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個案研究：“SaaS CRM 4 之導入”

The Adoption and Implementation of SaaS CRM: An Empirical Case
Study

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Acknowledgment



Before starting this project I had heard lots of stories about what it's like to write a master's thesis. They were all converging toward the same focal points, on how stressful, difficult, and annoying it is. Still, I also heard about the good side, about the sense of pride and achievement that comes after the completion of the whole paper. Now that I'm finishing the process, I understand what everyone was telling me. I did have those intense moments of reclusion where the only thing on my mind was "thesis", and I also have that sense of accomplishment.

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« Et pour finir, ces dernières lignes sont pour ma zébrille. Merci pour ta patience, pour ton support et pour ton amour. »

摘要



本研究旨在探討企業選擇導入 CRM SaaS 至系統實際執行間之因素，其中特別著眼於初始設計下的 CRM 及依符合實際使用需求下產生的 SaaS CRM 間之差異。過往的研究者皆將這兩個概念分開探討。然而目前 SaaS CRM 部分的市場正以兩位數的速度快速成長中，當前為數甚少且缺乏全面性的研究仍不足以深度探討此現象。為縮減此差距，本研究透過一間加拿大企業實際執行 CRM SaaS 系統啟用初期過程為案例進行深入研究。研究結果顯示 CRM 的核心理論始終成立，但在使用者如何提供 SaaS CRM 設計元素及與如何實際操作使用系統等變化因素下，會帶來新的影響因素。而本研究中亦將探討這些新的現象所代表的涵義。

關鍵字：CRM，SaaS，客戶關係管理，軟件即服務，多租戶應用程序



Abstract

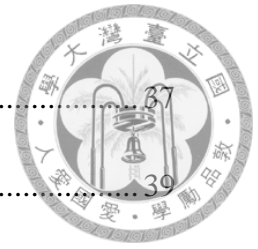
The aim of this study is to explore factors of SaaS CRM adoption and implementation, particularly the difference existing between traditional on-premise CRM and the on-demand SaaS CRM. Prior research investigated both concepts as two distinct notions. However, the SaaS CRM market segment keeps growing at close to a double digit rate and only a few studies have investigated this phenomenon. To fill the lacunae, the current research has conducted an empirical study to investigate this issue more seriously. The case study reports on the experience of a North American company during their SaaS CRM system implementation. Findings reveal that the core concept of CRM wasn't affected but new key elements emerged concerning how SaaS CRM is provided and consumed by the adopting firm. The implications are discussed further in this study.

Keywords: CRM, SaaS, Customer Relationship Management, Software as a Service, Multi-tenant Application



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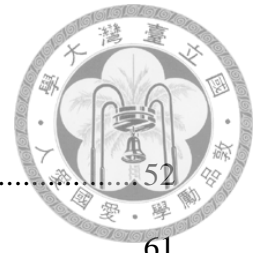
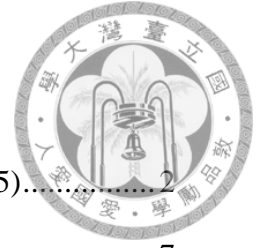


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Chapter 1 Introduction

In this chapter, we will introduce the historical background of CRM, its evolution and its implication for today's industry practice. Additionally, we will pose our research question and explain the structure of this study.

1.1 Motivations and Scope of the Research

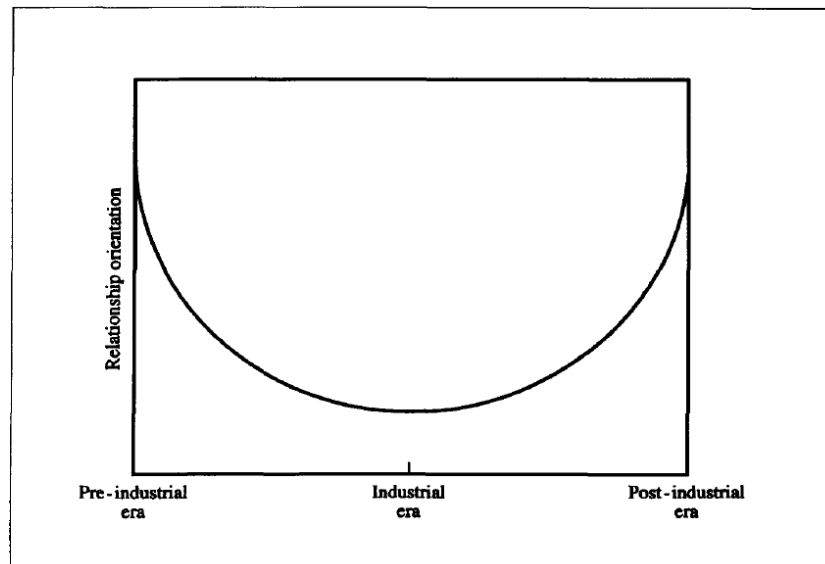
In the last three decades, development in information technology has had a huge impact on business processes and has become a fundamental part of the business world. Actually, it is considered one of the most important enablers of “business process change” (Eatock, Paul, & Serrano, 2001). In the mid-1990s, the evolution of information systems brought attention to a sub-branch of marketing management; Relationship Marketing (RM). Information system vendors started to offer solutions for managing sales and marketing departments; they were referring to it as “Customer Relationship Management” (Payne & Frow, 2005). It was an evolution of the Sales Force Automation (SFA) systems that were developed in the 1980s. But contrary to a SFA system, the CRM was not only focused on acquiring consumers, but also on the retention of those customers, and more importantly the development of their value life time customers.

Srinivasan and Moorman (2005) say that Relationship Marketing is a new-old concept that the idea of developing a positive relation with customers existed with the earliest merchants. The research of Sheth and Parvatiyar (1995) traces the history of Relationship Marketing. They state that during the industrial revolution the relationship part of the exchange process between a producer and a consumer was replaced by a

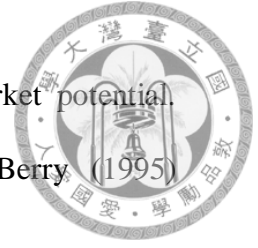


transactional approach that was more suitable to the mass production of goods and a larger number of transactions. This brought the appearance of the middle-man, which disconnected the relationship that existed between producers and consumers.

Figure 1 – Evolution of Relationship Orientation (Sheth & Parvatiyar, 1995)



These changes caused researchers and industrialists to question consumers' behaviour and psychology during the buying process. Around the 1930s marketing started to be thought of as a new branch of economics that focused on having a better understanding of consumers' behaviours and attitude. In the 1950s the Marketing Mix model was developed by Neil Borden and canonized somewhere around the early 1970s as the actual Four Ps Marketing Mix model (Grönroos, 1994). It has remained unchallenged as the main model in the marketing field. However, with the evolution of information technology, transactional information can be processed and summarized in such a way that humans can better understand the consumer profile. This allows firms to effectively communicate and cultivate a relationship with consumers at an affordable cost. Grönroos (1994) added as an example that a credit card company increased their customer retention rate by 5% which entailed a total value increase of 60% over 5 years.



Researchers and businessmen started to have more interest in this market potential. Earlier papers often talk about potentially amazing results. Like Berry (1995) summarizes:

“Reichheld and Sasser (1989) have demonstrated across a variety of service industries that profits climb steeply when a company successfully lowers its customer defection rate. Based on an analysis of more than 100 companies in two dozen industries, the researchers found that the firms could improve profits from 25 percent to 85 percent by reducing customer defections by just 5 percent.”
(p.237)

In answer to these new expectations, CRM systems were developed. However, past research shows that the implementation of such systems did not go well in most of the cases (Foss, Stone, & Ekinci, 2008; Meyer & Kolbe, 2005; O’Reilly & Paper, 2014). Their implementation can be costly and may turn out to be a total failure, even creating the reverse effect of what one wanted to achieve. Foss et al. (2008) talk about a few cases of the CRM causing a loss of customers. It is not the first time that implementation of an information system project has failed to deliver what was promised. CRM implementation is after all, just one variety of an information system project.

Thus, to diminishing the risk and costs associated with the implementation of a full scale system, service providers started to offer a new service model called Software as a Service (SaaS) or on-demand software. It was also referred as an Application Service Provider (ASP) in earlier literature. This new terminology is part of the Cloud trend that views information technology as a commodity. It can integrate all the different layers of technology {i.e. infrastructure as a service (IaaS), platform as a service (PaaS), and



Software as a Service (SaaS)}. The advantage of this new service model is that it reduces the development costs, the infrastructure investment and the maintenance investment that an information system needs (Dubey & Wagle, 2007).

1.2 Research Objective

The offer of CRM as Software as a Service has grown in popularity over the years; vendor like Salesforce.com have emerged as the new worldwide leader for CRM Revenue (Correia, Dharmasthira, & Pang, 2013). Big players like SAP, Oracle, Microsoft, and IBM, have also entered the market of SaaS solutions as it is one of the fastest growing sectors in the software industry (Melgarejo, 2012). The scalable attributes of the SaaS solutions allow smaller firms with lower budget to adapt to a historically costly system.

Even though the industry trend seems to be moving towards on-demand CRM, the current literature will explore the CRM system and SaaS as two separate concepts. This paper proposes to explore factors of CRM / SaaS adoption and implementation, particularly the differences that can exist between the on-premise traditional CRM and the on-demand SaaS CRM.

1.3 Structure of the Thesis

The remainder of the study is categorized into the following four sections: Section two consists of the literature review. Section three consists of the research methodology and the case description. Section four explains the results of the study. Section five provides a discussion of the results and their future implications.



Chapter 2 Literature review

The previous section presented the background of the problem. The following section will review existing literature related specifically to the SaaS CRM concept. It is separated into three sections: literature on traditional CRM, literature related to SaaS, and finally a summary section.

2.1 CRM

This section presents literature related to CRM. It is structured as follows: The first section will introduce CRM definitions and try to clarify their concepts. Thereafter, the next section will discuss the different classification models of CRM. Finally, the last section will be about the adoption and the implementation of CRM. It will examine the CRM value drivers and the main considerations of a CRM implementation project.

2.1.1 Definitions

Different definitions and aspects of CRM can be found in the existing literature, but no real consensus has been reached. Even in the past there was already confusion between the CRM and RM terms (Nevin, 1995). That confusion resulted from the original concept of relationship marketing which can be traced back to 1983 in the service industry literature (Berry, 1995). The rise in popularity of the CRM system, and the lack of definitions at that time, brings confusion on many industry deciders and practitioners that CRM was a technological solution for improving operation sales and marketing operation. Until nowadays, there are two main points of view on how to define a CRM, the strategic definition and the operational definition. (Richards & Jones, 2008)

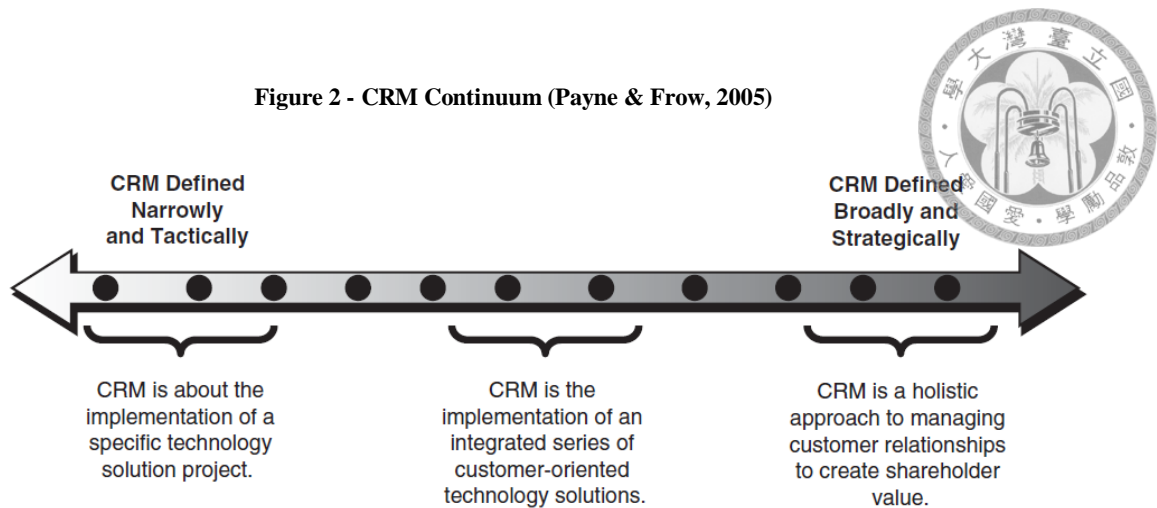


As previously stated, the strategic perspective on CRM comes from a group of researchers interested in its Relationship Marketing aspect, and see CRM as a holistic approach to marketing (Berry, 1995; Payne & Frow, 2005; Sheth & Parvatiyar, 1995). They suggest that in the marketing literature the term “Customer Relationship Management” and “Relationship Marketing” can be used interchangeably (Sheth, Parvatiyar, & Shainesh, 2001, pp. 3–21). Some authors (Grönroos, 1994; Kotler, 1991; Sheth & Parvatiyar, 1995) even talk about a genuine paradigm shift in marketing. They predict that the traditional marketing approach, the Four Ps model, will adapt to a more personalized approach. Gummesson (2004) states that relationship management should be considered in the corporate business plan, denoting the high strategic importance of CRM.

In opposition, researchers that base their definition on the operational perspective view CRM as a technological means of enhancing the original four Ps model of marketing. For example, Shaw (2005) only considers Relationship Marketing as a sub-branch of managerial marketing in his paper on schools of thought in marketing. Others, like Jain (2005) state that: “relationship marketing should be pursued in connection with the four marketing decisions: product, price, promotion, and place. Relationship marketing should be made an integral part of the 4Ps framework”.

Payne and Frow (2005) noticed this duality of definition and worked on a synthesized definition of a CRM. They listed several definitions and descriptions and regrouped them into three main views comprising a continuum of perspectives on CRM (see Figure 2).

Figure 2 - CRM Continuum (Payne & Frow, 2005)



As a result of their work they reach this definition (Payne & Frow, 2005):

“CRM is a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments. CRM unites the potential of relationship marketing strategies and IT to create profitable, long-term relationships with customers and other key stakeholders. CRM provides enhanced opportunities to use data and information to both understand customers and co-create value with them. This requires a cross-functional integration of processes, people, operations, and marketing capabilities that is enabled through information, technology, and applications.” (p.168)

That being said, the definition of Jobber and Lancaster (2009) is more practical. It summarizes well the other position of viewing CRM like a technological solution.

It is stated as:

“Customer relationship management (CRM) is a term for methodologies, technologies and e-commerce capabilities used by firms to manage customer relationships. In particular, CRM software packages aid the interaction between



customer and company, enabling the firm to coordinate all its communications so that the customer is presented with a unified message and image.” (p.200)

For the purpose of this paper, the author will adopt the perspective of Payne & Frow for defining the CRM as the author shares the view that a CRM is a holistic approach to marketing. This research considers the necessity of aligning information technology with business strategy. This point of view will also be reinforced in the next section.

2.1.2 Classification of CRM

CRM classification hasn't yet reached consensus between researchers either. The wide-based definition of CRM and its complexity makes it difficult to reach a complete discriminating model. But looking at the literature, there are a few tendencies that have emerged among many different points of view. This section will introduce two main models that a review of the literature has highlighted.

Operational, Analytical, and Collaborative Classification Model:

At an early stage, Karimi et al. (2001) introduced the Operational-Analytical-Collaborative model which was first developed by analyst firms as a classification model (Payne, 2006, p. 23; Trepper, 2000) .

It is defined as (Payne, 2006):

“Operational CRM – This is the area that is concerned with the automation of business processes involving front-office customer contact points. These areas include sales automation, marketing automation and customer service automation. Historically, operational CRM has been a major area of enterprise expenditure as



companies develop call centers or adopt sales force automation systems. CRM vendors focus on offering an increasingly wide range of operational CRM solutions.”(p.23)

*“**Analytical CRM** – This involves the capture, storage, organization, analysis, interpretation and use of data created from the operational side of the business. Integration of analytical CRM solutions with operational CRM solutions is an important consideration.” (p.23)*

*“**Collaborative CRM** – This involves the use of collaborative services and infrastructure to make interaction between a company and its multiple channels possible. This enables interaction between customers, the enterprise and its employees.” (p.23)*

This model was also explored by Adebajo (2003) who tried to classify CRM applications but reached the conclusion that even if this model did provide some discrimination, in practice such discrimination is limited, stating that: “most organisations and functions are likely to use more than one CRM application or, otherwise, use one application that has multiple capabilities” adding that, this model does not act as a singular basis for classifying CRM applications. Even through this objection, the Operational-Analytical-Collaborative classification model was broadly referred to (Gebert, Geib, Kolbe, & Brenner, 2003; Khodakarami & Chan, 2014; Xu & Walton, 2005).

Strategic, Operational, and Analytical Classification Model:

Buttle (2004) introduced a distinction between the strategic, analytical, and operational aspects of CRM. This model is based on the earlier Operational-Analytical-



Collaborative model but also includes the strategic factors that many researchers have suggested (Grönroos, 1994; Gummesson, 2004; Payne, 2006; Sheth et al., 2001). This distinction provide the basis of the framework developed by Tanner, John F et al. (2005).

They define each type as follows:

*“**Strategic CRM** refers to the managerial decision-making processes involved with defining and building a customer-oriented business strategy, business processes and culture, and requisite supporting technology models. At the core of the firm’s strategic CRM model, and its longer-term competitive advantage and success, is the ability to define and implement a right customer → right strategy → right organization → right channel → right people → right rewards success model. This strategic model encompasses a variety of intelligent and creative executive decisions, as captured at the center of the CRM framework.”* (p.169)

*“**Analytical CRM** refers to the firm-level processes involved in analyzing customer and market-level information in order to provide the intelligence and insights that guide the firm’s strategic marketing, CRM, service, and go-to-market choices. Fundamental processes include questions such as: Who are our most valuable customers? Which customers are most likely to respond to this marketing offer? and, What sales channels and effort levels should be used to access and interact with these customers.”* (p.169)

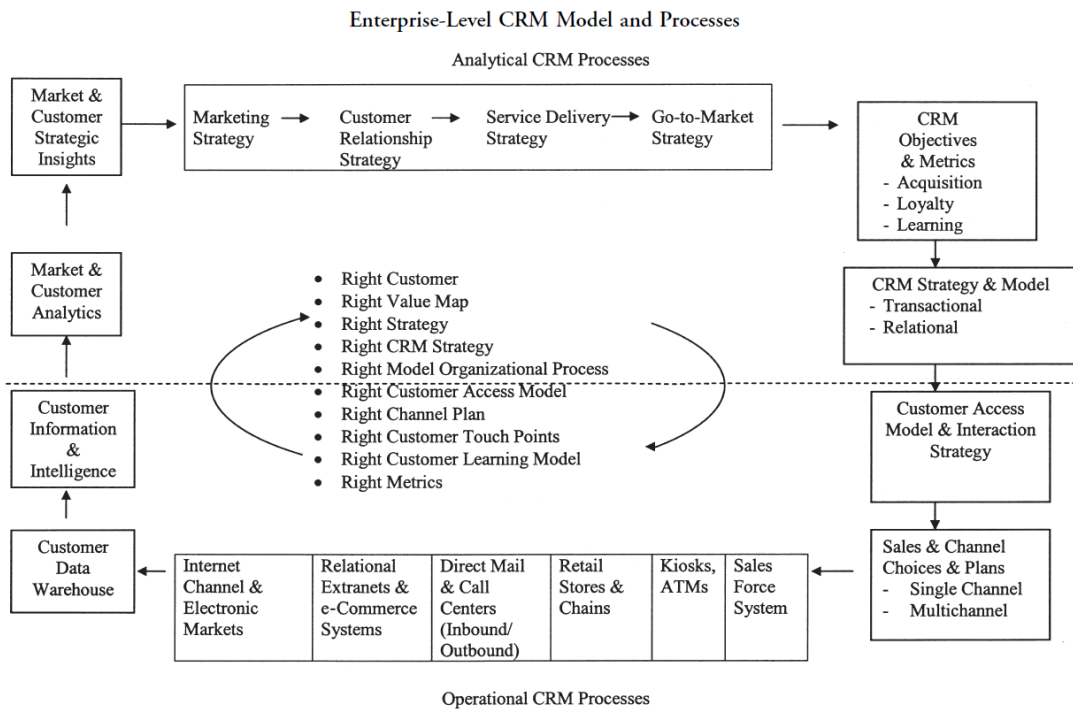
*“**Operational CRM** consists of the specification of suitable and replicable business processes designed to implement the firm’s desired customer relationship model in terms of customer access, customer interaction, sales and channel choices, and customer learning at the one-on-one level. At a technology level, operational CRM involves the automation of these customer-facing aspects*



of the business (Buttle, 2004), with emphasis on (1) marketing automation, in particular, campaign management, event based marketing, and promotional management; (2) sales force automation, in particular, lead management, opportunity management, customer contact management, and sales forecasting; and (3) service automation, such as inbound customer call center management, service call routing and prioritization, customer complaint handling, and customer self-service systems.” (p.170)

This model is represented in Figure 3 below.

Figure 3 - Enterprise-Level CRM Model and Processes (Tanner Jr, John F et al., 2005)



They explain that the strategy component of their model is captured in the middle as it encompasses a variety of intelligent and creative executive decisions that need to be reflected in the analytical and the operational components. Irana and Buttle (2007) further developed the Strategic-Operational- Analytical (SOA) model. They wanted to further validate the academic concept within the industry. Their results foster the



validity of the SOA model but need more development and empirical results to further prove the model's validity.

Other derivations of the two main points of view for categorizing CRM exist. For example Foss et al. (2008) simply kept the operational and analytical type. Another example is Richards and Jones (2008) who use strategic and operational aspects for classifying a CRM type, stating that the strategic factor in CRM implementation is crucial for successful implementation.

In conclusion, our literature reveals that there is no perfectly discriminating model of CRM. It appears that the customer strategy, the firm culture, and its environment will affect how a company will integrate a CRM system into its process (Tanner Jr, John F et al., 2005). This complexity makes any single classification system impossible to reach. This goes with Adebajo (2003) first observation that a CRM system will use more than one capacity or even that one firm will likely have more than one system. Therefore, as previously stated in the definitions section, the strategic component should be considered as an essential part of a CRM system, and the collaborative aspect can be considered intrinsic to information technology. The research will thus use the Strategic-Operational-Analytical framework for categorizing CRM.

2.1.3 CRM Adoption and Implementation

This section is divided in two parts. The first part concerns CRM adoption factors. More precisely, how managers perceived CRM benefit and how they can extract value from it. The second part is related to a CRM project's implementation, its key success factors and its failure factors.



Adoption factors:

As stated Reichheld, Sasser, and Earl's (1989) research on defecating customers had a huge impact on the business world. They showed how important customer knowledge and customer retention is for firm profits. In the following decade (1990s), when software companies promised systems that would allow managers to identify their most profitable customers, and target them with campaigns to increase both purchasing and loyalty. Many managers couldn't resist (Gillies, Rigby, & Reichheld, 2002). But, as we already know, many CRM systems failed to deliver their promises with failure rates estimated between 50%-75% (O'Reilly & Paper, 2014).

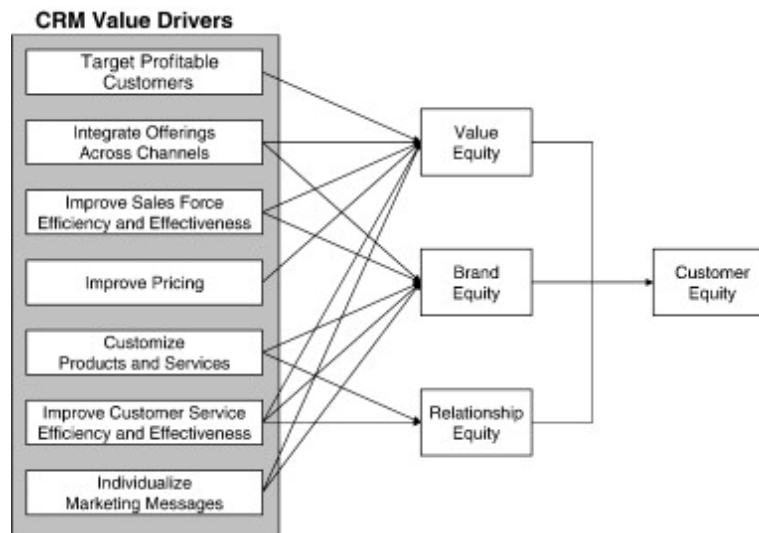
Thus, this section will look at the benefits of CRM adoption. Our literature review highlights two studies that were aiming in the same direction. The first one, Boulding et al. (2005) listed studies that show positive impact of CRM over firm performance but didn't do any further analysis. Richards and Jones (2008), created a model for value creation that was defined through an extensive literature review, which revealed seven core CRM benefits.

Looking more deeply into Richards and Jones (2008) model, they developed a conceptual framework of ten propositions that link CRM's most cited benefits to positive impact over customer equity (Figure 4). They constructed their model based on previous work on customer equity (CE), which they define as: "the discounted sum of each customer's Customer Lifetime Value (CLV) less any on-going investment required to maintain customer relationship", and CLV was defined as: "the net present value of a single customer's value".



So, they based their model construction on prior work concerned with customer equity that had already proven a positive impact over firm profits. They also used a previously developed model that linked three types of equity as antecedents to customer equity i.e. value equity, brand equity, and relationship equity, saying that each CRM value driver should have an impact over one of the equity types.

Figure 4 - Conceptual model relating CRM value drivers to customer equity (Richards & Jones, 2008)



Moreover, during their literature review researching value drivers, they also stated a few important points like those hypothesized by some CRM researchers that CRM benefits would vary by industry. But this was later disproved by Reinartz et al. (2004), which supports the idea that core benefits associated with CRM initiatives exist across contexts. Also they explain that each benefit was selected upon two criteria. The first one is that each benefit should be a value driver for CRM, and that they should be associated with the goal of improving customer relationships. The second one is that they should be



consistent with their definition of CRM, which like the current research emphasizes implementing a strategic component.

The seven core benefits are defined as follows:

1) Improved ability to target profitable customers:

Multiple researchers show that profitable customers can be found across a multiple range of acquisition cost, and retention rates. A CRM system can be used to help identify those customers.

2) Integrated offerings across channels:

When firms sell across different channels, it shatters customer information resulting in an erosion of customer loyalty. CRM can bridge all the information in a centralized and conceiving customer image.

3) Improved sales force efficiency and effectiveness:

Studies indicate that marketers learning how to better infuse CRM technology into the sales team will have a positive impact on the ability of salespeople to establish profitable, long-term relationships.

4) Individualized marketing messages:

One-on-one marketing and customized marketing messages bring added value to the usual mass marketing messages. CRM capabilities, designed to understand the individual customer, fully support the effort of firm marketers to become more customer-centric.

5) Customized products and services:

Service industry development and production capacity often require a co-creation process, between the customer and the firm. Technological innovations of the manufacturing industry also permit them to quickly respond to customer



demand in order to customize or modify a product. CRM can help firms to understand their customers' needs and allow them to increase their ability to customize their products and services.

6) Improved customer service efficiency and effectiveness.

Customer service is an important part of the firms' communication with its customers; efficiency and effectiveness are two critical factors. CRM can be used for providing support for the customer service personnel and improve the firm's knowledge of the customer issues and their expectations.

7) Improved pricing:

Often costs are averaged across customers and accounts which may obstruct the true cost of serving different customers. CRM systems aid in allocating costs to different customers and reduce the need for averaging between large customer groups. Moreover, CRM can help marketers to make better pricing decisions as they better understand individual needs and wants, they can adjust prices accordingly.

Implementation:

This section will look at important factors for successful CRM implementation. It will be divided into two main sections; first, the success factors, and second, the failure factors.

Early literature already shows important factors for a successful information technology project implementation. They are: clearly defined goals, a competent project manager, top management support, competent project team members, sufficient resource allocation, adequate communication channels, control mechanisms, feedback capabilities, and a responsiveness to clients (Pinto & Slevin, 1987).



And, when looking at critical factors in cases of successful CRM project implementation they don't change much. Our literature review reveals that on top of the above mentioned factors, a few others are specific to successful CRM implementation.

King and Burgess (2008) list nine Critical Success Factors (CSF) linked to CRM.

- Top management support
- Communication of CRM strategy
- Knowledge management capabilities
- Willingness to share data
- Willingness to change processes
- Technological readiness
- Culture change/customer orientation
- Process change capability
- Systems integration capability

Payne and Frow (2006) argue that success CRM implementation depends on four critical factors : CRM readiness assessment, CRM change management, CRM project management, employee engagement. Osarenkhoe and Bennani (2007) noted, on top of the usual firm commitment, the importance of cross-functional communication and the necessity of a customer loyalty training program for all employees.

As for the failures factors, several authors have listed the most critical items. Piskar and Faganel (2009) point out a few factors that caused project implementation to fail.

- Disconnection of CRM vision and execution
- Rising standard for CRM excellence
- Lack of knowledge pertaining to the concept of CRM



- Bad choice in sourcing CRM software
- Impossibility of integration with other companies applications
- The selection of the project team whose members were selected at random
- Over stressing the functionality of CRM
- Not having a front-to-back CRM solution for customers
- Not having the corporate culture to support the implementation of CRM

Foss et al., (2008) mentions that organizations can have different levels of success in their CRM implementation; adding that: “their success was determined mainly by the relationship between the complexity of the system and the speed and phasing of its development and roll out” (Foss et al., 2008, p. 72).

2.2 SaaS CRM

On-demand software delivery service models have existed since the late 1990s, different appellations were also used like Application Service Provision (ASP) or Business Service Provision (BSP) (Benlian & Hess, 2011). But at that early stage, these models failed to deliver reliability and quality standards that business users were demanding (Dubey & Wagle, 2007). The main reasons for that failure were the limitation of bandwidth availability and slow internet speeds (Kern, Willcocks, & Lacity, 2002). However, with the development of internet connectivity, multiplication of Wi-Fi network and cellular network Software-as-a-service has made a strong comeback. Industry analysts expect that by 2016, more than 50% of total CRM software revenue will be delivered as SaaS (Siemer & Associates, 2013).



This section will present literature specific to Software as a service CRM (or also named on-demand CRM). To have a good understanding of the effects of the SaaS business model over the delivery and consumption of a CRM application, we will first look at the maturity model. This will allow us to have a better understanding of the properties of current SaaS CRM application markets. Finally, we will look at the benefits and risks of a SaaS model from the adopter perspective.

2.2.1 Maturity Model

SaaS application delivery is part of a bigger trend referred as Cloud Computing. The five essentials characteristic are: on-demand self-service, broad network access, resource pooling, rapid elasticity, measured service (Mell & Grance, 2011). In our case we are interested only in the SaaS model, its definition, as for other models, can be found in the annex section in Table 2.

As previously stated, this business model has been evolving since the late 1990s and each phase brings different limitations to the adopter. Academic literature hasn't yet developed a precise classification model, but academics often refer to two industry models. The first one is SaaS Simple Maturity Model by Microsoft Corporation and the second one is SaaS Maturity Model by Forrester Research. The Microsoft model is similar to the Forrester model but the Forrester model is more descriptive. They classified their SaaS application into a six level maturity model while only four levels were used in the Microsoft model. We can find a corresponding level between Forrester's levels 0 to 5 and Microsoft's levels 0 to 3 (Sorenson & Chen, 2008).

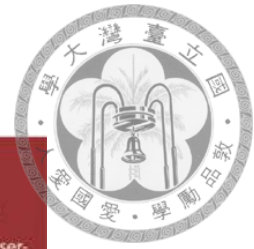


Figure 5 - Forrester Maturity Model (Ried, Rymer, & Iqbal, 2008)

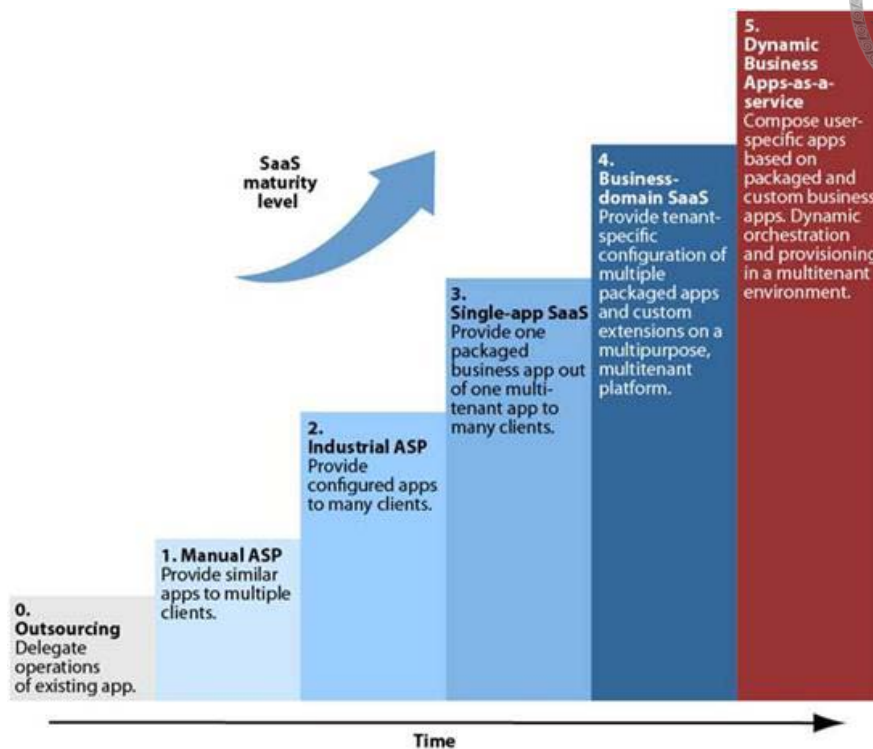


Figure 5 gives an overview of the different levels of the Forrester model. The SaaS model has continued maturing toward a vision of cost reduction and economy of scale. Thus, the SaaS CRM market may advance to level 4 even if a few entrants are still at level 3. It need to be said that SaaS CRM market main actors (Salesforce, Oracle, Microsoft, SugarCRM, Zoho CRM, etc.) are all implementing Level 4, using the multi-tenant configurable and customizable application. Thus it is important to look at the consequence of this model on the application itself.

Bezemer and Zaidman try to clarify some definitions and facts related to multi-tenant application in their position paper. First, they pose that a “multi-tenant application lets customers (tenants) share the same hardware resources, by offering them one shared application and database instance, while allowing them to configure the application to fit their needs as if it runs on a dedicated environment.” (Bezemer & Zaidman, 2010, p. 89) Also they define a tenant as: “the organizational entity which rents a multi-tenant



SaaS solution. Typically, a tenant groups a number of users, which are the stakeholders in the organization” (Bezemer & Zaidman, 2010, p. 89). This contrasts with the multi-instance model where each tenant gets his own instance of the application.

They explain that, the multi-tenant software provider view advantage in this model in few ways:

- Better utilization rate of their hardware.
- Cheaper application maintenance cost.
- Lower overall costs.
- Data aggregation opportunities.
- Ease of deploying new tenant.

Thus, this solution is more attractive in the small and medium business market as they are usually more cost sensitive and will not need all the computational power of a dedicated server.

Bezemer and Zaidman (2010) also list three key characteristics of a multi-tenant application: hardware resource sharing, shared application and database instance, and a high degree of configurability. It is important to consider them as they each bring different features to the applications. “Hardware resource sharing” and “shared application and database instance” usually doesn’t affect tenants as this process is transparent to them but on the SaaS application provider, depending on their ability to manage a multi-tenant application, it can create a reliability problem for all their tenants. Challenges on performance, scalability, security, downtime, and maintenance already exist on a single-tenant model, but the complexity of these issues is multiplied when considering a multi-tenancy model (Bezemer & Zaidman, 2010).



The last key characteristic is the one that will make a more immediate impact on SaaS application adoption. It's the capacity of the application to be customized by end-user interface. For CRM as SaaS it's separated into five sections¹:

Metadata: Capacity of adding data fields of different types to the application. They can also be an auto-calculated field based on a formula.

Layout Style: Capacity to change which data are displayed in which circumstances. The layout can also address the interface style in general like colour palette and design.

General configuration: Ability to modify user information, local systems, mail configuration, user security policy, etc.

Workflow: Capacity of programming automated routine that occur at different times. They don't require technical ability as the code is auto-generated by the application.

API Customization: Providing application programming interface for more powerful developer's customization. It is usually developed in-house or installed with a 3rd party plug-in via the administrator interface. Code can also reside elsewhere and use interface like SOAP or REST protocol.

To conclude this section, we can see that SaaS provider application architecture (i.e. multi-tenant customizable application / level 4) can have an impact on how traditional CRM systems are implemented and consumed. The next section will investigate the perceptions of adopters over SaaS model.

¹ Bezemer and Zaidman (2010) only talk about Layout Style, General configuration, workflow and file I/O. But during our review of the different CRM as SaaS the author suggests adding other capacity that vendors were offering.



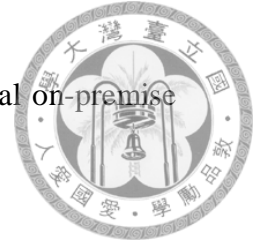
2.2.2 SaaS Benefits and Risks

When considering reasons for adopting SaaS, literature agrees that the total cost of ownership (TCO) is the principal factor for adoption (Benlian & Hess, 2011; Bibi, Katsaros, & Bozanis, 2012; Ried, Kisker, & Matzke, 2010). Benlian and Hess (2011) explain that “IT executives apparently perceived SaaS adoption primarily as a cost savings lever that helps them decrease their capital expenditures while increasing cash flows” adding that strategic flexibility has a significant impact on the improvement of quality. Another often cited adoption factor is the fast scalability that SaaS models offer as well as the accessibility (web-based multi-interface). Bibi et al. (2012) used a SWOT analysis for listing benefits and risks of cloud adoption in general (Figure 6)

Figure 6 - SWOT analysis for migrating to the cloud (Bibi et al., 2012).

Strengths (internal)	Weaknesses (internal)
Small capital expenses	Latency problems (until next-generation digital transfer technology becomes available)
Easy set-up	Reliability (data loss, code reset during operation)
Easy maintenance	No dedicated personnel
Horizontal scalability (number of instances)	Limited customizability
Vertical scalability (size of instances)	Limited configurability
Redundant data and services	No revenue from support operations
Opportunities (external)	Threats (external)
Eco-friendly systems	Data confidentiality, integrity, and availability
Elasticity	Difficulty in cloud-switching interoperability
Conversion of capital expense to operational expense	Legal problems from cross-country data distribution
Quick time to market	No clear downtime agreements or reimbursement policies
Flexible pricing, such as pay per use	No guaranteed return on investment
Tolerance to revenue decreases during crises	Compatibility issues

Benlian and Hess (2011) also found that perceived opportunities by IT executives tend to have a stronger impact on SaaS adoption decision making than perceived risks do. They list the predominant risk factor as security, followed by performance and economic risks. Their study also reveals that non-adopters were in fact sceptical of SaaS



vendors' promise of lower total cost of ownership compared to traditional on-premise installation.

That being said, SaaS literature doesn't explicitly look at the benefit and risk for CRM in particular. Moreover, it also doesn't look at the potential effect of multi-tenant application platforms that are highly customizable. This may come in opposition to practitioners and researchers that view promising opportunities in a SaaS model, especially in application markets that require low levels of system customization (Benlian & Hess, 2011).

2.3 Summary

This chapter introduced lots of concepts related to CRM in a traditional context and introduced new ways of provisioning and consuming information technology applications. At first we looked at the definition of CRM and its classification. Thus, despite the literature's confusion, it has allowed us to formulate a strategic concept that is strongly related to the value creation of the CRM. Moreover, this chapter also looked at reasons for CRM's implementation difficulties. It appears they are not really any different from a normal information system implementation project, but in some aspects they can be specifically relative to CRM projects.

The section also introduced literature relevant to a new trend of SaaS adoption. This allows us to understand that system architecture differences that exist in SaaS application. In opposition to some application markets that require low levels of customization (e.g. Google Docs, Emails, Online Backup), business related applications need to be customisable for reaching a potentially bigger market share. This brings new properties to modern SaaS CRM application and may result in differences in how CRM

are adopted and implemented. Finally, the research reviewed the general benefits and risks of SaaS adoption from the adopter perspective. These were related to the SaaS adoption model in general, and may differ according to SaaS maturity level 4 perspectives.



Chapter 3 Research Approach and Case Description



This chapter will introduce the research methodology, and give a description of the case study.

3.1 Case Study Research

Myers (2013) states that case study research can be use in an exploratory phase of a research topic to discover the relevant features, factors or issues that might apply in other similar situations. This case study will report on the implementation process of a Canadian company and their external CRM consulting firm, examining their process of implementing an on demand (multi-tenant SaaS application) CRM application.

The author of this work become aware of CRM systems in 2009 when he worked as a software programmer and project manager for the above mentioned consulting company. Thereafter he left the company to become a freelancer customizing CRM instance as a side job while studying abroad. The good connection with his past employer allowed him to be introduced to a firm that was interested in participating in this research project.

The formal field study started in November 2014 after insuring the full commitment of the firm. The key participants in the CRM implementation project were identified and the primary data was collected through phone interviews. The interviews were recorded for personal use and analysed for extracting notes. The focus of interviews was a discussion of points that our CRM adoption and implementation literature review revealed. This covered the firm's customer strategy, SaaS CRM adoption factors, the implementation processes, and their perception on the project overall and satisfaction with the system. The secondary source of data was collected from various channels such

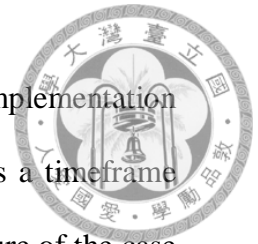


as industry journals, newsletters, vendor websites, blogs, and market analyses. That information helps to gain better understanding of the SaaS CRM market and gives a multiple perspectives on the topic. Moreover, several free trials with a few SaaS CRM vendors (Salesforces, SugarCRM, Oracle CRM on demand, Microsoft Dynamics) also increased the study data of the on-demand CRM markets and their capacity in customization.

For the data analysis, we identified the key events for a chronology of the project's implementation. The author then drafted a narrative of the implementation process according to the chronology of events. This process allows us to highlight similarities and differences within the existing literature. These finding were then regrouped into three main categories i.e. the effects of SaaS level 4 multi-tenant on CRM implementation, SaaS adoption factors, and additional finding. The findings were then discussed with the SaaS CRM consulting firm to validate them and further to see if they had perceived similar trends with other projects implementation whit other clients.

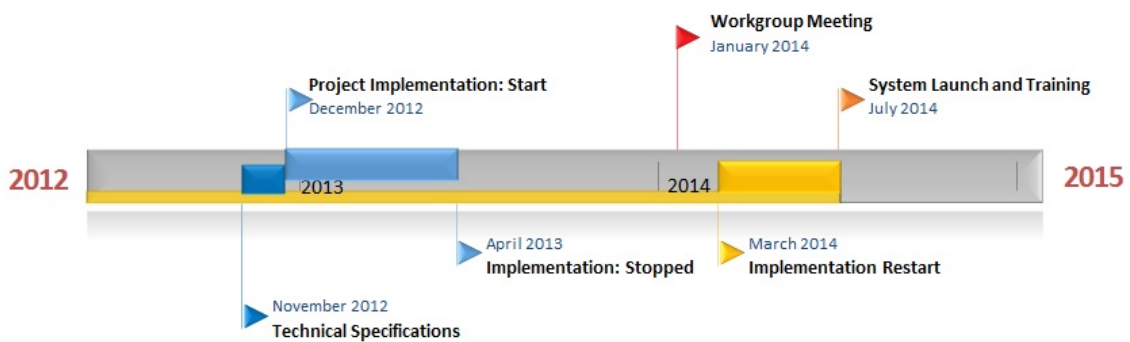
3.2 Case Study

Our case study was conducted at the end of the year 2014 and addresses special issues of a firm's CRM implementation using SugarCRM, a SaaS level 4 in the Forrester maturity model. It is a multi-tenant cloud service and can be employed as a private instance in the cloud, and also allow customers to deploy it on their own internal clouds (Tom Taulli, 2014). This case is pertinent because it contains multiple phases during the project, and it was implemented into an unusual sale environment that has a precise customer strategy. Furthermore, it highlights the complexity of defining the scope of an application that will be considered as SaaS.



Before beginning should be introduce the mains events of the CRM implementation project. To help the reader visualise the course of events, Figure 7 gives a timeframe estimate for the major events that affected the implementation. The structure of the case description will follow that chronology. It will be structured into sections. The first section will look at the industry background and supply chain to allow the reader to understand the different actors of the supply chain. The second section will look at the firm's background and the CRM scope. The third section will talk about the implementation phase until the system launch. And finally, the last section will regards the training of end-user and perception of overall project.

Figure 7 - Project Event Timeframe Estimate





3.2.1 Industry Background

The industry this case study concerns may be unfamiliar for some readers. The study focuses on the structural steel industry responsible for the construction materials that can be used for framing buildings or bridges. Steel is considered a newcomer in the construction industry when we compare it with other framing options. For example, timber and masonry have been used for thousands of years but the first steel structure in construction work can be traced back to the 1890s. Before this date regulation didn't permit steel structures and it was considered as an experimental material ("Structural steel," 2005). The evolution of design and fabrication procedures in structural steel corrected early problems of sound proofing and vibration. Now with modern techniques structural steel has lots of considerable advantages. It is a green material; 100% of the frame can be recycled and modern mills' produced steel contains an average of 90% of recycled material. It also provides high-quality material, facilitates predictability of project schedules and is an economically viable building framing material (AISC, 2012).

Looking at the supply chain of the structural steel industry, the American Institute of Steel Construction (AISC, 2012) divides it into four distinct components.

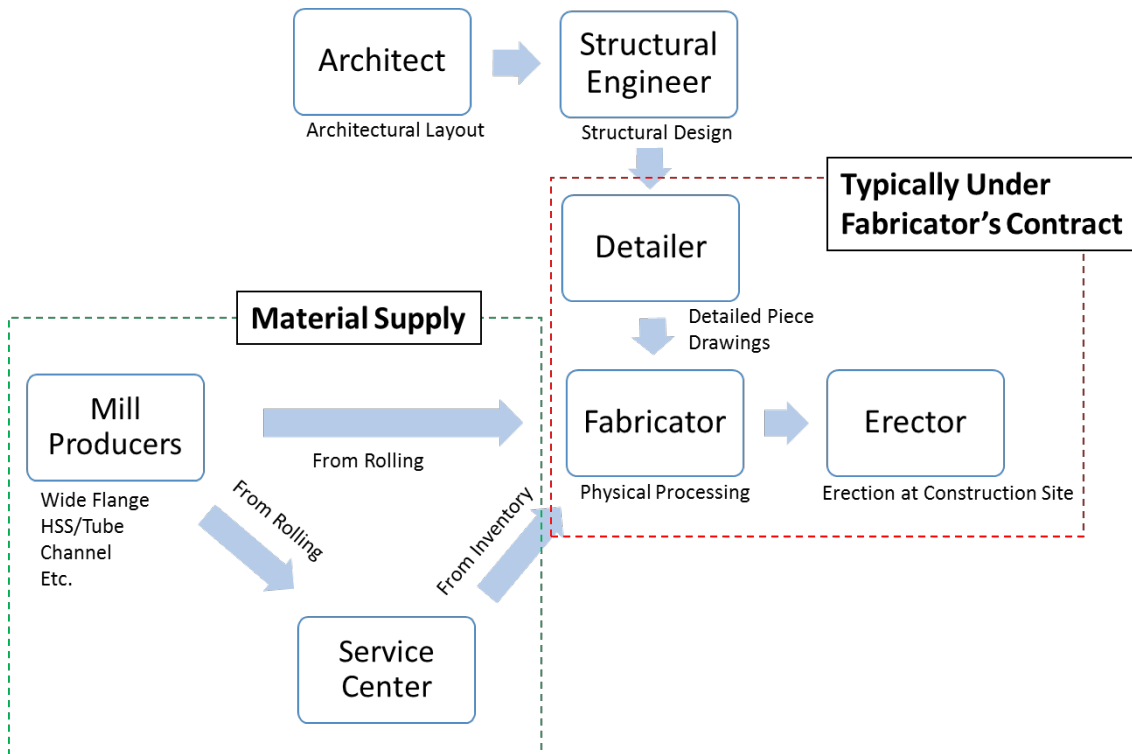
- Producers: This refers to the Steel mills that produce hot-rolled structural steel products like shapes, plates, angles, and tubular steel.
- Service Centers: Those serve as warehouse functions with limited preprocessing of the material.
- Structural Steel Fabricators: These physically prepare the structural steel material for a construction project by following detailed drawings that a structural engineer provides. It includes a large range of activities like material management, cutting, drilling, shop fitting, painting or galvanizing, shipping, etc.



- Erectors: These are the ones that assemble the structural frame on the construction project site.

Below, Figure 8 lists the different actors of the supply chain and their interaction.

Figure 8 - Structural Steel Supply Chain (AISC, 2012)



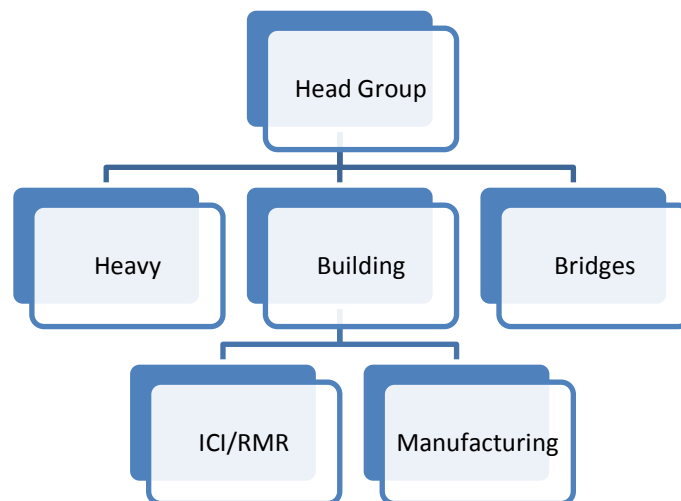
Within the Structural Steel industry, there is competition between different solutions when determining a building's structure. The choice of product is done by project deciders and is usually a decision that the architect and the structure engineer will make. Other project deciders like the promoter or the landlord of the project can also weigh in on the decision. Thus, the choice of a framing structure is decided in the conception phase of the construction project. From a marketing point of view, a product's representation compared to other types of framing materials needs to be done before the first drawing is made and in an early conception phase.



3.2.2 Firm Background and CRM Scope

This case study's firm is a fabricator of steel components for the construction industry. They specialize in the design and manufacture of custom made steel structures. They also have expanded into other complementary services like construction, building information modeling, technical drawing, and they also manage outsourcing for technical drawing projects. Their business is structured into three different divisions, but our case study will only focus on one particular division. Figure 9 gives the organizational structure of the firm. Each division's activity is defined as follows:

Figure 9 - Firm Organogram



Heavy: Covers large highly technical construction projects using heavy steel structures that are completely customized (e.g. stadium, skyscraper, factory, etc.).

Building: Smaller commercial, industrial, and residential markets which are suitable for more generic steel components.

Manufacturing: Manufacture of steel joists, joist girders and steel decks.

Table 3 of the annex section gives an overview of their products



ICI/RMR: Industrial-Commercial-Institutional (ICI) construction project and Residential-Multi-Residential (RMR) construction project. They create value by offering the design and installation of the Joist and Steel deck products of the manufacturing division (ICI: design + installation, and RMR: design with or without installation).

Bridges: Steel bridge structures.

The CRM of this case study is only concerned with the building division and is implemented within the ICI/RMR unit.

It should be said that the manufacturing units account for 75% of the division sales, which target lower members of the value chain (e.g. general contractor, steel structures erector firms, small construction firms, etc.). They simply fabricate steel framing components for the general construction firm. The ICI/RMR unit role is to create more value in the products by adding services. This creates a special sale ecosystem as they don't want to cannibalise the Joist and Steel deck manufacturing unit sales. They want to avoid competing with the manufacturing unit customers by directly tender on construction project against their client. Moreover like it was stated in the previous section, representation of steel framing products needs to be made in an early phase of the project.

Thus, both units have a different customer strategy. The ICI/RMR strategy aims to create a consulting relationship with project deciders (architect, engineer, landlord, etc.) at an early stage of the conception, so they can make sure that their products and services will be included in the project tender as a must when general contractors bid on



projects. As a result, others construction firms will not see them as a competitor but just as a supplier of products and services. One of the features of this process is that it generally takes between 6 to 18 months to get from the first contact with the decision makers to a contract signature with the general contractor that will manage the entire project. This slow sales cycle also creates a different reality that their CRM will need to consider.

In 2009, when the actual marketing director joined the firm's team as head of ICI marketing (RMR hadn't been merged at that time), he saw that no system existed for forecasting the sales pipeline or showing what projects sale representatives were working on. All the information before the first quote was signed existed in different formats (Excel, business card, Outlook, personal agenda) and was managed by the sale representative himself. Also, after the contract was signed, data related to that prospect was stored in an Excel sheet and the reliability of the data wasn't really good or enforced.

The main issues were:

- No centralized data on the different decisions makers of a project.
- No relationship history with them.
- No forecasting was possible.

It took two years to adjust to the culture and spread the idea that a CRM would be a good asset for the sales team and the marketing team in their everyday work. Sales direction and marketing direction agreed to develop a CRM that would fit the existing sale process and also standardize few procedures. They didn't need any of the traditional aspects of main-stream CRM processes that are related to normal salesforce automation (SFA), customer support, or customer complaint. For them, it was not



relevant. All of their sale-cycle gravitates around a project opportunity and required relations and communication with different contacts and firms. Thus, usual SFA sale-cycle processes (prospect, lead, lead conversions, contact, opportunity, quote) wasn't relevant. They needed a system that could adapt to their sale paradigm.

Additionally, the marketing director wanted something that was manageable by the marketing department, without technical knowledge in information technology. His past work experience with Microsoft and SAP system in his previous employment had given him bad experience with CRM implementation (actively involved and as a spectator) which turn out to be heavy system and didn't reach expectations.

Thus, his initial research brought him to Salesforce CRM. He started with a free demo to create a draft of the system. The IT director also suggested SugarCRM as they were already using it, in a small scale, for managing their offshore resources, but at that time the product was still immature and the user interface difference with Salesforces was huge. However, the cost per user was 3 times less than Salesforces.

The first research phase and understanding of the firm culture brings these requirements:

- Manageable by non IT people.
- Centralized data
- Have a mobile interface
- Low cost solutions
- Can be customizable



3.2.3 CRM Implementation

The projects really started to exist around the end of 2012, when the marketing department and sales department worked with an external marketing consultant for writing the technical specifications of the CRM system. For that they did interviews with the sales representatives to know their methodology and try to standardize and adapt their procedures to the new system. After the specifications were completed, the marketing consultant refers him to a local SaaS CRM consultant specialist that is partnered with SugarCRM (software provider). The initial contract included:

- Customization using existing code API, and end-user API.
- Installation on their own server.
- Training of the sales representative team.

But, at that stage the external marketing consultant only transmitted the technical specifications of the system and not all of the CRM strategy. Moreover, the specificity and complexity of the construction industry was also misunderstood by the SaaS CRM consultant project manager. The team that was working on the code customization didn't really have a full understanding of the specifications. Also, they discovered that some of the specification were not realistic and were difficult to implement. People were working without a real direction; communication issues and technical difficulties put the project on hold for 8 to 9 months.

A meeting was called with the SaaS CRM consultant team to restart on a good basis; talking about the development issues, their solutions, and how to fix the communication problem. One of the main issues was that the mobile application didn't have the security protocol compatibility to connect to their private cloud. That was an important problem as it was one of the initial requirements and it didn't work at all. One solution presented



was to host the application via SugarCRM public cloud i.e. on-demand. Moreover, a major version change would be released soon, and would at first only be available on-demand. The interface differences between the actual version and the one in the major release was colossal. The new version acted more like real software, and not like a website anymore, which saved the user lots of clicks. The marketing director also thought that they would eventually need to upgrade their CRM to the new version and that it would be better if the initial training was done with the new interface. The last point had the effect of promoting the use of a public cloud SaaS solution was that the complexity and culture of the IT department. Every time the service provider needed some technical change to the infrastructure, the interaction with the IT department was really complicated. The “it’s not my job” workplace culture was deeply implanted, and every request made to them needed lots of management attention. All of those reasons made the director favor a public cloud SaaS solution. It was totally against the enterprise culture since until then, it was the only systems that would not be maintained by their IT department. Their main objection was the security, but considering that data included in the CRM would not be critical; the change was approved.

Consequently, they waited for the release to be ready and upgraded from version 6 to 7. Unfortunately it didn’t work as planned either. The release was stable out-of-the-box but when upgrading from an older version lots of customisation didn’t work anymore. They needed to redo everything from a clean version. Also, the major release wasn’t ready yet, and had lots of bugs. But one of the advantages of being hosted by the SaaS vendor was the automatic update which gradually fixed lots of problems. In the end, they still needed to remove some customization as the code wasn’t stable enough and could affect the data integrity. But they finally reached a product that was ready to be presented to the sales team.



3.2.4 End-users Training

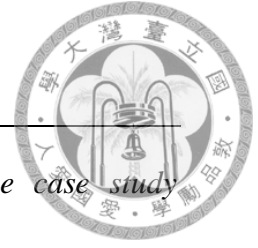
The first phase was to show the CRM to the ICI sales team and, as the contract specified, the training was to be done by the SaaS CRM consultant. Their plan was to do a web conference, and present it to the sales team explaining the new procedure and how to use the CRM. But, the required time for training was misevaluated and once again the trainer didn't really understand the purpose behind the new workflow and procedure. He was showing it as a step-by-step tutorial without flexibility in the processes. That was in contradiction to the real life situation of the sales team where exceptions would have to be made. The trainer also didn't know all the technical vocabulary related to the construction industry. That brought communication issues between the sales representatives and the trainer.

The SaaS CRM consultant also became to be reluctant to do additional training and bug fixes. They wanted to charge more and so the marketing department decided to take charge of the training by themselves, close the contract, and move forward. It took a good half day of "real human" training and system presentation by people that knew the CRM and the firm's sale process.

During the interview the marketing director said that the enterprise culture is really slow to change. The standard KPI haven't been implemented before, and that they needed to develop a new system that was appropriate to the slow sale-cycle but one that could also be used to measure the efficiency of the representative using the CRM. Many representatives don't like it, and the sales direction doesn't want to force them to use it by creating KPI. Everyone agrees on the implementation of a CRM system, but a real task force to push the change hasn't been created. As a result, some users are 100% into

it, and others view the system as heavy and causing waste of time. They don't see what is in it for them and management hasn't provided enough incentive to convince them of the project.





Chapter 4 Discussion

This chapter discusses the findings that were highlighted during the case study investigation.

The case study highlights interesting aspects about SaaS level four CRM implementation. The research classified them in three categories, each presented as one section. First we will look at the effects of SaaS level 4 over traditional CRM implementation. Second section will look at the SaaS solution adoption factors and additional considerations. The last section will summarize the findings and compare them with the literature review.

4.1 Effects of SaaS Level 4 over Traditional CRM Implementation

First of all, when looking at the CRM concept by itself it can be seen that SaaS CRM applications tend to follow closely the operational definition of a CRM. But once the firm starts to customize it and try to implement their own customer strategy, the Payne and Frow continuum (Figure 2) starts to shift towards the right side, toward a more strategic approach of CRM. This also can be seen in the type of classification models that our literature review pointed out. At the beginning a CRM SaaS “out-of-the-box” can be classified as operational with few analytical capacities (e.g. dashboard figures and standard sale reports). The strategic part of the Enterprise-Level CRM Model and Processes (Tanner Jr, John F et al., 2005) is situated in the center of the model implying that the operational and analytical processes need to reflect the CRM strategy but also, that the operational and analytical input can be modified to fit the firm’s strategy.



Thus, the adaptive ability of the CRM SaaS multi-tenant architecture can be viewed as having a synergic effect when it comes to the integration of a firm's strategies. Its easy customization can help management make changes in the application without expending too many resources, and this can still be done after the implementation of the CRM. Payne (2006) also pointed out the necessity of having scalable solutions when it comes to choosing a CRM technology. He mentioned the needs of a flexible technology architecture which is suitable for both present and future needs. He finished by saying that "One of the keys to success will be the ability to 'think big and start small'" (p. 246). This is in accordance with what the interviewee said of the SaaS CRM consultant:

"We can make an implementation (first CRM implementation) until an opportunity comes up, so we get a sales funnel, but we will not touch customer services and marketing. Only after that, can we further implement the sales forecasting by adding the quotations module, contracts modules, project management, etc. Phase two can be about marketing or vice versa; we can start with marketing and go for the sales after. It depends on the customer. But, the concept is to make a step-by-step approach to simplify the implementation".

Moreover, continuing with the adoption and implementation process of CRM, our case study reaches a similar perspective with the existing literature. First, we can directly identify three value drivers from the Richards and Jones (2008) Figure 4 conceptual model in this study's firm's CRM strategy [i.e. targeting profitable customers (key account strategy), improving sales force efficiency and effectiveness, improving customer service efficiency and effectiveness (by improving communication history



with project deciders)]. That being said, three other value drivers are also related to customer strategy (integrating offerings across channels, customizing products and services, and improving pricing) but were not relevant in this case's sale model. The last one, individualizing marketing message values, did show up in this case's interview process, but all CRM as SaaS have this feature which makes one wonder if it should have the same weight in Richards and Jones model.

Furthermore, looking at the CRM implementation success and failure factors, this case study also reveals some interesting aspects. Implementation problems show up in two phases of the project. First, during the development phase, problems were related to the CRM SaaS consultant and the SaaS application provider. Communication issues over CRM strategy were the main reason why the project failed to be implemented at the beginning.

“It's like we (me and the external marketing consultant) created all the model of the system, and then he passed the documents to the CRM consultant for the implementation. After that moment he got out of the project because he had other things in his pipeline. From that moment we were working from an Excel file, it was like if [the CRM consultant] and I never really talked together. They were doing modifications but without knowing why. [...] It's as if I never transmitted the global vision of the system.”

The CRM strategy communication issue is in accordance with King and Burgess's (2008) findings as a key factor of implementation failure. Furthermore, a second aspect of difficulties was the lack of knowledge of the consultant pertaining to the firm's industry reality and nomenclature. Interestingly, this represents a consultant's side of



the lack of knowledge (of the adopter) pertaining to the concept of CRM which Piskar and Faganel (2009) noted in his paper. This was a recurring theme in our interview when it comes to evaluating the SaaS CRM consultant performance. For example during the training phase:

“When we talked to sales representative, or end-user, you can’t talk to them like... their vision of the training was really like work flow, really systemic [...] they had the ‘How’ but didn’t have the ‘Why’. For example, they will teach you about the sales phases like you will go to this sales step to that sales step etc. But after that you need to say, in your reality (sales representative) what it means, and sometime it’s not linear, you will jump a step... like ‘drawing contract’ we know what it means, but [the CRM consultant] didn’t know”.

Or, like the ICI/RMR marketing department project manager told us:

“With the consulting firm I need to be really really really precise about what I want to do with the next development, because they don’t know the context, which is normal, construction industry or just the enterprise by itself is quite complex.”

Their conclusion was that consultant competences related to CRM were certain, but that the lack of knowledge in the industry and the firm’s reality created communication difficulties. The consultant side explained this problem as a consequence of the long duration of the implementation, also stating that their project manager changed three times over the course of the project. However, it was admitted that a good understanding of an industry and a company processes are vital to CRM implementation success.



The second implementation phase problem was linked to the SaaS application provider and triggered by a major update release that caused conflict with their customization. This reflects an important aspect that the traditional approach doesn't account for with an on-demand application. Bezemer and Zaidman talked about the difficulties of maintaining the multi-tenant code from a software engineer's point of view and this problem was related to that. In this case, the software supplier's major update didn't have the capacity to update an instance with this level of customization. The firm could have waited until a more stable patch was released, but to avoid more delay they decided to re-implement the customization in the new version from a clean slate. That being said, this situation also can be related to a failure factor that Piskar and Faganel's (2009) research pointed out, when they spoke of making bad choices in sourcing CRM software. In the case of a SaaS CRM, it can be translated into the ability of the application provider to manage his multi-tenant code and infrastructure.

The last problem came up in the training phase; once again the consultant's lack of knowledge related to the firm's industry forced the marketing department to do the training by themselves. But, that also reveals that the top sales management wasn't ready to push and support the CRM adoption for their sales team. This is also one of the causes for failure that past research points out (King & Burgess, 2008; Piskar & Faganel, 2009).

“I got the OK from the sales, but I didn't have the commitment from the sales. Once again it's the marketing that pushed the CRM, the sales agreed about a CRM but I never felt their urges during the project. Like for the sales VP, he is interested by the CRM, but hasn't got the time to see how it works, even after it has been ready for 6 months.”



This was also confirmed by the consultant side sales director when asked “What are good indicators of a project implementation success?” number three was:

“What makes a success is when the director is enthusiastic and wants to use the CRM for managing his team. For example, if they force the sales to use it, but in the sales team meeting he doesn’t use it, it will not be a success. It’s like you cannot ask someone to use the system but you don’t use that system to give your feedback.”

4.2 SaaS Solution

From the SaaS solutions point of view, findings also correlate with existing research. The adopter’s main criterion for choosing a SaaS solution was the cost of the application. Another adoption factor that was discussed during the interview was the flexibility that a SaaS solution has compared to a traditional system.

The interview also reveals that the most reluctant user’s key objection was that the new systems slow them down. This reason was mentioned as one of the main causes of adoption failure in the first ASP model (slow internet speed) (Kern et al., 2002). At first, this is only considered as a latency problem by the marketing director, who also often referred to the importance of a modern interface, and the necessity to “save lots of clicks.” This was so that the website could act more like normal data input software. But our interview with the consultant side brings us additional data that one can relate to the reluctance to adopt new technology:

“A super good sales representative, I’m closing lots of deals, every day is a super rush. I will not accept slowing down to learn a new system. I’m trying



to reach my sale objective; I can't allow myself lost time for learning a new system.”

It would be interesting to further analyse the effects of the user interface and the general response time of a system on the new adopter.

Another interesting aspect of the case was that at the beginning the SaaS application was supposed to be hosted by the firm's IT department, but ended up being hosted by the SaaS application vendor. At first, that caused confusion about what exactly is a SaaS application, because the main difference from the user's point of view was the automatic update capacity. This is where it was discovered that the business model of SaaS implied technological architecture that also caused different effects on the software itself. Those differences are really the core of the actual CRM as SaaS vendor ecosystem i.e. SaaS maturity level four in the Forrester model. When this study began it was thought that differences may be found in an application being hosted by a SaaS provider. However the major difference, in the author's opinion, is to be found within the multi-tenant architecture. This will be further investigated in the next section.

Additionally, this event raises other important aspects for discussion. First, looking at the situation before the migration to the SaaS vendor cloud, it can be seen that dealing with the IT department increased the complexity of the project.

“The way that the IT department is structured caused us a headache, you have people for the manufacturing, other people for the software, the infrastructure, the licencing, and it got really complicated. And that is one of the reasons I opted for the hosted solution, one day we had that call meeting, me, and the project manager from [the consulting firm], and when I asked the IT to join the call I got five people in”.



Managing the request of the consultant to the IT department took lots of managerial attention from the marketing department. This may be an unusual case but it is reinforced by Meyer and Kolbe (2005) who mention many studies that show the importance of inter-organisational processes during a CRM implementation. Such a project implies interaction between an IT department, a marketing department, and a sales department. If a firm can reduce the need of the IT department, it can simplify the overall implementation. Also, when findings were verified with the SaaS CRM consulting sales director, he also stated that dealing with some IT departments can be harder than others, like VPN, security policy, attitude, etc. That can slow down the support. But, it's most likely that the IT department will always be present, to some extent, for the CRM implementation. "Even with an on demand system we will still need to speak with the IT for importing the data into the new system".

However, we need to say that inter-organizational complexity was only one of the reasons for doing the migration. It was also aimed at solving the compatibility issues of the CRM mobile client with the required security protocol of their enterprise network. These kinds of problems were also discussed by Bibi et al. (2012) in the SWOT analysis as an external threat to SaaS adoption, discussed in the literature review as a compatibility issue. The last reason for doing the initial training with the new interface was so that the sales representative didn't have to relearn a new interface all over again.

Finally, the only concern raised was about data security. This is also aligned with the existing SaaS literature as a primary objection (Benlian & Hess, 2011; Dubey & Wagle, 2007; Siemer & Associates, 2013). But, in this case the data wasn't critical and the top management accepted the change.



4.3 Additional Finding

Multi-tenant architecture also outlines interesting concepts. In the author's opinion, it is this variable that caused the most impact over the traditional CRM approach. Like we already discussed in the previous section, the case study reveals that the multi-tenant SaaS architecture can help with the implementation of the strategic vision of the CRM by reducing the necessity of IT personnel in the implementation process and for the maintenance of the CRM system. The interview with the marketing director revealed:

“We are two guys from marketing who didn't study in information technology, we can manage the interface by ourselves and you don't need a technology background to do 85-90% of the customization that we need in the CRM”.

Another advantage that is gained with this application model is the community around the vendor. API and plug-in installation interface allow 3rd parties to offer a variety of customization and application interoperability features that are not offered by the SaaS level 4 CRM vendors. This follows the network effect theory of software provision which hasn't been precisely stated in the SaaS literature as a factor of evaluation for the SaaS solutions. In the author's opinion, this industry trend is new to the CRM literature.

During our interview the strength of the network effect was referred to when we asked for the strengths and weaknesses of the system. The first point that the marketing director answered for us was:

“One of the weaknesses that I started to realise, versus Salesforces in comparison, is tools that are actually developed by other people are made for Salesforce. The ecosystem of plug-in is really weak for SugarCRM versus



the competition. That is one of the weaknesses of the system, its market penetration”.

Our second interview with the ICI/RMR marketing department project manager also revealed that he often likes to go on the different forums to find documentation about the system. This is also affected by the network effect. Thus, it seems really important to consider it in relation to the SaaS level 4 CRM vendor.

That being said, opening API for 3rd parties' code and customization can also have negative effects. Over reliance on third party plug-ins can be dangerous. Most of them are free and don't come with any service agreement that protect the users from an interruption of service. Also, security concerns can be raised in some plug-in architecture models that can transfer data for processing onto their own server, or simply have malware or spyware code inside them. This is also a new consideration that needs to be addressed in such an ecosystem.

Finally, the other risks that reside inside an SaaS level 4 CRM and that our literature review displays are the challenges of managing a multi-tenant platform (Bezemer & Zaidman, 2010). Risk like interruption of service, loss of data, and security breaches can be a huge liability over a SaaS level 4 CRM vendor as the number of clients affected is greater by definition. However, the infrastructure related risks, and the lack of capability of the SaaS level 4 CRM vendor to have good software engineering practices can also cause headaches for their users.

As already mention in section 4.1 in this case the major release wasn't ready and caused difficulties during the implementation. This is one example, but that concept can be impacted furthermore in the 3rd party vendors' ecosystem. In the case that the SaaS level 4 CRM vendors don't have high quality practices for managing its API code



interface, an update may cause the behavior of some plug-ins to change. If the firm relies too much on 3rd party plug-ins it can be a source of problems and extra costs.

Another interesting aspect that should be further investigated is the relation of the IT department toward the SaaS product. It is reasonable to assume that the role of the IT department will change if more systems are consumed in the manner of an SaaS. Such a change and how this change will be perceived by the IT department itself hasn't been researched yet. One of the points that this study highlights is that dependency on the IT department is reduced but not completely removed when we are comparing the traditional CRM approach and the SaaS approach. Our interviews enforced this assumption in two ways. First, the marketing department project manager said that he would have appreciated a dedicated IT resource under the marketing department's control during the implementation. Secondly, the implementation consulting firm mentioned that the IT department will always be needed to some extent (like for importing the data) during the implementation process, and that their commitment to the project is also a factor for success.

Therefore, how the new reality of cloud computing will affect the IT department in their daily activities is an uninvestigated question. Moreover, from an organizational behavior perspective, how cloud computing will affect the IT department is also a fascinating topic. Will they feel threatened by it, or will they see it as a change in their responsibilities. The scope of this study doesn't cover perception issues but the questions that it raises are relevant to SaaS adoption.



4.4 Summary

In this section we will resume discussion of the research's findings with different figures.

The first two figures show the differences that our research has highlighted between the SaaS CRM and the traditional approach. Figure 10 look at findings related to strategy, and Figure 11 looks at implementation.

Figure 10 - Effects of SaaS Level 4 on Traditional CRM: Strategic Findings

Conform with CRM literature	Potential Differences
Necessity of a CRM Strategy	Implementing the Strategy
<input type="checkbox"/> Value Drivers are linked to strategy and unaffected by the technology itself. In our Study: <ul style="list-style-type: none">• Targeting profitable customers• Improving sales force efficiency• Improving customer service efficiency	<input type="checkbox"/> Flexibility of SaaS CRM can help reaching a better strategy integration. <input type="checkbox"/> Starting Small, with a step-by-step approach <input type="checkbox"/> No need of IT personnel for workflow adjustment.

Figure 11 - Effects of SaaS Level 4 on Traditional CRM: Implementation Findings

Conform with CRM literature	Potential Differences
Implementation Factors CRM	Implementation Factors SaaS CRM
<input type="checkbox"/> Communication issues over CRM strategy <input type="checkbox"/> Lack of support from Top Management <input type="checkbox"/> Low willingness to change processes	<input type="checkbox"/> Lowering interaction with the IT department <input type="checkbox"/> Knowledge of the consultant pertaining to the firm's industry reality and nomenclature



The next figures summarize the benefits (Figure 12) and risks (Figure 13) that our research highlights between the SaaS adoption literature and our SaaS CRM findings.

Figure 12 - Effect of SaaS level 4 CRM on SaaS Adoption: Benefits

Conform with SaaS literature	Potential Differences
Benefits of SaaS	Benefits of SaaS CRM
<input type="checkbox"/> Cost of implementation is the first adoption factor	<input type="checkbox"/> Flexibility that SaaS CRM offers is the second adoption factor
<input type="checkbox"/> Easy maintenance (Automated Update)	<input type="checkbox"/> User Interface importance for efficiency
	<input type="checkbox"/> Important Network Effect

Figure 13 - Effect of SaaS level 4 CRM on SaaS Adoption: Risks

Conform with SaaS literature	Potential Differences
Risks of SaaS	Risks of SaaS CRM
<input type="checkbox"/> Latency of SaaS compared to a on-premise application	<input type="checkbox"/> Additional Security Threat
<input type="checkbox"/> No dedicated personnel	<input type="checkbox"/> Extra Dependency on 3 rd party vendor
<input type="checkbox"/> Reliability (major update release failure)	
<input type="checkbox"/> Data confidentiality (question was raised)	
<input type="checkbox"/> Compatibility issues	



Finally, the Table 1 contains additional findings that were discussed

Table 1 - Comparison Matrix

Additional Findings	Present In Case Study	Explanations
<i>3rd party plug-in vendors</i>		
Important network effect benefit	X	The ecosystem of plug-ins was raised as an important aspect of SaaS CRM when considering a vendor.
Additional security threat Extra dependencies		
<u>Flexibility of the SaaS level 4 CRM</u>	X	SaaS flexibility helps in implementing CRM strategy by reducing the need for specialized IT personnel but without completely eliminating it.
<i>Implementation</i>		
Difficulty related to knowledge firm from the consultant implementation side	X	The lack of knowledge of the consulting firm concerning the industry and firm processes played a role into the implementation difficulties.



Chapter 5 Conclusion

Our study raised important questions related to the unexplored concept of Software as a Service Customer Relationship Manager systems (SaaS CRM). The recent transformation of business models for developing such software has introduced new important variables that haven't yet been explored. The industry reached a higher standard of refinement for this model which improved the efficiency of software delivery, the ease of maintenance, and the optimization of how information technology resources are used. All of this was accomplished without compromising the customization aspect that users required. Moreover, this new model allowed small and medium enterprises to adopt systems that wouldn't have been affordable before. This paper explored the effects of this new trend over the traditional CRM approach. More precisely, on how does it affect CRM adoption factors, and how does it affect its implementation.

Our results show that looking at the CRM concept by itself; there were not any major differences between the traditional approach and the SaaS level 4 CRM one. Both systems' value resides in a strategic vision of the CRM. Also, during the implementation process, success and failure factors related to human factors were re-confirmed. Differences reside in the effect of the reduction of dependence on IT specialists. Managers without IT background can customize and implement change more easily in their CRM. This flexibility allows them to reach a better integration of their process over time. Also the appearance of a 3rd party plugin vendor market brings new considerations when it comes to choosing a SaaS CRM vendor. The network effect generated by the vendor brings an added value to the system, as well as bringing new

risk considerations. Quality and quantity of the plug-ins are not equal between vendor, and dependence to them can cause others problems in term of security and reliability.



Finally, this study is not without limitations. The usage of only one case study doesn't provide us with decisive proof of our findings. On the other hand, it raises questions that need to be further investigated. The topic of multi-tenant architecture hasn't been researched yet. Also considerations of what this new software architecture would bring to the consumer, have yet to be determined. But SaaS will certainly affect how CRM are distributed and consumed in the SMB segments of the market.



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Annexes

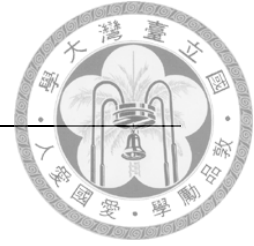


Table 2 - NIST Cloud related definition (Mell & Grance, 2011)

Term	Definition
<i>Service Models</i>	
Software as a Service (SaaS)	The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings
Platform as a Service (PaaS).	The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.
Infrastructure as a Service (IaaS).	The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).
<i>Deployment Models</i>	
Community cloud	The cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be owned, managed, and operated by one or more of the organizations in the community, a third party, or some combination of them, and it may exist on or off premises.
Public Cloud	The cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them. It exists on the premises of the cloud provider



Private cloud	The cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers (e.g., business units). It may be owned, managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises
Hybrid cloud	The cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds).

Table 3 – Building division products overview

