides and,
- (3) What the challenges are when implementing the CRM-system, both for them as individuals, and for the organisation as a whole.

This template was iterated during the project, and additional questions were added or modified based on learnings from previous interviews. The templates used can be found in appendix A.1 and A.2.

All the interviews were conducted in a digital format and recorded using the software Microsoft teams. In total 15 interviews were conducted and are summarised in table 3 below. The interviews lasted between 30 minutes and one hour. Interviews were conducted until saturation was achieved.

Table 3. Summary of conducted interviews

Interviewee	Position at company α	Access to CRM system	Category
U1.	Consultant	Since summer 2021	User
U2.	Key account manager	Since autumn 2021	User
U3.	Department manager	Since autumn 2021	User
U4.	Key Account Manager	Since summer 2021	User
U5.	Project coordinator	Since summer 2021	User
U6.	Regional Manager	Since summer 2021	User
U7.	Client director	Since summer 2021	User
U8.	Department manager	Since autumn 2021	User
U9.	Key Project Manager	Since summer 2021	User
U10.	Market manager	Since autumn 2021	User
U11.	Department Manager	Since winter 2022	User
I1.	Local implementation lead	-	Swedish implementation team
I2.	Local implementation lead	-	Swedish implementation team
I3.	Local implementation lead	-	Swedish implementation team
I4.	Global implementation lead	-	Global implementation team

In addition to the semi-structured interviews the authors also made own observations. The authors acted as additional resources in the implementation and thus worked with the CRM-system, participated in meetings with managers, requested employees to conduct CRM-training, and acted as system support to users. These interactions allowed the authors to collect their own observations as complement to the interviews. The authors also participated in two one-hour long kick-off meetings with employees that had not yet been trained in the system. Each meeting had approximately fifty participants. During the meetings the participants got the possibility to share their hopes and fears with the implementation of the new CRM-system. The participation was done to get a broader understanding of the implementation and get more insights of the users and the implementation-team.

Lastly, some data was collected through internal documents within the organisation, specifically documents regarding activity in the CRM-system and user training.

3.2.3 Data analysis

The data in this qualitative research was derived mainly from interviews. The interviews were transcribed using the automatic transcription tool in Microsoft teams and checked manually for errors afterwards by the authors. The data retrieved from the interviews was analysed using qualitative content analysis. The aim with qualitative content analysis is to structure and extract meaning out of the collected data to draw credible and representative conclusions (Bengtsson, 2016). The content analysis comprises an investigation of underlying themes and categories in the content being analysed (Bell et al., 2019). Themes and categories were generated based on, for instance, repetitions and similarities between interviews. The content in this thesis is comprised of interview transcripts. Unlike quantitative content analysis, qualitative content analysis entails constant revision of themes or categories along the course of analysis. Qualitative content analysis, like quantitative content analysis, employs initial categorisation but entails iterative refinement of categories and the generation of new categories (Bell et al., 2019). In order to search for themes and categories in the interview transcript, a coding methodology was used. The coding process entails identifying data that relates to the research objective and breaking up the data into smaller named components (Bell et al., 2019). The software Nvivo 12, a software common for qualitative coding, was used to analyse the interviews and generate themes. Some codes were generated based on the literature on affordance theory. If new codes emerged (in vivo codes) these were added to the list of codes. Below, the coding process is described in a stepwise manner.

Step 1

An initial review of the transcriptions was done individually by both authors and text segments were highlighted based on their relevancy for the research questions.

Step 2

The highlighted text segments were coded in broad categories based on the research questions, for example, *Affordance*.

Step 3

A second round of coding was performed to break down the broader categories into more specific subcategories. Step 3 was iterated several times during the course of analysis and further data collection.

3.3 Case selection

For this thesis, a single-case study was conducted to investigate an organisation who are implementing a new CRM-system across the whole organisation globally. The organisation is a technology consultancy company with a global presence. Markets include, but are not excluded to transport, buildings, water and energy. The new CRM-system implemented is developed by an external party, and the software is well known within the industry. Each

country is responsible for their own implementation but has support from a global level to aid in, for instance, training the employees in the system and providing system support. To conduct the implementation of the CRM-system in the Swedish organisation, three Swedish employees have been selected as the Swedish implementation team.

This thesis was limited to the implementation in the Swedish organisation (Company α). The implementation started in Sweden during the first quarter of 2021 with a pilot project (called Phase I) focusing on one key client. During the third quarter of 2021, Phase II followed with four additional key clients. As of 2022, a more extensive rollout of approximately 150 customers has started while simultaneously phasing out a legacy pipeline management system. The idea is that employees who are in close contact with customers will receive a license to the CRM-system, such as employees who work with business development, sales, marketing or as client managers. In this sense the system will not be an open access tool, meaning that not all employees at company α will have access to the system. Two different types of licenses will be implemented, one license that offers editing rights (edit licence), and the other license offering reading rights (read licence). The licenses are associated with a monthly fee which is substantially higher for the edit license.

In previous phases of the implementation the organisation has experienced difficulties in getting employees active in the system after being introduced. This kind of challenge is not new to the organisation. Some years ago, another CRM-system which was built in-house was implemented but turned out as a failure as employees did not use the system in the end. Company α has a history of low adoption rates in previous local and global implementations and the current CRM-implementation is also facing difficulties. Instead of adopting the new solutions, employees have rather been using local self-made solutions (For instance Excel-spreadsheets). This have resulted in much administrative work and that information are not reused due to a low systematic sharing of knowledge. This calls for a need to understand why the company is facing difficulties.

3.4 Methodology Discussion

In the following section a discussion surrounding the chosen methodology for this thesis is provided. The discussion will cover generalisability, validity, and reliability as well as research ethics.

3.4.1 Validity and reliability

When assessing the quality of research, two important criteria to evaluate is the validity and the reliability of the research. In qualitative research these two criteria are divided into *external* and *internal* validity and reliability respectively (Bell et al., 2019). The following subsection will discuss these criteria in relation to the research methodology of this thesis.

3.4.1.1 External validity

External validity concerns the degree of generalisation of research results (Bell et al., 2019). This thesis was a case study with a focus on one organisation. One concern regarding single case studies is how the external validity of the research is assured, meaning that it is difficult to make the case representative and apply findings more generally to other cases (Bell et al., 2019). In this thesis external validity was considered when sampling interviewees of different characters to account for a more general perception. One potential limitation however of the applied sampling approach of snowball sampling could be that data is extracted from a network of people with similar characters and mindsets thus not capturing the full picture.

Although this is a single case study, the studied situation is not unique for the case company. Therefore, readers should be able to learn and take inspiration from this case study to apply learnings in similar situations.

3.4.1.2 Internal validity

The internal validity concerns the trustworthiness of the research (Bell et al., 2019). It is important to ensure that the research observes, identifies and measures what is expected from the research (Bell et al., 2019). The internal validity of this thesis was strengthened by coding the data since coding helped to make sense of the data in a structured manner. Data collection continued until saturation was identified which also supports the internal validity of the research.

3.4.1.3 External reliability

External reliability relates to which degree the study can be replicated by other researchers (Bell et al., 2019). In general, replicability of case studies is difficult to achieve which is also true in this single case study since the situation is highly time dependent. It is regarded as impossible to freeze a social setting (Bell et al., 2019), thus, it will be difficult for other researchers to replicate this thesis. However, efforts were made by the authors to facilitate the external validity by being transparent in the research methodology and sharing interview template to provide other scholars a clearer view of the process.

3.4.1.4 Internal reliability

Internal reliability refers to the consistency in research conduct, such as using the same setting and format for data collection. It also concerns the subjectivity in interpretation of collected data. In this thesis all interviews were conducted in a similar digital setting and same interview template was utilised in respective set of interviewees. All interviews except three were conducted with two observers and all interviews were transcribed, read through, and coded separately by both authors before a joint discussion to decrease the subjectivity in the final interpretations of the data.

3.5 Research Ethics

This master thesis had the aim to follow the four ethical principles as presented in Bell et al. (2019), which are:

1. *Avoidance of harm*
2. *Informed consent*
3. *Protection of privacy of research participants*
4. *Prevent deception*

In accordance with these principles, interviewees were informed about the thesis and its objectives to ensure well-informed decisions of whether to participate in the study or not and to prevent deception. Prior to the interviews all interviewees were asked if they agreed on being recorded and transcribed to get an informed consent. The authors also requested and got consent from the case company to include observations made outside of interviews. The company name and all participants were made anonymous in this thesis to protect the privacy of interviewees. The nature of this research, which entailed qualitative interviews and observations did not in any way put the participants in risk of harm.

4. Results

In this chapter the findings from the empirical data are synthesised and presented. Selected quotes from the respondents in the interviews are used to highlight interesting views and topics related to the view of the implementation of the CRM-system at company α .

4.1 Perceived Affordances

The following section explains the perceived affordances identified from the interviews with employees from the implementation team (including an interview with the global team) and users at company α , and from observations made by the authors. Perceived affordances are the participants perception regarding what the new CRM-system can enable the organisation in terms of functionality and value. The identified perceived affordances were: *Single entry and access point*, *Aggregated view*, *Data driven actions* and *Cross-Collaboration*. A summary of the identified perceived affordances can be found in table 4 below:

Table 4. Perceived affordances identified from the empirical data

Perceived affordance	Description	Implementer's view	User's View
Single entry and access point	The CRM-system affords to be the only gateway to share and search information about customers, thus it affords a single place to store information related to customers instead of storing information in multiple systems or files.	The CRM-system will become the primary access point to information: <i>"[...] It is the first interface, as soon as you are engaging with a customer, this is where you find the information"</i>	by gathering all available information into one system, it will become clear where to search for information about customers <i>"I think it is really beneficial for us as an organisation to gather these systems into the same system"</i>
Aggregated view	This refers to that employees across the organisation are able to get an equal view of company α 's customers. A difference is that implementers emphasised more on how this could benefit the organisation from an economic point of view while the users mostly emphasised the fact that the system helps in structuring data.	More top-level focus, how can managers benefit from an aggregated view <i>"we will get much better control over our order book, and we will be able to for example retrieve pipeline information for all different portfolios"</i>	More emphasis on the individual users benefits to structure and find data. <i>"It is a business-critical system for us [...] to maintain a structure of our customer contacts and customer relations"</i>
Data driven actions	Comprises action potentials that are made possible under the condition	Brought up the aspect of being able to show the	In contrast to the implementers, users

	that the system is actively fed with data. Overall, both sets of interviewees acknowledge similar action potentials, for instance <i>strategic selling, marketing, or optimising the customer portfolio</i> . However, one deviation is that the implementers identify strategic benefits on a more global level, for instance, by increasing the visibility of the Swedish organisation within the global organisation.	capabilities of the Swedish organisation to be more visible globally to: “Take part in other large global projects and secure revenue also to the Swedish organisation”	highlighted that the system could be utilised to make budgets. [...] if we had X amount of SEK in opportunities at a certain stage of the pipeline, we almost knew how to set the budget [...].”
Cross-collaboration	If the CRM-system is actively fed with information by users, it unlocks the possibility to collaborate across divisions and geographies as users get aware of customers’ touchpoints with the organisation. It enables the organisation to meet customers as a united front.	Implementers saw that the CRM-system might reduce internal competition, and instead create collaboration. “Support them [Sweden] in terms of merging their processes among the different markets”.	The users had a clear view that the CRM-system could allow them to meet customers as a united front. “from the customers’ point of view they don’t meet with division X or division Y, they meet with Company α .”

4.1.1 Single entry and access point

The implementation team emphasise that one expectation of the system is that it will become the primary access point to information about the customers and naturally the one place where employees themselves share their information. In the interview, interviewee I1 stated “*I hope that this is the interface you [employees] know. It is the first interface, as soon as you are engaging with a customer, this is where you find the information*”. The implementers hope that this will lead to less administration, as information becomes easier to find since information that was found in several systems before for each user can now be found in one system. During the kick-off meetings the implementers highlighted that the organisation today utilises many ad hoc solutions and that much information therefore is stored in separate Excel-files.

In this sense, many legacy systems will be integrated, meaning that if the information is put into the CRM-system, this information will automatically be updated in integrated systems, which will lead to less work for employees, interviewee I4 commented on this in the following way “[interviewee imitating a user] ‘Are you adding work to my schedule by giving me this? OK, new system. I got to train on, and I got to enter data. Are you adding something?’ and we say no. We’re actually taking things away from you. Right. And the things we’re taking away from you are all the repetitive things that you would do in the past.”

A similar recurring description from interviews with the users is that the new CRM-System will provide them with one point of access to information concerning company α ’s customers.

Examples of information mentioned by the users are opportunities (meaning a potential business opportunity with a customer), contact information, notes from client interactions such as meetings, phone calls, and email conversations, framework contracts, and key account plans. Interviewee U3 summarised it as follows: *“It is a way of gathering information about our customers [...] for the whole organisation, and that everything is stored in one place”*. Several interviewees (U1, U2, U5, U10) suggest that by gathering all available information into one system, it will become clear where to search for information about customers. Similar expectations were highlighted during a kick-off meeting with employees that had not yet been trained in the system. The employees expect the system to provide a better structure of data regarding customers and that they would from now on only need to look to one system when working with customer information.

Another aspect that the users brought up is the integration of other systems into the CRM-system. There are mixed perceptions about this in terms of the degree of integration with other systems the new CRM system can offer, but some users were aware of the possibility to integrate several systems. For example, interviewee U2 see the implementation of the CRM-system as a way of integrating systems such as the company’s quality assessment tool and framework contract portal, which would lead to less administration. The interviewee concludes that *“I think it is really beneficial for us as an organisation to gather these systems into the same system, and that it gets easier for us to act on the information”*. The interviewee described this as *“one entry point”*, meaning that the user will not have to go into several systems to enter the same information. This standpoint is very similar to what the implementers want to mediate, which will lead to less work for users.

To summarise, the first identified affordance, *single entry and access point*, is seen by both users and implementers as the only gateway to share and search information about customers. The CRM-system thus affords a single place to store information related to customers instead of storing information in multiple systems or files.

4.1.2 Aggregated view

The second identified perceived affordance was to get an aggregated view of customers by using tools provided by the system, by, for instance, summarising data points for a specific customer.

The system was described by the implementers to have the potential of allowing information sharing in the organisation and an overview of what is going on with a customer in terms of potential deals, customer interactions and what people who are in charge for a specific customer relation. This was emphasised by Interviewee I2 *“I believe many people miss this kind of tool when you work with a lot of different systems in different places. Then the information sort of gets stuck even though it is information that a lot of people could benefit from. And this [the CRM system] becomes an aid because by working in the CRM system and putting in the extra work then I get to take part of what others are doing. So, we will share information together in a much better way. [...] People working with bigger customers will get a much better overview*

of how things are looking regarding a customer”. Interviewee I1 also highlighted that the system can be very important from an economic perspective, not necessarily in the sense of increasing business performance but in the sense that the organisation can get a better overview of the current business situation, since *“we will get much better control over our order book and we will be able to for example retrieve pipeline information for all different portfolios, from an economics perspective it [the CRM system] is gold worth”*. This highlights more top-management benefits than what the users highlighted.

Another thing that was pointed out was that the CRM system will help employees to better understand the structural complexity of company α 's customers and what contact points company α has with the customers together with contact information. Interviewee I2 stated that *“it is very common that companies, large companies, owns smaller companies and there is a hierarchy that we will be able to view in the system. Then we enter our contacts that we have at these different companies and that is something we can collect, the contact points that we have”*.

The aggregated view was the most evident affordance identified from the interviews with users. Much like the implementers described, the aggregated view is based on transparency in information, which allows users to get access to and view the same information about the organisation's customers, information such as customer interactions, updated sales pipeline, and customer contact information. This was highlighted by several users *“It is a business critical system for us as a technology consultancy company based on our challenge to maintain a structure of our customer contacts and customer relations”* (Interviewee U6), *“You should be able to see the same information, because I know that people today use their own separate excel sheets”* (Interviewee U5), *“To collect facts about our customers and submit opportunities for the whole organisation so that it is gathered in one place and so that you can get an aggregated view of what is going on. Because for example customer X that I work with is a customer that several of our divisions work with and it is very difficult to get an aggregated view of the customer unless we have a system to collect everything in”* (Interviewee U3).

Another interviewee also mentioned that having an aggregated view can save some time since the interviewee does not need to call or email colleagues to get information about other current customer engagements; *“It can shorten the time you need to put in calling people or arranging meetings (...) there is one place [the CRM system] that you go to”* (interviewee U1). The interviewee thus suggests that having an aggregated view would lead to more efficiency within the organisation.

To summarise, both implementers and users saw that the second identified affordance affords the actor with an *aggregated view* of customer related content. This refers to that employees across the organisation are able to get an equal view of company α 's customers. In simpler terms, if an employee at Company α is looking for all available information concerning a customer, the CRM system should be the only source of information that has to be searched. A difference is that implementers emphasised more on how this could benefit the organisation from an economics point of view while the users mostly emphasised the fact that the system

helps in structuring data. The fact that this was brought up in many of the interviews, both from implementers and users indicates that this is the central affordance that both users and implementers perceive that the CRM-system can provide to the users of the system.

4.1.3 Data driven actions

The third identified perceived affordance is data driven actions which is a collective name for affordances enabled by data in the CRM-system. Implementers brought up the potential to identify key customers and optimise the customer portfolio to increase profit in Sweden. An issue that Company α is experiencing in Sweden is that it deals with a large number of customers and a very large share of these customers only account for a small share of the annual total revenue which is costly in terms of administration. Thus, Interviewee I2 sees the CRM-system as a tool that could help the organisation to strategically grow key clients by getting control over customer relationship management. The interviewee exemplified this in the following way *“Now we have chosen 35 customers. These customers we will work extra hard with. Then it becomes clear in the CRM system, who is responsible? Who is expected to work with this? (...) On the financial side we can say that ‘today we have an annual revenue of x million SEK for these customers, next year we should have an additional z million SEK in annual revenue for these customers and then we can actually use the system to focus on activities and we can see what we have performed with customer X? We have actually grown revenue for customer X but not for customer Z. Are there any differences in terms of activities or relations?’ In that way we can start to make our work more effective and hopefully let go of some of the smaller customers”*. In other words, the system is viewed as a potential tool to analyse the current situation, set goals, follow the progress, and evaluate results and impact of actions.

Implementers also highlighted that the increased customer knowledge that would result from a CRM-system with updated information would allow for strategic selling and the ability to direct messages to customers based on their needs and focus. Interviewee I2 said that *“if we get everyone to enter information about [for example] that ‘I spoke to this customer about digital twins or I spoke to that customer about energy efficiency’ then we can perhaps start to send separate messages to those who were interested in energy efficiency or digital twins, we can use the [CRM] system to direct our communication in the right way to potential customers”*. Interviewee I1 continued to explain more how the CRM system could practically aid in marketing *“I think it [the CRM system] facilitates a lot in an interface to for example marketing where you send invites directly from the [CRM] system and can activate different type of contacts for different objectives (...) you don’t have to use separate list of contacts for different events or account based marketing, it is done automatically in this [CRM] system”*. Overall interviewee I4 summarised this as working more customer centric with a 360-degree view of customers. The interviewee stated that by *“knowing all the projects we’re working on or the projects that we can work on with our clients allows us to be thought leaders that’s being more client centric”*.

Empirical data from user interviews also suggests that data driven actions is a perceived affordance. Users saw that by having an extensive and aggregated view of customer information can allow the organisation and its employees to make informed decisions and work more strategically in their sales work. This was highlighted by Interviewee U2 who explained that the CRM-system could allow them *“To be able to act strategically when we have all information collected in one system”* and to *“increase how we work strategically with our sales and our customers”*. Working strategically with sales and customers means, for example, that the organisation can be more directed in its sales by knowing more about its customers’ needs and focus areas (based on for example customer interaction notes in the CRM system), the organisation can direct information and invitations to events held by Company α to contacts registered in the CRM system. This was exemplified by Interviewee U4: *“If we want to inform [customers] about things we do and if we want to use those contacts to send invitations to different things and that we can work more professionally in our proactive sales (...) then we can for example go into account based marketing and profile ourselves within whatever they [the customers] are talking about, whether it is BIM (building information modelling) or sustainability or whatever it is”*. The strategic selling brought up by the users had many similarities with the concept that implementers highlighted in their interviews.

Just like the implementers, users saw the data driven action of optimising the customer portfolio and focus on certain businesses or deals. Analysis of the data from the CRM-system can allow the organisation to look specifically into a specific customer category or to identify the level of engagement with different customers or where most deals are won. This was explained by Interviewee U1 *“I believe it will allow strategic customer management in a completely different manner, a sort of optimisation of the customer portfolio, that you can prioritise among customers eventually. It will reasonably result in that you can make wiser business decisions in relation to our strategy”*. This was further strengthened by Interviewee U3 *“I am thinking that it should help company α to focus on certain deals. Perhaps help us get stronger in certain areas and that we will be more easily informed about what is going on and what businesses we have with a customer”*. This much relates to the possibility to grow key clients, brought up by the implementers.

Finally, the CRM-system could also assist management when setting budgets which was highlighted by Interviewee U7 who also had previous experience from working with another CRM system. The interviewee referred to this earlier experience and said that *“eventually we almost gave up on our normal budgeting tools and only looked at the sales pipeline [in the CRM-system] because we became very good at knowing if we had X amount of SEK in opportunities at a certain stage of the pipeline, we almost knew how to set the budget because we knew [statistically] how much would go through”*. The possibility for budgeting is one example of a data driven action only brought up by the users. Another difference between the sets of interviews was that the implementers highlighted that by utilising the CRM system and other global (in terms of company α) frameworks the Swedish organisation can be more visible internally within the global organisation and *“can take part in other large global projects and secure revenue also to the Swedish organisation”* (Interviewee I1). This was a potential that users did not seem to have identified.

To summarise, the third identified affordance, *Data driven actions*, comprises action potentials that are made possible under the condition that the system is actively fed with information by users and provides an *aggregated view*, a condition that is highlighted in the interviews. Overall, both sets of interviewees acknowledge similar action potentials, for instance strategic selling and marketing, or optimising the customer portfolio. However, one deviation is that the implementers identify strategic benefits on a higher level, for instance, by increasing the visibility of the Swedish organisation within the global organisation.

4.1.4 Cross-collaboration

One last identified affordance from the interviews is cross-collaboration. This term relates to that the CRM-system, if adopted widely within company α , could facilitate work across different markets and geographies. Many interviewees described the organisation of company α as silo based today, and interviewee I3 highlighted that some divisions even have an internal competition of customers. Interviewee I4 see that Sweden is not unique in this silo-based sales process but suggests that the CRM-system will: *“support them [Sweden] in terms of merging their processes among the different markets”*. Interviewee I1 also saw this as a benefit for the organisation because the *“nodes of the organisation could be connected regarding customers and how we work with customers”*.

The user also emphasised that the CRM-system could enable cross-collaboration. Interviewee U2 explained that having an aggregated view of customers *“would be very useful on a broader level and would facilitate working with very big customers that span several markets when we work cross divisions or multidisciplinary”*. Interviewee U2 also highlights that the CRM-system can help to share insights and learnings from one part of the organisation which then can be used by another part of the organisation in relation to a customer *“we can easier get access to information about the client from different parts of company α which then can be applied in other parts”*. Interviewee U1 continues and states that *“The ambition is to be able to work more over both geographical boundaries as well as other types of organisational boundaries. And I believe this [CRM] system could really help us achieve that”*. The cross-collaboration aspect was also highlighted as an expectation from employees during a kick-off meeting, that the system could allow for better collaboration within the organisation and with customers.

Another expected effect of cross-collaboration and information sharing is that the customers' view of company α would improve in the sense that the customer would perceive company α as one entity and not as a silo-based organisation. This was highlighted by Interviewee U1 who stated the CRM system will hopefully bring along *“a different systematic also when working with the customers, that it is not spread out. Because from the customers' point of view they don't meet with division X or division Y, they meet with Company α . So hopefully it [the CRM system] can strengthen how Company α is perceived by customers, simply as more cohesive and more synchronised”*. Similarly, Interviewee U3 adds on that *“if we are discussing harbours with Customer Z in Stockholm, then we need to know if we are also discussing harbours with*

Customer Z in Gothenburg so that we become a more professional supplier to our customers.” To approach customers as a united front was mentioned during the interviews with implementers, but the users seemed to put more emphasis on this effect of an active usage of the CRM-system.

To summarise, the fourth and final affordance identified from the empirical data is labelled as *cross-collaboration*, meaning that if the CRM-system is actively fed with information by users, and an aggregated view is constructed, it unlocks the possibility to collaborate across divisions and geographies as users get aware of customers’ touchpoints with the organisation. It enables the organisation to meet customers as a united front.

4.2 Affordance Actualisation variables

This section aims to present identified variables that influence the actualisation of affordances of the CRM-system, both from the user's own perspectives and the implementers' perspectives. The variables have been identified from the empirical data from the interviews and observations and have been labelled by the authors through a partial adaptation of the framework by Pozzi et al., (2014). Some of the variables identified have similarities with Pozzi et al., (2014) variables and have been labelled accordingly, while other variables emerged from the data and has thus been named by the authors of this thesis. See table 6 below for a summary of the identified actualisation variables.

Table 5. Identified affordance actualisation variables and their origins

Variables	Description	Origin	Illustrative quotes
Technology configuration and features	How the set-up of the system and features facilitate or hinder employees in their usage of the system.	Pozzi et al., (2014)	<i>“It is so damn big, that is the big problem that I have to do custom made settings to get what I need”</i>
Attitude	How the attitude towards the system and its implied work practises affects the decision to use the system.	Pozzi et al., (2014)	<i>“Now we are going to learn a new system again and perhaps this system fatigue colours the possibilities with a new system”</i>
Degree of effort	The real or expected degree of effort required by the user to be able to actualise affordances.	Pozzi et al., (2014)	<i>“It was an extremely ambitious training”</i> <i>“If there is a lot of data that should be put into the system, and not everyone can do it, then it becomes a big weight for some individuals who have access to a license”.</i>
Actors' ultimate goal	The alignment between actors’ ultimate goal and the expected outcome of using the system.	Pozzi et al., (2014)	<i>“There is a concern that there is another system that I have to learn about and a doubt about if this is really something that we have to learn.”</i>

			<i>“Why are we doing this and how can I benefit from what is put into the system”</i>
Organisational level of skill or knowledge	The readiness of the organisation and its employees to use the system.	Pozzi et al., (2014)	<i>“We are working with much more complex programs than the CRM-system”</i> <i>“[...] I believe we are digitally mature”</i>
Synchronisation of implementation	The effect of coordination and pace of user training on the actualisation of affordances	Emerged from data	<i>“Now we are going to start [using the CRM system] a month before they do, just to do work [in the CRM system] that we potentially will have to synchronise with them [when they get access to the system] [...]”</i> <i>“We did a big push in the beginning and then it can’t be too long time in between, I think we should have had a higher tempo in it [the implementation], to be honest”</i>
Role modelling	To what degree managers lead the way and set example for employees to follow.	Emerged from data	<i>“We need support from management teams and from department managers [...]”</i> <i>“Of course there is a positive attitude from at least some higher-level managers, but not from all”.</i>
Shut down and integration of legacy systems	Mitigation of need for parallel system usage	Emerged from data	<i>“There is a period now when those who are using the system perhaps experience that they are using many parallel systems”</i> <i>“I believe it will be important that you don’t experience that you as a user have to go in and do double documentation in several different systems”</i>
Reaching a critical mass	How the number of active users affects the possibility to actualise affordances.	Emerged from data	<i>“The CRM-system is just a tool; it is the people behind it that still have to put in the information into it. Otherwise, it is quite useless”</i> <i>“[from a user point of view] I’m in CRM, but my colleagues</i>

			<i>aren't so I can't benefit fully from CRM yet"</i>
Collective action problem	To what degree users restrain themselves from action due to others lack of activity or expected lack of activity.	Emerged from data	<i>"I think there is a tipping point when enough users are in the system. Right now, there have only been a few users [...] But when the reality is that the big mass is in the system, I think that will be the driving force for me"</i>
Support and communication	How support in the system and communication regarding the implementation facilitates user activity in the system.	Emerged from data	<i>"[...] weekly check-ins with CRM support teams that are very hands-on and where you can get help with your issues [...]"</i> <i>"I miss a Swedish support group [...]"</i> <i>"We have been waiting a bit [to begin using the CRM system] because nobody has told us to stop using the old system [a sales pipeline system] and our other stuff, so then we feel that we don't want to put in the effort doing everything [...]"</i>
Way of working	The effect of structure and guidelines on users understanding of how to use the system and their role and responsibility in the system.	Emerged from data	<i>"We need to find a way of working; I know that there have been some questions about for example 'should we enter everything in the system?' There exists unfamiliarity in documenting [...]"</i>

4.2.1 Technology configuration and features

One variable that affects the actualisation of an affordance is the configuration and features of the IT artefact (Pozzi et al., 2014). From the empirical data, it is evident that the view of the CRM system is mixed for different employees. Some think that the system is intuitive and easy to use while others experience the system as big and complex. Some employees even think that the system lacks some features and consider the system to not be fully developed yet. A good example of this was stated by interviewee U2: *"...you need help to proceed, not because I lack the technical competency to handle the system but rather because the system is not fully developed yet [...] Today there are a couple of features missing"*. Another aspect of the features of the system is how easy they are to use. Several interviewees bring up this aspect of UX design, for instance, interviewee U4 concluded that there were too many clicks and paths within the system to get to where the interviewee wanted to get. Another interviewee (U3) simply concluded it as *"It is so damn big, that is the big problem that I have to do custom made settings to get what I need"* This phrase concludes many of the interviewees feeling regarding the

system that they would have preferred if the system was configured to restrict users to make too many choices and rather have a clear-cut path.

One feature that some interviewees have highlighted as something that is missing is a way to restrict access to certain information that they don't find appropriate to share with the whole organisation, such as strategic plans for key clients. Interviewee U3 for example expressed a scepticism towards that everyone with licenses will have reading permission for everything that is in the system. Interviewee U3 is used to work with authority-controlled areas connected to deals, money, and strategies, “[...] *meanwhile, here [in the CRM-system], everything lies open [...]*”. The interviewee is concerned over, for example, employees that are about to change jobs and join competitors, that they might bring sensitive information with them. Interviewee I3 also highlights this and think it will be important that “[...] *employees feel confident in Company α's authorisation control in order to feel safe entering their information*”.

The authors have also observed additional issues when interacting with managers and employees. Firstly, there seems to be misalignment between terminology used in everyday business and terminology used in the system. This misalignment is causing frustration and misunderstandings as it is difficult for people to understand what information the CRM-system is asking for. Secondly, the CRM-system is currently configured in a way which does not reflect the company structure of company α's customers and how the organisation does business with the customers. For example, large companies usually have subsidiaries with which company α does their business with. However, these subsidiaries, despite being registered in the system, cannot be coupled with when registering business opportunities or registering contacts and activities. This is causing frustration and hinders users to get a correct overview of touchpoints and related activities.

4.2.2 Attitude

The next identified actualisation variable that has been identified is the attitude towards the new CRM-system. A negative attitude that has been spotted stems from something called system fatigue. There seems to be a general negative attitude against new systems simply because it is another system that employees must use in their daily work along with all other systems they are already using. Also, company α has recently implemented several new systems nationally for different purposes where the CRM system is the latest one. Many interviewees among the users have highlighted this issue, for example “*Now we are going to learn a new system again and perhaps this system fatigue colours the possibilities with a new system*” (Interviewee U2), “*I would not say that people are lazy, but the thing is that we have incredibly many systems and lists where you are supposed to fill in stuff*” (Interviewee U4), “*I think we are digitally mature [for the CRM system]. But I think we are quite digitally tired. That the organisation has a sort of fatigue because of new systems*” (Interviewee U3), “*but there is some sort of general system fatigue that I hear in different matters*” (Interviewee U1). The quotes reveal that system fatigue is an established notion in the organisation, and it was also highlighted as one of the main concerns among employees during the kick-off meetings.

This concern is not only something that the users have identified, but the issue has also been recognised by the implementers. Interviewee I1 stated that *“there is also a certain system fatigue in the organisation because there is a history in our company that we have rolled out plenty of different systems without being fully coordinated and that we have perhaps not fully understood the value creation of it further down in the organisation”*. Interviewee U6 has a similar view after talking with colleagues who based on previous experiences of implemented support systems thinks *“[...] that every system that we implement will be bad, before even looking at the system”*. Interviewee U6 explains that it has unfortunately almost become an established truth that new systems will be a failure. Interviewee I3 who has been part of other system implementations at company α has also identified an attitude in the organisation which the interviewee finds alarming which is that people seem to *“[...] expect to get the effects [of the new systems] for free without having to make an effort [...]”*. In addition, when the authors have told employees at company α that they assist in the implementation of the new CRM-system, the response have many times been sarcastic, *“ahhh, Good luck with that”* this supports the statement by interviewee U6. However, interviewee I1, I3, U4 and U7 also claims that the attitude in the organisation towards the new CRM system is not only negative, but many employees are also welcoming a new structured way of working with customer information, hence it seems to be a split in attitudes among the employees. Still, when the authors have been participating in different meetings, mainly with managers, people are talking in terms of *“we have to get started now, we need to start put our information in the system”*. However, *“we”* seems difficult to translate into *“I”*, which is delaying the start as it is easier to move the responsibility of taking the first step from oneself to somebody else.

Another identified attitude from the interviews was that not all employees had the ambition to share information about customer contacts and leads with other employees in the organisation. One reason for this is that the contact network of an employee makes the employee not only valuable for company α , but also for other employers if the employee would consider changing job. For instance, interviewee U6 acknowledged that some employees had the mindset: *“It is my contacts, that is a value in itself and make me valuable for the organisation to know that ‘it is only [name] that know those customers. Therefore [name] have a low incentive to share with the company, here is a list with everyone that I know”*. Interviewee I3 confirms this when asked if they are aware of employees within the organisation that are not willing to share information *“Yes, we have such employees”*. But the perception regarding this is mixed among the interviewees. For instance, both interviewee U7 and U11 do not think that such culture exists within the organisation.

4.2.3 The degree of effort

Another actualisation variable is the degree of effort that the actor must invest to act on an opportunity. The empirical data showcased that many interviewees have experienced a barrier to entry to the system in the form of a compulsory digital education package. To get access to the system the user had to complete two sessions of training of approximately two hours each. A general conception in the company was that these trainings were too long, thus considered

to be a big effort to complete. This was highlighted by interviewee U3: *“It was an extremely ambitious training”* and continued *“Those courses... I can’t remember how many there were but it was several days”* the fact that these four hours felt like days for the interviewee gives a hint of the general attitude towards the training. The authors got the same impression when interacting with employees. As the authors supported the implementation team in requesting and reminding employees to conduct their training in the CRM system the authors many times received responses like *“I don’t have time to do it right now”* and *“Is the training that long?”*. Although employees were instructed to communicate to the authors once they had conducted the training to get their licenses, the majority did not respond. This ultimately means that many employees that are supposed to undergo training has not, which is also supported by internal reports, pointing to the fact that the training is considered to require a big effort to get through.

Some interviewees also mentioned concerns that the system would lead to bigger administrative work for some employees since not all users will have the edit license. This extra load was discussed both in terms of having to chase other employees for data and managing other employees' opportunities. Interviewee U8 hopes that: *“This does not reach a level that is too burdensome administrative wise [...] and that I do not need to request information from all employees that have contact with customers, because that is not sustainable”*. The reason given is that many employees have daily contact with customers, which would lead to a lot of data to be gathered and entered in the CRM-system. Interviewee U8 concludes that: *“if there is a lot of data that should be put into the system, and not everyone can do it, then it becomes a big weight for some individuals who have access to a license”*. The concern regarding increased administration was also highlighted as one of the main fears among employees during the kick-off meetings.

4.2.4 Synchronisation of implementation

Company α has a quite complex organisational structure with local divisions as well as units connected to the global organisation. The complexity of the structure has made it difficult to synchronise the implementation so that, for example, the right employees receive training and licenses at the right time. This has affected some employees negatively in becoming active in the system. Interviewee U11 highlighted that the time between doing the training *“[...] and until the managers started talking about this as something we are going to work with now [...]”* should have been much shorter and more synchronised to not lose momentum and forget the training. A different aspect mentioned by Interviewee U6 was the issue that some units and divisions that work closely to each other with the same clients and projects are being introduced in the CRM system at different times, *“Now we are going to start [using the CRM system] a month before they do, just to do work [in the CRM system] that we potentially will have to synchronise with them [when they get access to the system] [...]”*.

The difficulty in implementation has affected the speed of which employees have been able to be trained and launched in the system which have made it difficult to keep up the momentum and energy in the implementation. Interviewee U4 said that *“We did a big push in the beginning and then it can’t be too long time in between, I think we should have had a higher tempo in it”*.

[the implementation], to be honest". In the interview with interviewee I4 it was mentioned that the implementation team had seen more positive results in the implementation in countries where a faster pace in the onboarding of employees in the whole organisation had been used. Whereas Sweden has had a slower implementation by issuing training for different parts of the organisation in a stepwise approach. Starting with a pilot of employees working with company α 's biggest customer. This have hindered the reaching of a widespread adoption of the CRM-system, something that also was highlighted by other interviewees.

4.2.5 Actors' ultimate goal

The ultimate goal of why an actor should use the IT artefact can be a strong stimulus towards actualising an affordance. "*What's in it for me?*" interviewee U6 asks and continues to explain that the organisation is successful in describing how the system is used but not necessarily why the system is used. "*Sometimes we skip the step of 'why should we have a CRM', I who work in those contexts can understand, but it is not as clear for everyone why we should have it*". Overall, many interviewees ask either themselves or have heard others ask many "why" questions. Interviewee U1 describes that a heritage from previous implementations is that there have been many systems to report into and that employees have not seen the value of reporting into these systems for themselves but rather that they create value for someone else. "*There is a concern that there is another system that I have to learn about and a doubt about if this is really something that we have to learn.*". The message from interviewees is that this system cannot only be another add-on but rather that the value of the system must be communicated clearly. Empirical data show that although some interviewees see that the CRM-system can be used to fulfil goals, not everyone sees this benefit. Another angle is that the value must be communicated on a more individual level. Interviewee U9 want to see more tailor-made solutions and communication to answer the question "*Why are we doing this and how can I benefit from what is put into the system*". The interviewee suggests thinking about this, as the different users will get different benefits from using the system. The lack of communication regarding why the CRM-system should be used could be one part of the explanation to why the authors observed a low priority among employees to conduct their CRM-system training.

4.2.6 Organisational level of skill or knowledge

The next actualisation variable identified is the organisational level of skill or knowledge. In the interviews with users and implementers, the interviewer asked if the interviewees believe that the organisation has the digital maturity that the new CRM system requires. The general perception is that they are digitally mature and that the technical skills required for using the CRM system should not be an obstacle. Interviewee U2 for example highlights that the organisation is already using other products from the supplier of the CRM-system which have similar user interfaces. In addition to that interviewee U2 also states that it would be a surprise if the CRM system would be difficult to take on for the organisation since they are "*[...] working with much more complex programs than the CRM-system*". Interviewee U3 agrees and plainly states "*[...] I believe we are digitally mature*".

The technical skills are one dimension of skills that is required for using the new CRM-system, another dimension is having an established sales mindset and skill which the CRM-system is supposed to support. This topic was especially highlighted among the implementers that the organisation has a relatively low maturity when it comes to sales. Interviewee I3 did for example highlight that the CRM-system is less about administration, that is being practically able to work in the system, and more about softer traits as having the trained mindset of a salesperson. The reason why is because if you do not have that mindset “ [...] you will not register the information that comes to you, in your own head that is” Interviewee I3 states, meaning that you will not mentally register valuable information which then should be registered in the CRM-system to potentially create value in form of more business opportunities. Interviewee I1 has a similar perception that the organisation is relatively immature in the way of working with customers. Interviewee I1 finds it challenging that the organisation is implementing a CRM-system that is supposed to support a certain way of working with customers that is not yet fully developed within the organisation. Interviewee I1 states that “[...] it is not really the most optimal order to do it” and that the right order would rather be to have an established way of working and then implement a system to support that way of working. Thus, the challenge for the organisation now is not only to implement the CRM-system but also in parallel “[...] cope with driving the change concerning how we [the organisation] work with customers” (Interviewee I1).

4.2.7 Role modelling

The next actualisation variable identified is Role modelling. There seem to exist a consensus between user and implementers that for the organisation and its employees to become active in the new CRM-system and be able to harvest value from the system, the organisation needs role models and in particular managers who act as role models by using the system themselves and are pushing employees to also use the system. Interviewee U10 highlighted that “*We need support from management teams and from department managers [...]*” and that these people are always pushing and encouraging people to use the system and setting rules that “*this [system] is what we are using now*” (Interviewee U10). Interviewee I1 also saw this as something important and found the current situation a bit concerning since “[...] in the top of our organisation in Sweden, the ones who should be important ambassadors, have not really themselves started using the system [...]” even though these people are saying that they support the new system. “*We need ambassadors who are positive and who can be storytellers around the value creation*” (Interviewee I1). Interviewee I3 added on and stated that “*Of course there is a positive attitude from at least some higher-level managers, but not from all*”. In the process of reminding employees to conduct their training the authors observed that many top managers that are expected to act as role models did not respond and thus did not conduct their training. In one encounter with an employee the employee stated that his/her manager had told him/her not to prioritise to conduct the training and use the system but instead focus on sales.

4.2.8 Shut down and integration of legacy systems

The next actualisation variable that has been identified from the interviews is affecting the degree of parallel system usage which is imposed on the users. The parallel system usage has partially to do with the fact that the CRM system is not yet fully implemented in the whole organisation and interoperability and integration of legacy systems have not been established yet. Interviewee U1 said that *“there is a period now when those who are using the system perhaps experience that they are using many parallel systems”* and *“I believe it will be important that you don’t experience that you as a user have to go in and do double documentation in several different systems”*. Another part is that one system, which is purely a sales pipeline system, will be replaced by the new CRM-system but meanwhile, during the implementation, the sales pipeline system is still open because customer accounts along with users are stepwise being launched in the CRM-system. This causes issues since many users work with several clients which means that they will need to work in two systems in parallel depending on whether all their customers have been launched in the new CRM system or not.

4.2.9 Reaching a critical mass

Interviewee U10 describes the value of the system in the following way: *“The CRM-system is just a tool; it is the people behind it that still have to put in the information into it. Otherwise, it is quite useless”*. This opinion that the system does not serve a purpose without actively being used and fed with information was commonly brought up during the interviews. This leads up to the ninth actualisation variable, reaching a critical mass. This variable should be seen as where the organisation is in active users in relation to the critical mass. Interviewee U7 suggests that there is a critical mass which has not been reached but that must be reached before users can exploit the full value of the system. Reaching a critical mass is suggested by interviewees to get the system moving. This was identified by one implementation lead (interviewee I1) who said, *“I am satisfied with that we chose that approach first [using a pilot], but now we see that the critical mass must get into the system in order to generate some pressure on it”*.

From a global perspective, the Swedish implementation have implemented the system bit-by-bit, starting with the biggest client, and then scaling to other clients. Interviewee I4 thinks that *“The Sweden rollout is going to be very successful now that they're bringing on scale.”* So, the current situation is that *“[from a user point of view] I'm in CRM, but my colleagues aren't so I can't benefit fully from CRM yet”*. From this interviewees point of view the scale have been a missing link for the implementation. In other geographies, for instance in Norway, the approach was to implement all customers at once. Interviewee I4 refer to this approach as *“The Big Bang approach”* and although this approach has its challenges, for instance more workload for the implementation team, interviewee I4 have recognised that in terms of adoption, the Bing Bang approach seem to have been more effective. The interviewee thus suggests that in the geographies that have utilised the Big Bang approach, users have adopted the system more quickly.

Internal reports from company α indicates that far from all users who have received their license have become active in the system in terms of entering or modifying information. The reports showed that the company α have issued approximately 300 CRM-licences which of 216 were edit licenses. However, merely 13 percent of the employees with full user rights have entered information or modified records in the system. The usage analysis does not account for if an employee has been active in terms of only viewing the available information in the system.

4.2.10 Collective action problem

Interviewee U7 stated that: *“I think there is a tipping point when enough users are in the system. Right now, there have only been a few users [...] But when the reality is that the big mass is in the system, I think that will be the driving force for me”*. If all employees used the same logic as interviewee U7 in waiting for others to join the system before they start using the system themselves, it could lead to a waiting game situation, which empirical data seems to suggest. Users are waiting for each other to start using the system and hesitate to be the first ones to use the system. Interviewee I2 has also identified this issue. *“As I say, we are all interested to take part of what others have done and then it is important that we also say, ‘if you want to know what others are doing, then you also have to contribute’ so that we help each other”*. To get to the critical mass can thus be considered a catch 22 situation, where the collective action problem is an explanation. The reason is that a user will not experience the full value of the system until other users are actively using the system which creates a dilemma when people don't see the point of contributing information to the system unless others are doing the same. In other words, people don't want to use the system if they don't get value out of it, and they will not get value out of it if they, and others, don't actively feed the system with information.

4.2.11 Support and communication

The next actualisation variable that has been identified is support and communication. Here we refer to support in the context of technical use of the system, and communication in the context of information regarding the plan and timeline for the implementation of the CRM-system. This variable has been identified because several interviewees have highlighted its importance for the implementation of the new CRM system.

The availability of support is something that interviewees among the users, in general, have a positive opinion about. Many highlighted that the possibility to get support in form of written information and live sessions with experts has worked well. For example, interviewee U2 stated that they have had the opportunity to attend *“[...] weekly check-ins with CRM support teams that are very hands-on and where you can get help with your issues [...]”* and interviewee U11 said that *“[...] the support has been really good [...]”*. However, one issue that has been mentioned by some interviewees is that they *“[...] miss a Swedish support group [...]”* (Interviewee U5), since a lot of the available support is run by the global CRM-team and is delivered in English and is not always adapted to how things are conducted in the Swedish organisation. This language barrier has been recognised by the implementation side,

interviewee I4 simply concluded: *“Although English is our is our corporate language, they still want to learn in their native language”*.

The authors themselves have observed effects from support. The authors have assisted several teams and individuals in demonstrating different functions of the CRM-system such as customised dashboards which creates overviews for the users. These dashboards are in fact false overviews in the current situation since a lot of information is missing in the system and much information is not updated, which gives a false reflection of the reality. However, it demonstrates to people what value they could get out of the system and why they need to feed the system with information. When performing these demonstrations, the authors have observed a slight change in attitude among the participants toward the system.

The communication is something that some interviewees have highlighted as a bit flawed in the sense that they along with their colleagues have not really known what is going on, which people are going to get licenses, and when should they start using the system. Interviewee U10 concluded *“We have more or less been waiting. And the directives internally were so different. What is the plan? Who should use it [the system]? [...]”*. Interviewee U11 had a similar perception and stated that *“We have been waiting a bit [to begin using the CRM system] because nobody has told us to stop using the old system [a sales pipeline system] and our other stuff, so then we feel that we don’t want to put in the effort doing everything [...]”*.

4.2.12 Way of working

The last actualisation variable identified from the interviews is labelled as way of working. From the interviews there seem to be a lack of an established way of working, including clear directives and division of responsibilities i.e., what responsibility does each person have in the system. Interviewee U1 said that *“We need to find a way of working; I know that there have been some questions about for example ‘should we enter everything in the system?’ There exists unfamiliarity in documenting, so finding a way of working that has a good balance of sharing information but also a clarity in what not to share like confidential information or business critical information that the customer don’t want to share with anybody. So, setting a way of working that everyone knows”*. Not establishing a way of working have according to interviewee I2 been a problem in earlier implementations, the interviewee explained that some years ago another CRM-system was to be implemented in company α but it failed due to: *“We [company α] were bad at establishing a way of working with the system, personally I worked with the system, but others did not, so it lost value for me.”* Thus, interviewee I2 conclude that it is important to create a way of working that puts the system in focus, and that it is clear for employees how the system is to be used in order to generate value. The authors have also observed the establishment of a way of working as a high priority for managers. While participating in meetings with managers where they discuss how they and their teams can get started with the CRM-system, the authors understood that managers find it essential to set structures which can support their teams. Employees rely on their managers to set expectations and provide guidance in this new environment of the CRM-system, however, it became

apparent that it is also difficult for managers themselves to comprehend what to communicate to their teams since the CRM-system is new to the managers as well.

5. Discussion

The discussion is divided into three sections, the first section discusses and answers the first research question related to the affordances perceived by the implementation team and the users. The second and third section aim to answer the second research question regarding how the actualisation variables identified in the empirical data influence the realisation of the CRM-system affordances by discussing each variable's effect, and the interrelation between variables.

5.1 Affordance Classification

The empirical findings in this thesis conclude that the affordances that are perceived by the implementers and users are understood in a similar way, which suggests that these affordances can be regarded as canonical (Ostern & Rosemann, 2021). This should not be confused with that all affordances of a CRM-system are canonical as perceived affordances by company α does not necessarily equal all existing affordances, as some affordances can be hidden (Gaver, 1991). Although Gaver (1991) acknowledges that there can exist false affordances, the affordances identified from the empirical data are considered as perceptible affordances and thus "true" affordances (Gaver, 1991).

While some overlap in perceived affordances were expected, the strikingly high similarity in perceived affordances between the implementers and users is very unexpected for two reasons. Firstly, as stated previously perception is highly subjective (Ortman & Kuhn, 2010; Pozzi et al., 2014) and thus the authors expected more discrepancy in the answers. Secondly, one would expect that the implementers would identify more affordances since they should have more information about the CRM-system and its potentials and thus be more likely to perceive affordances (Anderson & Robey, 2017; Gaver, 1991; Pozzi et al., 2014). Ostern & Rosemann, (2021) also suggest that technologies that are complex or modular in its structure, which a CRM-system can be regarded to be, should lead to individuals having their own perception of what affordances that a CRM-system could bring.

Other research fields also indicates that there can be a mismatch between the users and the implementers. For instance, Parasuraman et al., (1985) saw that a gap can arise between what a provider expects that a customer wants and what the customer "actually" wants, something that can be a challenge for the organisation when trying to deliver customer value (Woodruff, 1997). In this case the implementers can be regarded as providers and the users are internal customers, as every division themselves decides how many licenses to purchase. A potential explanation to why the two groups of interviewees identified similar affordances can be that the CRM-system concept is either so well established that users have an understanding of how it works or that the system is very intuitive upon usage which gives users a clear view of what it can accomplish.

Another finding is that the perceived affordances by the implementers and the users seem to follow an affordance trajectory (Thapa & Sein, 2018). As mentioned, affordances can be divided into different levels if they are composite (Ostern & Rosemann, 2021) where the higher-level affordances are, to a certain degree, dependent on the actualisation of previous levels to unlock the possibility of actualisation. With this logic in mind, three different levels of affordances were identified from the empirical data. The first level, *single entry and access point*, which can be regarded as a basic level affordance (Ostern & Rosemann, 2021), lays the foundation for the higher-level affordance of *aggregated view*, which therefore is seen as the second level, which in turn is a prerequisite for the actualisation of the affordances of *data driven actions* and *cross-collaboration* which are seen as the third level of affordances. The levels are displayed in figure 7.

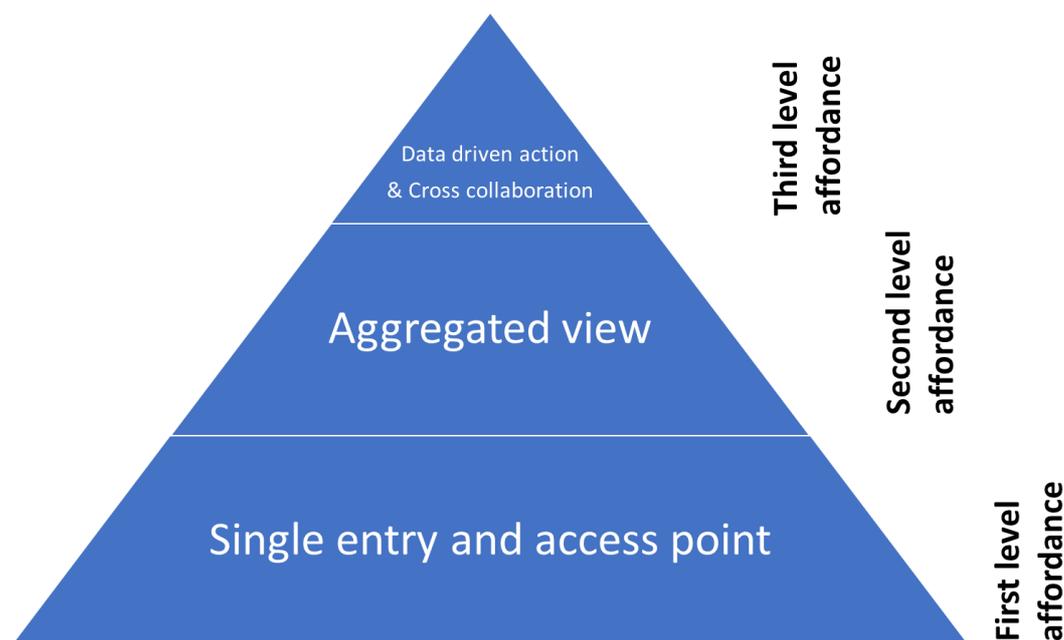


Figure 7. Affordance hierarchy in the CRM-implementation

In addition, findings from the empirical data show that for one individual to reach the higher-level affordances of *aggregated view*, *data driven action*, and *cross-collaboration*, the individual is dependent on a wide usage of other individuals in the system. A wide usage is thus ultimately about getting enough users to actualise the first level affordance of *Single entry and access point*. This suggests that to actualise the higher-level affordances, reaching a critical mass (Rogers, 2003; Øverby & Audestad, 2021) of active users who have actualised the first level affordance is necessary. These findings are interesting since they indicate that company α have not fully considered the dependencies when choosing the strategy of a stepwise implementation. The reason is that the stepwise implementation has only allowed a limited number of employees to be introduced to the CRM-system simultaneously which thus complicates the possibility for the employees to reach a critical mass and extract most value from the system.

The authors appreciate that many of the identified affordances can be considered both operational and analytical (Foss et al., 2008). For example, marketing, which falls under *data driven actions* is analytical in the sense of the directed messages that can be sent based on customer insights, but it can also increase operational efficiencies as the CRM-system allows marketing campaigns to be sent out with a single click. However, the interviewees in general, and the user group in particular, mainly has an analytical perspective of the CRM-system and do not put much emphasis on the potential to increase operational efficiencies and thus decrease workload. On the contrary, users are rather concerned that the CRM-system will increase the workload via more administrative work. This suggest that not enough effort has been put in to communicating the operational benefits that a CRM-system could offer the users. Another explanation could be that the implementers themselves are not fully informed about the operational efficiencies, thus the operational efficiencies could be regarded as hidden affordances (Gaver, 1991) for company α .

5.2 Affordance actualisation variables discussion

Although employees at company α perceive the same four affordances, one must have in mind that a perceived affordance does not equal that an affordance gets actualised (Pozzi et al., 2014). During the implementation, it has become obvious that the organisations have some problems in realising the true benefits of the CRM-system in practice.

Considering the hierarchy of affordances presented in the previous section, the discussion in this section will mainly cover how the identified variables influence the realisation of the first level affordance of *Single entry and access point*, as an organisational wide actualisation of this affordance is a prerequisite for reaching the higher-level affordances. Therefore, the realisation of the first level affordance is of most interest and importance for the realisation of all CRM-system affordances.

5.2.1 Technology configuration and features variable

As mentioned in the results chapter there is a mixed perception about the CRM-system when it comes to for instance how easy it is to use the system. If users experience that they lack a feature in the system, it could affect the user's willingness to adopt the system. At the same time if a user experience that they are satisfied with the features it could have a positive impact on the willingness to adopt. One concrete example from the interviews of a feature that some employees miss was the possibility to hide confidential information from other users within the system, which potentially could result in the users using other software instead (e.g., Excel-spreadsheets) to store their information. Therefore, this could affect the willingness to adopt the system as users would still have to use two different systems. Another example from the observations is the mismatch in terminology between the system and the terminology applied in daily business which can make it more difficult to start using the system. Relating this to the confirmation step of the innovation-decision process (Rogers, 2003) an unforeseen revelation (in this case the missing option to hide confidential information or the misalignment in

terminology) can make the adopter change their mind and reject the technology before it is fully adopted.

Since the variable *Technology configurations and features* are related to the functionality of the CRM-system as well as the ease of use it will also influence the variables *Attitude* and *Degree of effort*. The presence or absence of desired features will affect users' attitudes toward the system, and the intuitiveness of the system that can be offered by the user interface and the UX-design affects the ease of use and thus the degree of effort required by the users to utilise the CRM-system.

5.2.2 Attitude variable

The attitude among employees plays a crucial role in the realisation of the CRM-system affordances. The system fatigue can arguably be described as having a negative effect on the user's decision to actualise a new system. Pozzi et al., (2014) describe this through the variable labelled *Willingness to change behaviour*, and the Technology acceptance-model also emphasises that the attitude of the actor interacting with new technology is very important if it is to be accepted or not (Mathieson, 1991). Another aspect identified from the empirical data was that some employees did not want to share their information with others, thus they are likely to be resistant to actualise the affordance of *Single entry and access point*.

Some employees also have the attitude that other employees will not use the system so why should they use it. Furthermore, the authors observed a difficulty for individuals to take matters into own hands instead of waiting for others to take the first step. Therefore, arguably the *attitude* variable influences the *collective action problem* variable since if they do not start using the system themselves, they will be a part of the *collective action problem*. The attitude in general also affect the *reaching of a critical mass*, because if users do not intend to start using the system, for example because users experience system fatigue or that they have the attitude that the CRM-system is bad in general, they will not contribute in reaching the critical mass.

5.2.3 The degree of effort variable

Some interviewees experience that the implementation has already resulted in an increased workload initially while other interviewees anticipate that it will result in a higher workload. The authors also received a lot of negative feedback on the length of the CRM-system training when requesting employees to conduct training. If the workload is (or is expected to be) too high, it can result in a lower adoption rate. The low participation rate in the internal training could suggest that this is the case for many employees at company α . Ulaga (2003) described customer value as the trade-off between what one receives and what one give. In this sense if the users expect that they will have to give more than they receive they will probably not utilise the system as they believe it will lead to a net loss in value.

The *degree of effort* variable influences the previously discussed *Attitude* variable. The reason being that a high degree of effort will have a negative effect on users' attitude, for instance if the training is experienced as too long it affect users' attitude towards the system. At the same time, if adopting the system is associated with low effort it should have a positive effect on the attitude of employees.

5.2.4 Synchronisation of implementation variable

The next variable to discuss is the *Synchronisation of implementation*. The organisational structure of company α seems to have affected the synchronisation of the implementation, having a negative effect on both employee's ability and willingness to adopt the CRM-system. The large time gap between when users were introduced and trained in using the system and when they are supposed to start using the system seems to have affected the momentum of the implementation in a negative way. This suggests that a synchronised training and implementation between divisions working closely with each other during a small window of time could have a positive effect on this momentum. This can also influence the variable *degree of effort* as the synchronisation between divisions working close together lowers the amount of work in parallel systems. Something users must do if one division is implemented in the CRM-system before the other.

As observed, the Swedish organisation has had a stepwise approach in onboarding employees to the CRM-system. Although onboarding provides users with licenses and access to the system it does not assure a high degree of adoption and active users of the system. For example, as stated in the results chapter, the Swedish organisation has issued about 216 licenses with full user rights to different employees but only 13 percent of these users have been active in terms of feeding information to the system. Or in other terms, only 13 percent have started to actualise the first level affordance. Thus, the critical mass that is required to get a rapid growth in users and value of the system is not guaranteed simply because the system is accessible (Øverby & Audestad, 2021). However, providing employees with access to the CRM-system is undoubtedly an essential condition to allow employees to perceive the characteristics of the technology and continue the innovation-decision process (Rogers, 2003). If employees are not provided access to the system, they will also not be able to reach the second level of customer value as they cannot use the CRM-system in a real situation (Woodruff, 1997), and their ability to adopt becomes non-existent. Since the synchronisation influences the number of users getting access to the CRM-system it will ultimately have a direct effect on the variable *Reaching a critical mass*.

From the perspective of reaching a critical mass in a short period of time and mitigating the risk of stagnating and reversing the growth curve of the value network, it appears to be beneficial to maintain a high pace in the onboarding of employees (Øverby & Audestad, 2021). However, a fast pace in the implementation can also, as highlighted by interviewee I4, put much strain on the employees and the implementation team of the organisation whose effects on the actualisation and adoption of the CRM-system are difficult to predict.

Analysing the individual benefit from a value network point of view one can see that if only a few numbers of people are using the CRM-system, the effort of using the system is not outweighed by the benefits of using the system (e.g., via system fatigue, degree of effort). This means that there are no first mover advantages for users in these kinds of systems (like a CRM-system), instead the individual benefits start to rise as the number of participants in the value network increases (Øverby & Audestad, 2021). This is seen in figure 8.

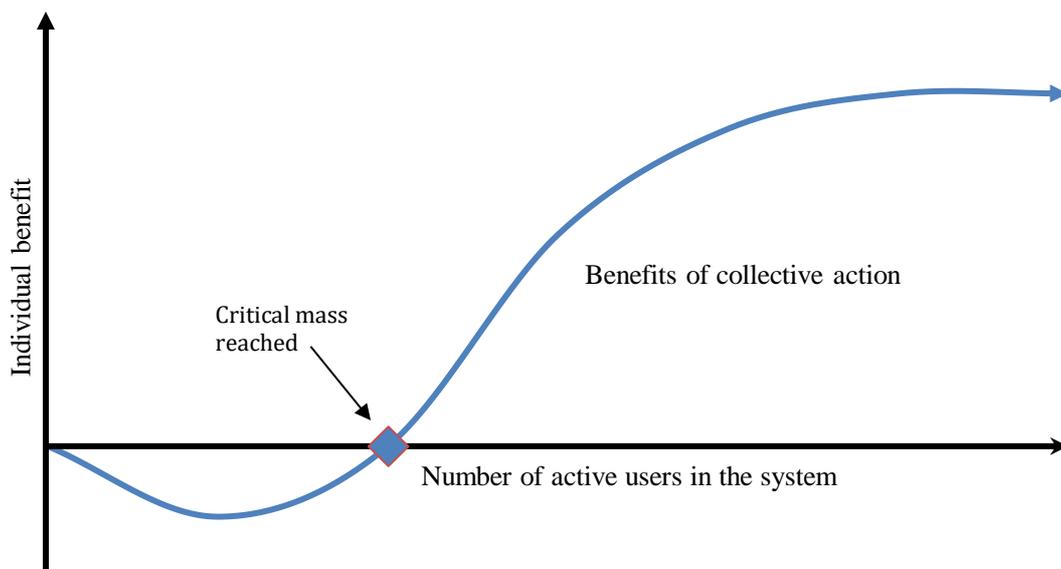


Figure 8. Illustrative graph of how the individual benefit increase as the number of active users in the system increases

By applying this logic to the current implementation, an unsynchronized approach can lead to a scenario where the individual benefit never gets positive, as the numbers of participants increase too slowly. A different way of viewing it is that the relative advantage of the new CRM system in comparison to previous work practices is not evident enough for the individual (Rogers, 2003). The negative first mover advantages can thus lead to a churn of these users as they do not see the value of the system, making it even more difficult to reach the critical mass. In a synchronised approach, the larger number of users implemented simultaneously could create a scenario with less negative first mover advantages as the number of users of the CRM-system increases rapidly. In figure 8, the intersection between the benefits of collective action curve and the x-axis is the critical mass that must be reached to generate strong positive network effects (Rogers, 2003; Øverby & Audestad, 2021).

5.2.5 Actors' ultimate goal variable

Actualisation of affordances has been described as goal-oriented in the sense that they are actualised to support an actor's goal (Strong et al., 2014). Thus, actualisations of affordances are more likely to happen if the expected outcomes are in line with the actor's goal. However,

in an organisation wide system implementation, as in the case with the CRM-system, it would be incorrect to take for granted that the goals of top management are aligned with the goals of every individual in the organisation. Interviewees experienced a lack of specific communication regarding “*What’s in it for me?*”, which can be assumed problematic from an affordance theory perspective in terms of the actualisation process since it makes it more difficult for individuals to draw the connection between the actualisation and its support of the individual's goals. Obtaining an answer to the above-mentioned question is also important from an innovation adoption perspective to support an individual in the decision whether to adopt or reject the innovation (Rogers, 2003). In addition, the authors observed a widespread lack of priority among employees to conduct training which could suggest that people do not see personal gains in starting to use the CRM-system, which again can be related to the question “*What’s in it for me?*”.

The variable *Actors’ ultimate goal* will affect the *Attitude* variable since the users’ perception of whether the functions and opportunities of the CRM-system is valuable or not in terms of fulfilling personal goals will affect the user’s attitude towards using the CRM-system.

5.2.6 Organisational level of skill or knowledge variable

Findings from empirical data show that employees consider the organisation to be digitally mature and overall ready to use the new CRM system from a technical point of view. This has a positive effect on the users' ability to actualise the affordances provided by the CRM-system. But the other dimension, having an established sales mindset, is not as widespread in the organisation. The low maturity when it comes to selling, and in that using the logic provided by CRM, could have a harmful effect on users when actualising some of the higher-level affordances, for instance, *aggregated view* and *data driven actions*. Meaning, that although users see these possibilities from a technical point of view (e.g., how to find where the information should be stored), the affordance might not be actualised since users do not know what to put into the system. This could lead to different scenarios, one being that no information is put into the system as users do not know what to put in. Another scenario could be that the company reaches a state of garbage in, garbage out, perhaps even harming their work with customers rather than benefiting. By enhancing the organisational knowledge of CRM, company α could find themselves in a situation where technical know-how and the sales mindset align which would be very beneficial from an actualisation point of view.

How well prepared the organisation is as a whole will influence the *degree of effort*. If the organisation is well educated and for instance, are digitally mature or have a CRM culture, it will lower the degree of effort that each employee will have when learning about the new process or technology.

5.2.7 Role modelling variable

The fact that sponsorship from management, in the form of using and expecting employees to use the system, is limited is not positive for the user’s decision to adopt the CRM-system. This

is widely known in implementation literature as commitment and support from management and is seen as a crucial factor for a successful implementation or change, for instance Kotter (1997) describe this as creating the guiding coalition. It is important for management on all levels to commit to the system, and managers who work closely with users could have a positive effect to persuade users to start using the system. Rogers (2003) saw that interpersonal communication peer-to-peer has a positive effect on technology adoption, thus managers can be used as ambassadors in this implementation. By using the system themselves they can create credibility towards the other employees, by doing this, managers have the potential to affect users' *attitude* toward the CRM-system through demonstration and communication of the systems value.

Management can also be used to put pressure on employees to start using the system, this can be achieved through, for instance, that employees are expected to present their pipelines in the CRM-system on weekly meetings. If managers take on this more authoritarian role to “force” employees to use the system, it also has a potential to directly affect the progress towards reaching a critical mass in the CRM-system. In this sense management can be used both as a carrot and whip for employees to start using the system, thereby influencing the variable *reaching the critical mass*.

5.2.8 Collective action problem variable

The general feeling in the interviews is that not enough people are currently using the system to generate the value expected from the system. At the same time employees seem to be waiting for others before starting to use the system themselves. This results in that company α has a problem reaching the critical mass of the system (Rogers, 2003; Øverby & Audestad, 2021), and the effect is that the user's incentive to adopt the CRM-system is reduced. This can be described as a collective action problem. Meaning that although the system would be of most benefit to the organisation if employees collaborated and put their information into the system, this did not seem to be the case yet. Perhaps because of the fear of putting in effort without getting anything in return from other employees. This potential free-rider problem is explained in figure 9 below.

	Contribute with information	Free-ride
Contribute with information	c, c	$-l, d$
Free-ride	$d, -l$	$0, 0$

Figure 9. The figure describes a game between two players who can either choose to contribute with information or free ride. In this situation $d > c > 0 > -l$, and they represent individual value. the fear of others freeriding will create a Pareto-maximum in the fourth quadrant (0,0)

The fear of others free riding (which would lead to a net loss in value for people putting in information) makes actors wait out other actors. The equilibrium will emerge in the 0,0 quadrant, and in this situation, a player cannot change their strategy (by themselves) without themselves losing. The anticipation that others will not contribute is thus affecting the actors themselves. Strong et al., (2014) saw that even before starting the actualisation process of an affordance, actors can start to reason about the required actions and anticipated outcomes, something that seems to be present at this stage of the implementation. This was even seen in the workshop with employees that were not yet users who had a fear that other users would not use the system.

5.2.9 Shut down and integration of legacy systems variable

While the CRM-system is supposed to offer users one single system where employees can enter and access customer information, one of the current issues in the implementation is that older systems have not been shut down since the whole organisation has not yet been introduced and integration with other legacy systems has not been established. Although this issue will be resolved in the future it risks having a negative effect on the current licensed employees as using the system increases the workload rather than reduces it. Employees are aware that all system changes come with a transition period and are thus forgiving to a certain degree, but if the transition period is too protracted the organisation risks losing the commitment of these employees.

5.2.10 Support and Communication variable

Support and communication can have an important effect on individuals' ability to adopt a technology (Rogers, 2003). Support can facilitate the cognitive process of individuals and thus help individuals to increase their own ability to use and understand the CRM-system and reduce the perceived complexity of the technology (Rogers, 2003). In this sense, the support team can help to make the system perceived as easier to use, thereby making the technology easier to accept for employees (Davis, 1989). Furthermore, the authors also observed that by supporting in creating e.g. dashboards and demonstrating what is possible to achieve it created incentive for updating and feeding the system with information. The support offered by company α was mainly brought up as positive by the interviewees aside from that support has mainly been offered in English and not in Swedish which can be a barrier for some of the employees. The degree of support that users take part of will enhance their knowledge and thus affects the *organisational level of skills or knowledge*. Therefore, by offering relevant and good support company α may lay the foundation for enhancing the knowledge within the organisation.

Communication, however, was judged as flawed by interviewees due to lack of clarity. Communication is important for technology adoption as it can be used as a tool for reducing uncertainty that individuals experience in relation to the technology (Rogers, 2003). Support and clear communication can also lead to a lower effort, as users do not need to search too long for solutions to their problems. Therefore, by creating a clear communication channel for support, the *degree of effort* variable will be affected.

5.2.11 Way of working variable

Employees have a hard time understanding the way of working with the system, and it was observed that managers find it difficult themselves to set up new routines to communicate to their teams. This variable is to some extent related to a lack of communication from the implementers side as users (managers and employees alike) are confused regarding what they are expected to put into the system and not, and how to work "in the right way" meaning that valuable information is put into the system in a systematic way. Establishing a clear way of working, will support the actualisation of the perceived affordances as it maps out each user's role and purpose in the system. This means that if company α has a clear way of working that user follow, it can influence the *reaching of a critical mass* variable directly. At the same time if the process is unclear, it might create a system where it is difficult to navigate in the data or that not all data is available, as for instance if other systems are being used in parallel.

5.2.12 Reaching a critical mass variable

As presented in section 5.1 the reaching of a critical mass plays a crucial role in the actualisation of the higher-level affordances, in other words when the critical mass of users that has realised the first level affordance is reached, enough data have been collected in the system for employees to start realising the other affordances. But the variable is also important for a wider realisation of the first level affordance, because of positive network effects (Rogers, 2003; Øverby & Audestad, 2021). Meaning that the value of the system has reached a threshold

which increasingly stimulates other users to start using the system. Rogers (2003) describe this in the terms of that the technology adoption becomes self-sustaining.

To understand if network effects are in play and how they affect the adoption when implementing a new system could help implementers in choosing their implementation strategy to use the network effects to their advantage. The other variables discussed therefore, either directly or indirectly influence the ease of generating positive network effects through their effect on the *reaching a critical mass* variable.

5.3 Interrelation between variables

As already identified in the previous section, variables can influence each other in either a positive or a negative way. This is showcased in figure 10. One conclusion is that all variables directly or indirectly affect the *reaching a critical mass* variable, and reaching a critical mass is crucial for realising the higher-level affordances previously presented. In other words, reaching a critical mass is ultimately about getting enough users to actualise the first level affordance of *Single entry and access point*.

Some of the variables can be directly influenced by the implementation team, while other variables can be affected indirectly. For instance, the variable *Shut down and integration of legacy systems* can be influenced by the implementation team by for instance speeding up the shut-down and planned integrations of legacy systems so that a lower parallel system usage can be achieved. Two of the variables, *Way of working* and *Synchronisation of the implementation*, that implementers can affect directly are interesting to examine as they have a direct influence on the variable *reaching a critical mass*. These variables are therefore low hanging fruits if the implementation team want to influence the *reaching of a critical mass*.

Two very central variables in this network of variables are the *degree of effort* and *attitude* and how they relate to each other in influencing the *reaching the critical mass* variable. *The degree of effort* directly influences the *attitude* variable. Similarities can be seen in the technology acceptance model (Davis, 1989; Mathieson, 1991) in that both ease of use and actors' attitudes influence if actors will accept the technology or not.

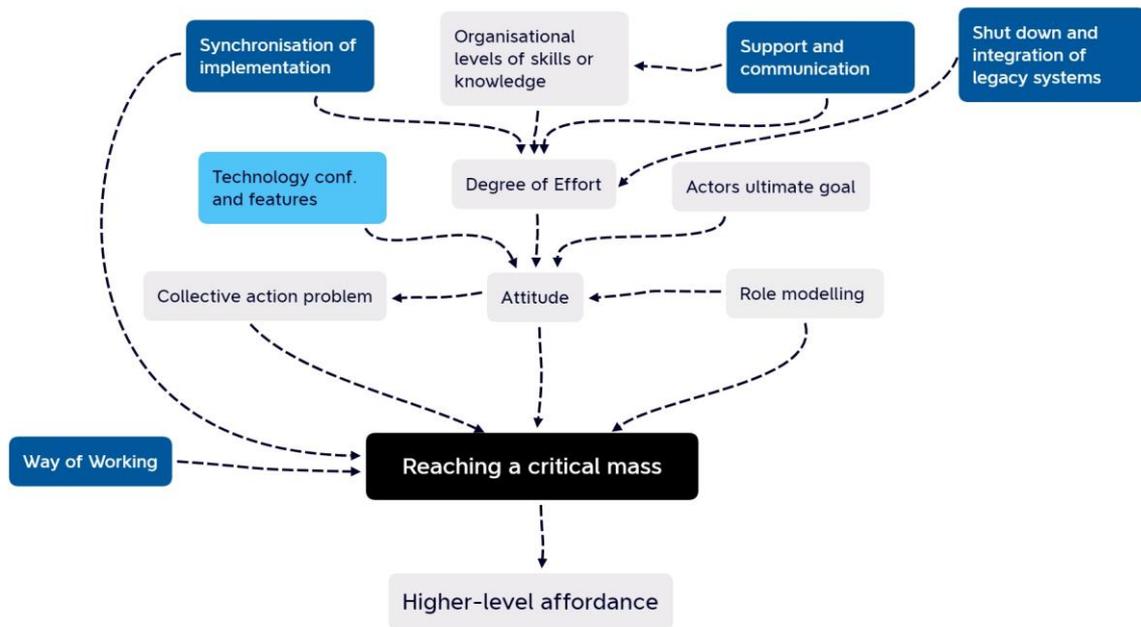


Figure 10. Summary of how the different variables influence each other in the case of the CRM-implementation at company α

The variables marked in blue are variables which the implementation team can influence directly. The variable *Technology configuration and features* can only be influenced to some degree since the CRM-system software is licensed from an external developer and are therefore marked with a lighter blue colour.

6. Conclusion

The aim of this research was twofold, firstly to examine how the perception of potentials of new enterprise systems are portrayed by users of the system and the implementation team and compare these two perspectives. Secondly, how users of enterprise systems realise advanced ES potentials. This was done by investigating one company (α) who are struggling to implement a new CRM-system. Affordance theory and other literature was used as a foundation. To fulfil the aim of the research an attempt to answer the following two research questions was made:

1. *How do perceived CRM-system affordances of implementers compare to users' perceived affordances?*
2. *How do affordance actualisation variables influence users' realisation of CRM-system affordances?*

One unexpected finding is that the same set of perceived affordances was identified by both the users and the implementation team in a similar way. The preconception was that the opposite result would be identified and that there would be differences since affordances can be regarded as subjective, and the implementation team were expected to possess more information about the system. The investigation of the implementation team and users' perceived affordances shows four identified affordances, namely, *Single entry and access point*, *aggregated view*, *data-driven action*, and *cross-collaboration*.

This thesis shows that the identified CRM-system affordances can be divided on different levels based on their dependency on the actualisation of other affordances. On the lowest level, *Single entry and access point* is identified which is a prerequisite for an *aggregated view*. *Data driven action* and *cross-collaboration* are identified as higher-level affordances as they are dependent on the actualisation of the *aggregated view* affordance. The identified affordance hierarchy leads to the conclusion that the realisation of the CRM-system affordances is a stepwise process where a critical mass of users that have actualised the first level affordance has to be reached before unlocking other affordances.

Although the implementation team and users are aligned when it comes to what potentials the new CRM-system could present to them there still seems to exist conditions blocking them from realising these affordances. This study identifies 12 different variables that either hinder or stimulate the actualisation of the CRM-system affordances. The result from this study supports previous research, presented by, for instance, Strong et al., (2014) and Pozzi et al., (2014) that there are sets of variables that affect the actualisation of affordances. Some of these previously established variables (for instance *technology configuration & features* and *organisational level of skill or knowledge*) are identified in this research among the 12 variables. This research shows that all actualisation variables affect the realisation of the first level affordance, and thereby the realisation of the higher-level affordances. During analysis, we found that some variables were easier to influence than others and reaching critical mass

was the most important. We propose a model that synthesises our findings and outlines how different variables impact the adoption process of CRM-systems that allows to unlock advanced potentials and provide value to organisations.

For theoretical contributions, this research contributes to ES literature by investigating an ongoing implementation and putting emphasise on the perspective of users. Also, we contribute to affordance theory literature by applying it to the specific case of customer relationship management systems and comparing the perspectives of implementers and users. Also, insights regarding how established actualisation variables manifest themselves in a case context are shown, and additional variables are suggested to expand current framework.

6.1 Managerial implications and Future Research

The evidence from this study suggests that even if there is an alignment in understanding the value of a new implementation there are still issues in realising these values. Different variables will stimulate and hinder the realisation of the values from the implementation. When conducting ES implementations managers could benefit from understanding dependencies between affordances, identifying which variables that are in play, how they are interrelated, and how they influence users in the actualisation of affordances. By having this understanding, companies can become more equipped to manage ES implementation projects and set up conditions to support users in actualising ES affordances.

The findings from our research can be refined and complemented by future research. Since organisations can have different affordances in relation to the same technology, future research should investigate CRM-implementations in other organisations. Our research could also be extended by investigating how the actualisation of affordances of other IT-artefacts with inherent network effects are affected by the variables presented in this thesis. A deeper investigation of the dependencies between the different actualisation variables would also be of interest. Since this thesis has studied an ongoing enterprise system implementation, future research could benefit from conducting longitudinal studies of CRM-system implementations from start to finish to gain deeper insight into the whole actualisation process of all affordances. Longitudinal studies could also shed light on potential hidden affordances which are revealed as a result of actualisation of other affordances.

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A

Appendix A

A.1 Interview template – Implementation team

Before the interview:

- Is it okay if we record and transcribe this interview?
- All records and everything will be anonymous and if you mention for instance, “names” or “companies” we will replace these words with an anonymous one E.g. company A.
- [when the recording starts] “*Once again, is it okay if we record and transcribe the.....*”

Interview Guideline

Questions	Notes
Q1. What is your role at the company and how long have you been working at the company?	
Q2. What is your role in the CRM implementation project? And for how long have you been part of the project?	
Q3. Can you describe the process of how the decision was made to implement a new CRM-system?	Where did the idea originate from? Why was this an interesting solution to implement? Customer driven/organisational driven? Personal interest/ organisational goals/interests?
Q4. How was the idea/system presented to you from higher levels in the organisation?	
Q5. What was your first reaction to this?	
Q7. How would you describe the CRM-system?	Do we get a technical or a functional description of the solution?

Q8. Why do you think that the organisation should implement this system?	What pains can we solve? Technical?
Q9. Have there been any previous or similar systems?	
Q10. What function do you expect the system will have for the users?	
Q11. What function do you expect the system will have for the organisation?	
Q12. What has been the reaction from local management so far?	How have you reacted on these comments (have you modified the offering as a whole)
Q13. Have you used their input in any way to tweak the system or implementation?	
Q14. Have you received different reactions/input from different organisational levels at the organisation?	
Q15. Who are the users according to you?	
Q16. Who in the organisation benefits the most from the new CRM-implementation? (If any)	
Q17. What is the challenge to implement a system like this at the organisation?	
Q.18 Have you seen any differences in the implementation between the different countries?	
Q19. have you seen any demand for a CRM-system from Sweden?	
Q.20 Have you been a part of any other implementations at the organisation? if yes are there any similarities/differences?	
Q21. What do you see as potential success factors for this implementation?	

After the interview:

- Please feel free to contact us if you want to add anything!
- Do you know anyone else that would be interesting to talk to regarding this project?

A.2 Interview template - Users

Before the interview:

- Is it okay if we record and transcribe this interview to make things efficient for us?
- All records and everything will be anonymous and if you mention for instance, “names” or “companies” we will replace these words with an anonymous one E.g. company A.
- [when the recording starts] “*Once again, is it okay if we record and transcribe the.....*”

Interview Guideline

Questions	Notes
Q1. What is your role at the company and for how long have you been working at the company?	
Q2. How long have you had access to the CRM system?	
Q3. How would you describe the CRM-system?	
Q4. What do you think about the decision from the company to implement this system?	
Q5. How do the new CRM-system differentiate from previous/other systems used?	
Q6 Do you have previous experience working in similar systems?	
Q7. Why is this system needed?	
Q8. What function do you expect the system will have for employees?	
Q9. What function do you expect the system will have for the organisation?	
Q10. How is the conversation about the CRM-system between interviewees?	
Q11. What do you see as potential success factors for this implementation?	

Q12. How do you experience the usage of the system?	
Q13. Have you run into any problems when using the system?	
Q14. How do you think the usage of the system will affect your daily work?	
Q15. Who do you see as different users of the system?	
Q16. What is your thoughts regarding the implementation?	
Q17. Are you using any other systems or methods besides the new CRM system to manage clients/opportunities?	
Q18. What challenges do you see with using the new system for you personally and for the organisation as a whole?	
Q19. What do you want to achieve with using a CRM-system? No matter which CRM-system?	
Q20. Have you received enough support during the implementation?	
Q21. Who or whom do you think benefits the most from this implementation?	
Q22. How can your organisation get better at working client centric?	

After the interview:

- Please feel free to contact us if you want to add anything!
- Do you know anyone else that would be interesting to talk to regarding this project?

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