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Master Thesis

Impact of Enterprise System roll-out project – CRM system upgrade & deployment

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The author of this master thesis was motivated by his professional interest in field of Customer Relationship Management (CRM) and CRM implementation in practice from scratch. Luckily, there was a CRM upgrade project planned at the author's workplace which provided him the opportunity to take a deep dive into the interest area.

The main aim of this study is to identify and analyse the different factors impacting the company as a whole while deciding to do the CRM upgrade project and propose a solution model for doing the change. Through this master thesis, the author tried to qualitatively and quantitatively analyse the impact of multiple factors on the CRM upgrade and provide a proposal containing the multiple options to the company for proceeding with CRM upgrade project.

The theoretical part of this master thesis was built to separately determine the software and industry categories and applicability criteria. The theory covered the CRM application areas, common problems faced and comparison of multiple CRM solution providers. The interviews and survey done at the case company allowed to analyse the data and allowed to make some recommendations and proposal for future.

The results from this study are aimed allow the company to utilize the proposed proposal and help the company to make decision regarding how to proceed with the CRM upgrade project which should ultimately bring costs down, reduced customization, improved technical as well as business benefits, resolve resourcing issues etc.

Keywords	CRM, Customer Relationship Management, Analytics, Microsoft Dynamics, IT Systems, System Analysis, System upgrade, Project Management

Contents

1 Introduction

Customer Relationship Management (CRM) is a system that allows an organization to reach out and/or interact with its current and future customers. CRM systems have been around for long and are in use in almost all industry segments irrespective of the business domain, customer segments, location of business, business type etc. CRM system is a core pillar for a Marketing & Sales units of an organisation.

CRM involves using technology to gather the intelligence you need to provide improved support and services to your customers. In other words, CRM is also about what you do with that information to better meet the needs of your existing customers and identify new customers, resulting in higher profits for you. [1]

The main CRM building blocks are:

- A database that collects information about your customers.
- A way to analyse the information in the database.
- A strategy for applying the analysis to better meet your
- Clients' needs and identify potential customers.
- Collecting data to ensure your strategy is effective.

Shani and Chalasani (1992) [2] have defined relationship marketing as "an integrated effort to identify, maintain, and build up a network with individual consumers and to continuously strengthen the network for the mutual benefit of both sides, through interactive, individualized and value-added contacts over a long period of time".

Customer Relationship Management is a comprehensive strategy and process of acquiring, retaining, and partnering with selective customers to create superior value for the company and the customer. It involves the integration of marketing, sales, customer service, and the supply-chain functions of the organization to achieve greater efficiencies and effectiveness in delivering customer value. [3]

But CRM does much more than just track customer interactions. It also helps organizations optimize their operations by automating routine tasks and standardizing best practices. Ultimately, CRM allows organizations to better acquire, manage, serve, and extract

value from their customers while improving operational efficiency which is something that is critical in today's economy. [4]

Coltman, Devinney and Midgley [5] examined the impact of customer relationship management (CRM) on firm performance using a hierarchical construct model. Their results reveal a positive and significant path between a superior CRM capability and firm performance. The superior CRM capability is found to be positively associated with human analytics and business architecture. However, their results suggested the impact of IT infrastructure on superior CRM capability is indirect and fully mediated by human analytics and business architecture.

Ken Murray from VanillaSoft [6] argues that CRM software has passed the stage of being considered innovative and has become a default tool in many sales departments. CRM has proven very effective for many sales activities, but to kick an Inside Sales effort into high gear Best-In-Class organizations are now deploying tools that do more than store and report on data - they change behaviour and drive productivity.

1.1 Company introduction

The case company for this master thesis is Tekla Ltd., Espoo, Finland [7]. Tekla produces information modeling software for construction, energy and infrastructure industries. Tekla has over 20 offices worldwide and a global network of resellers.

Tekla drives the evolution of digital information models and provide competitive advantage to the construction, energy and infrastructure industry. Tekla became part of Trimble Navigation Limited in July 2011.

The company has two business areas, Building & Construction and Energy & Public Administration, which cater for the needs of the respective industries.

Some facts about the case company (Tekla Ltd.)

- Established in 1966
- Two business areas: Building & Construction and Energy & Public Administration
- Headquarters in Espoo, Finland

- Global presence: offices in more than twenty countries, a worldwide partner network, and customers in over 100 countries
- Employs nearly 600 people
- Tekla became part of Trimble Navigation Ltd. in 2011.

1.2 Problem Statement & Objective

1.2.1 Logic

Upgrading a CRM solution (or any IT infrastructure) is not straightforward. It requires detailed planning and management of total costs, functional as well as non-functional requirements analysis, cost-benefit analysis, procurement, risk analysis etc. It normally has dependency on multiple systems and impact of multiple business as well as IT processes. In addition, there might be legal as well as data privacy issues to consider as well. It might also require Service Level Agreements (SLAs) formulation and other agreements like support, trainings etc.

CRM upgrade main impacts to the case company include:

1. Maintain and improve Tekla B&C's ability to operate, develop and enhance and it's customer information management solutions for its existing and future processes
2. Reduce dependency to custom components to improve CRM performance
    a. Replace functionality with customizable workflows
    b. Partly re-design legacy extensions to improve support and reliability
3. Consolidate customer data into a single source
    a. Provide a single view of regional CRM customer data
    b. Improve global reporting capabilities
    c. Provide ability to have global processes
    d. Provide a future master customer data source for use in web services
4. Purge legacy data
    a. Reduce the amount of activity history clutter

1.2.2 Objective of the master thesis

The main aim of this study is to identify and analyze the different factors impacting the company as a whole while deciding to do the CRM upgrade project and propose a solution model for doing the upgrade in the future.

Main risks to analyze include:

- Process realization risks: documentation, communication, collaboration etc.
- Technology risks: Platform migration, data migration, integrations etc.
- People/organizational risks: Resource Management, organizational silos, user adoption (buy-in), management support etc.

The aim of the master thesis is to qualitatively and quantitatively analyze the impact of multiple factors on the CRM upgrade and provide a proposal containing the multiple options to the company for proceeding with CRM upgrade project.

1.3 Output of the master thesis

The company should be able to utilize the proposal and help the company to make decision regarding how to proceed with the CRM upgrade project which should ultimately bring costs down, reduced customization, improved technical as well as business benefits, resolve resourcing issues etc.

The final results and recommendations of the master thesis will be based on the implementation of CRM upgrade pilot in the company which is planned according to the proposed model during this master thesis. The results assessment will be done against multiple end-user specific but measurable CRM platform KPIs including:

- CRM Platform Non-functional KPIs
    - CRM Availability
    - CRM Reliability
    - CRM Usability
    - CRM Performance
    - CRM User Interface
- CRM Platform Functional KPIs

- CRM Custom reports
- CRM excel reports
- CRM advanced find queries
- CRM work process

The CRM Platform KPIs are highlighted in Figure 1.

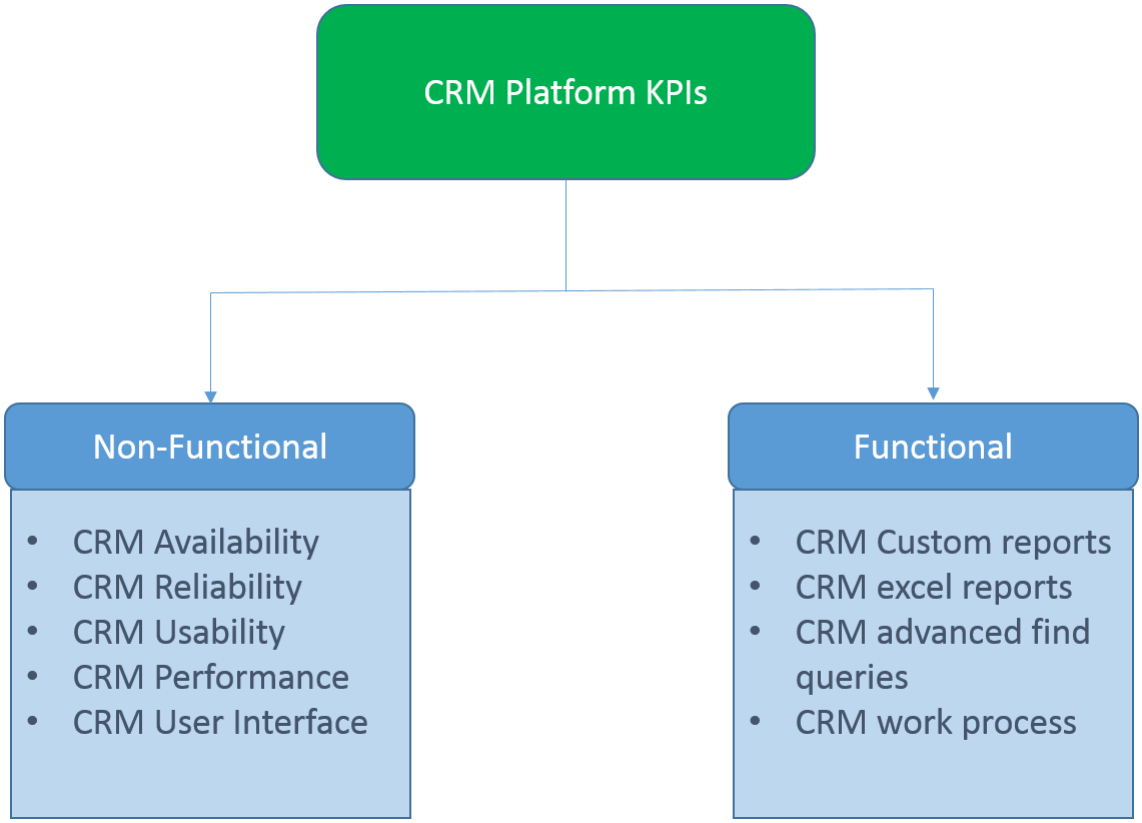

Figure 1. CRM Platform KPIs

The master thesis will also provide a high-level operational plan of the next major upgrade of the CRM system including a sample project plan along with training requirements. The key factors impacting the CRM upgrade for the company will be summarized as well.

2 Research Approach

2.1 Research Design

The research starts with defining the research objective to define the problem areas that this thesis will tackle. After defining the research objective, the research overview is defined with data collection and analysis tasks. The current state analysis will be defined by analysing the current CRM implementation within the company. The company's outlooks towards existing CRM implementation will be defined to figure out the needs for the upgrade. Risks and challenges will be outlined with the existing CRM solution of the company.

The current state analysis is followed by defining a theoretical model for the CRM upgrade which will outline the basic blueprint for the CRM upgrade. The proposed model will then be used as the feedback collection mechanism with key stakeholders of the company via interviews and surveys. The data collected will then be objectively analysed. Based on the feedback analysis and insights gathered, a final proposal will be defined for the company to use for the future CRM upgrades. The final proposal will then be summarized in detail, the possible next steps that the company could undertake before the next upgrade as well as the limitations of the final model will be presented.

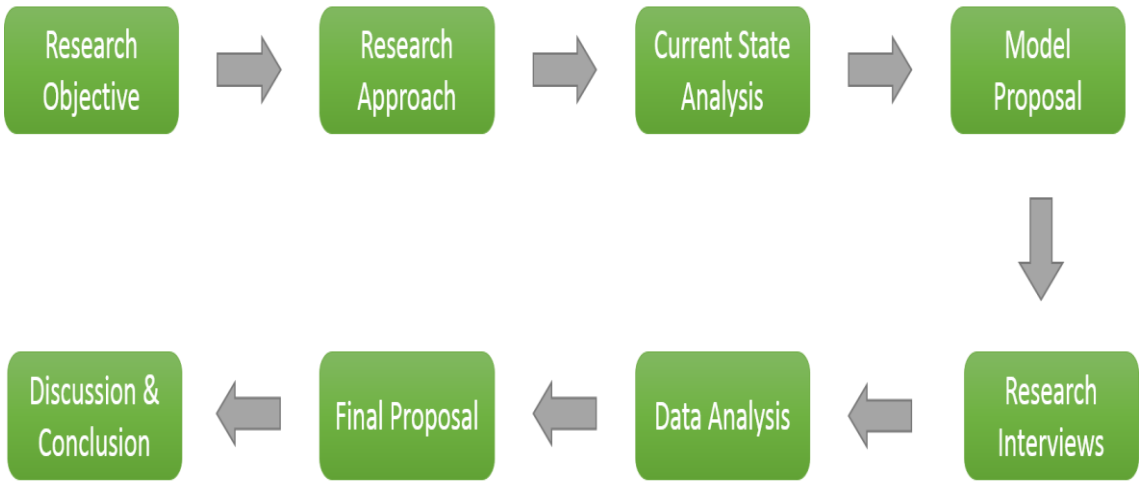

Figure 2. Research design of the master thesis

2.2 Data Collection & Data Analysis Methods

Main source of data is the company's documents about the previous CRM system upgrade. The existing data is analysed with the literature to build the insights for the system upgrade. On top of that, interviews are done with the key stakeholders of the company

involved directly or indirectly with the upgrade. Survey is done in the end to validate the correctness and applicability of the proposed model in the company.

The inputs from previous history of upgrades, the latest literature available and the survey questions are consolidated and critically analysed to propose a model for the future CRM upgrade by the company. The proposed model is then used by the case company to do a small-scale roll-out of the upgraded CRM platform. The proposed model and the pilot upgrade is sanity checked by conducting interviews with a small user group for validation and further improvement. The final model is generated as a result. The whole process of data collection to final model gerneration is shown in Figure 3.

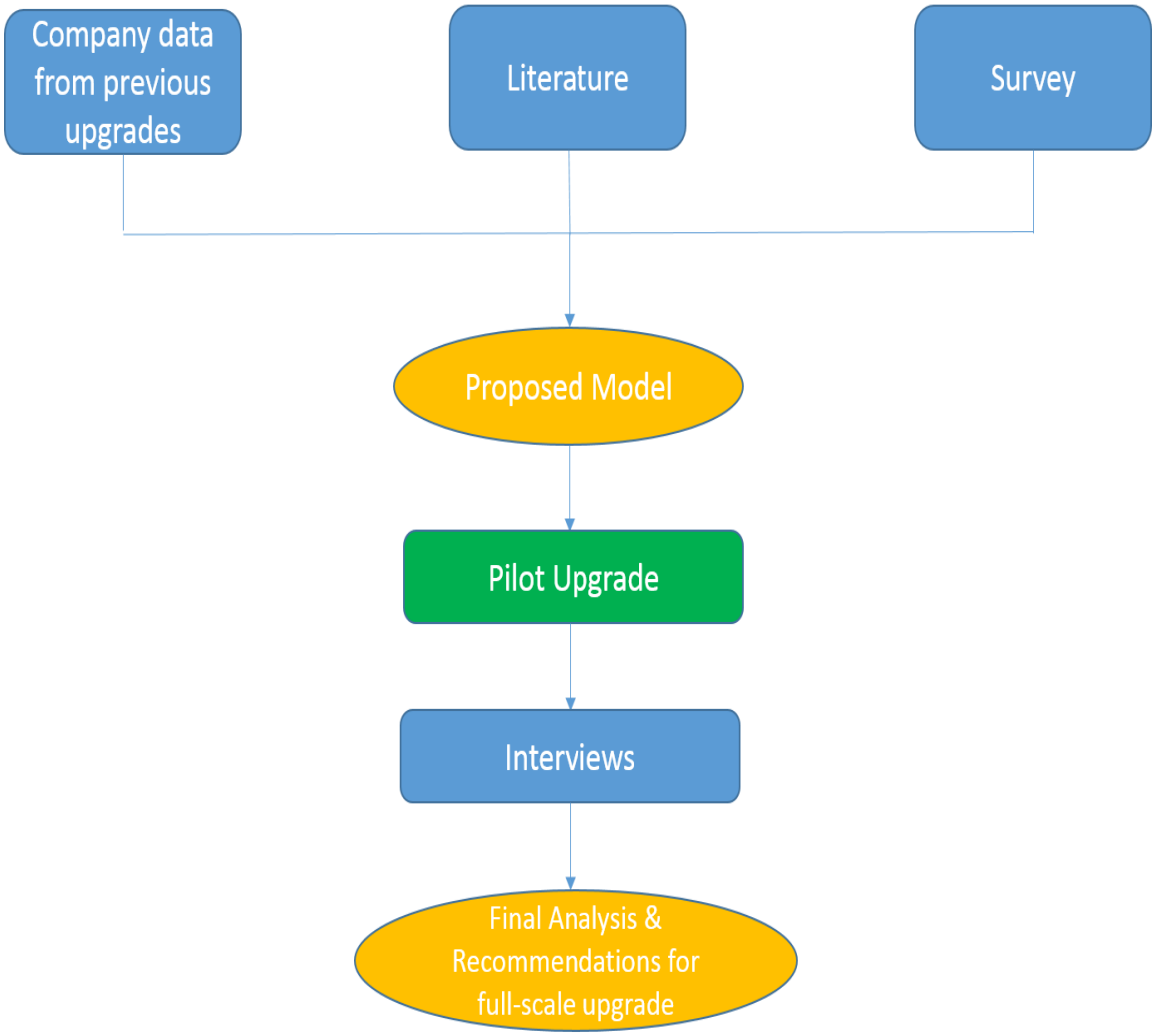

Figure 3. Research model of the master thesis

3 Current State Analysis

3.1 Current system introduction

Tekla B&C unit is using Microsoft Dynamics CRM 3.0 as its main business support system for customer information management in its marketing, sales, logistics and service processes. It is globally used, but with a long history, there are many shortages and there is clear need for system upgrade

Microsoft had released version 3.0 of Microsoft Dynamics CRM in December 2005. While the application was a considerable leap from the previous v1.2 and provided a new set of platform like functionality in addition to traditional CRM features, it was nevertheless only the second major version of a very young product. Unlike the ERP products in Microsoft's Business Solutions portfolio (later re-branded as Dynamics), CRM was in practice designed and built from ground up by Microsoft's internal staff based in Redmond. Developed as a pure .NET 1.1 web application, the extensibility options of CRM 3.0 were remarkable at the time, but the core functionality and configuration options for customer solution management still left a lot to be desired.

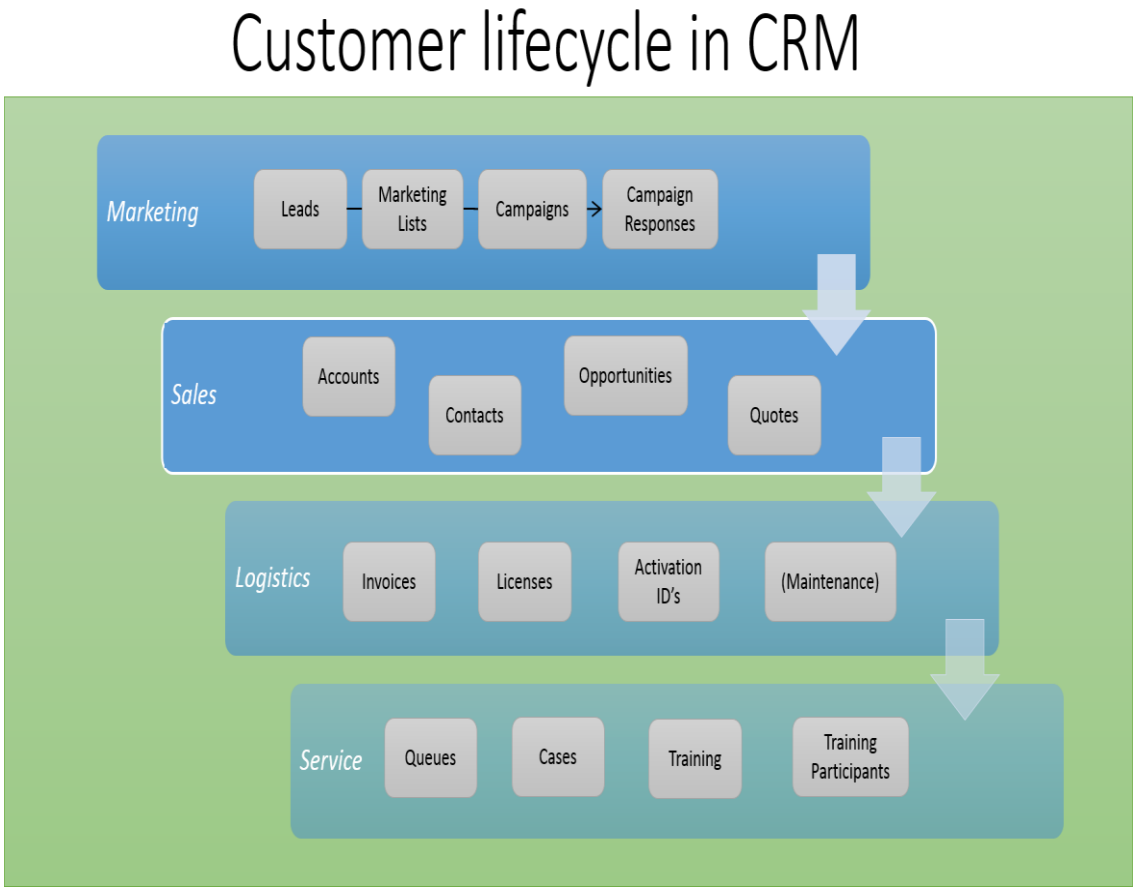

Figure 4. CRM Customer lifecycle

In December 2007 Microsoft released the version 4.0 of CRM. The new version included many enhancements that were identified to be valuable for Tekla's use cases for the application: many-to-many relationships in the entity data model, a whole new workflow engine built on Windows Workflow Foundation, multi-currency support, to name a few items. During 2008 Tekla was rolling out two significant system integrations, the integrated logistics process with FLEXnet licensing (Order-Delivery Renewal Project) and the launch of new Web and Extranet sites built on SharePoint 2007. Due to the resources consumed by these projects, the new requirements imposed on CRM system data model and functionality by the integration orchestrations built in MS BizTalk, as well as the changes in the support organization, the upgrade planning for the latest CRM version could not be initiated right at the product launch.

Starting from 2006, Tekla B&C had deployed the basic CRM 3.0 functionality to approximately 400 of its employees globally. Many of the operational tasks performed by personnel working in the direct customer interface were now fully dependent on the CRM

system: email marketing campaign execution, sales funnel forecasting, product delivery, customer service incident management etc. While the groundwork for developing process automation was in place, the ability to implement functionality required by the business process actors was considerably limited by the lack of key features in v3.0, which were also known to become available through a version upgrade, thus undermining the business case for pursuing custom solutions with proprietary code. The market share of Microsoft Dynamics CRM was also growing at a greatly increased speed after the launch of 4.0, which caused many of the 3rd party solution vendors to target their add-ons solely on the latest platform version, leaving the customers with CRM 3.0 without the possibility to leverage these packaged extensions when managing their CRM solutions' lifecycle to meet user requirements.

3.2 Identifying needed upgrades

Most important objective for the project is to maintain and improve Tekla B&C's ability to operate, develop and enhance and its customer information management solutions for its existing and future processes.

There are several motives for the project like cost savings, resourcing issues, obsolete technical environment vs. new improved technology on offer. In addition, present system and process ownerships are not totally clear. These relations should be defined during the project planning phase.

While the move from version 3.0 to version 2011 would in theory be an upgrade of the system already in use, in practice the project would be a migration rather than an upgrade. Microsoft was unlikely to support a direct upgrade path from 3.0 to 2011 [8] Furthermore, the backward compatibility of 3.0 callout architecture and web service endpoints was expected to be dropped in the new version. The technical differences between a .NET 1.1 generation application and the latest .NET 4 offering would obviously become so significant that solution would in practice have to be re-built.

The need to start from a clean slate and build everything almost from scratch also presented an opportunity to perform changes on the data model. Since much of Tekla B&C's current entity attributes have been inherited from the CRM 1.0 deployment originally performed in Tekla, Inc., there is a wide range of legacy solutions and workarounds currently in place that would not be necessary even in CRM 3.0. Therefore the requirement to re-

create the whole database schema introduces the logical moment of discontinuity in which changes can be implemented. Whatever legacy will be carried over from the previous schema and processes will most likely need to exist in production use at B&C for easily the next five years, until the next system upgrade.

The main motivation factors for Tekla to do the CRM upgrade include the following:

- Obsolete technical environment
    - CRM 3.0 is no longer supported from Microsoft
    - There are known errors in operating systems (Win7) and in web browsers (IE9, IE8 and older versions) that influence to the working and performance of CRM 3.0
    - It is impossible to deliver presented business requirements due the limitations of the current system
- Resource issues
    - There is a continuously increasing workload for user support due the CRM3
    - Deploying new customizations or upgrading/correcting old customizations need a massive use of resources.
- Cost savings
    - New version means less day-to-day environment support work
    - There are improvements in licensing terms
    - There is a reduction in need of third party add-ons
- Improved technology
    - New version offers clear performance improvements
    - There is better processes support and development environment
    - It is easier to develop the system further
    - New version includes improved reporting possibilities

3.2.1 Scope

The tasks include support of the above-mentioned processes with the Microsoft Dynamics CRM software, as well as the definition, design, execution and implementation of the required functions as described in this project plan.

Process definitions will be specified together with the project group. Process definitions include the following processes:

- Marketing
- Sales process
- Logistics
- Customer support

Building CRM 2011 with the features, customizations and components listed from CRM 3.0. All features and processes will be defined together with Tekla. Project group will consider if some features could be implemented without coding by using CRM2011 basic features. Integrations are built from CRM 3.0 to CRM 2011 with the same functional approach.

Data migrations are carried out by account or by country level. CRM 2011 rollouts and data migrations have to be jointly planned. User list views will not be converted from CRM 3.0.

Performance analysis of Dynamics CRM will be executed together with Microsoft. The goal for performance analysis is to get the necessary information for decision makers regarding the amount of future CRM 2011 instances in Tekla. Performance analysis will dictate the possibility to build only one CRM 2011 instance for worldwide use. The CRM system upgrade best practices will be followed. [9]

The scope of performance analysis will include:

- Severs
- Infrastructure
- Networks
- SQL-cluster

Also Internet connections testing will be done separately.

3.2.2 Exclusions

The following are excluded from the scope of the project:

- Acquiring software licenses
- Installing Microsoft Dynamics CRM Outlook clients on the workstations

3.3 CRM 2011 functional overview

The company has identified the following main functionalities that could be utilised by switching to CRM 2011 [10]:

1. Dashboards

The dashboards have been included into CRM 2011. These dashboards will allow the company's group to construct multiple sets of charts and grids that make the most sense for the business. Several dashboards are shipped out of the box.

2. Charts

There is ability to view charts all through the application. These charts can be created and customized with the appropriate security roles.

3. SharePoint Integration (Document Management)

Ability to easily configure CRM to allow for SharePoint document management within CRM forms. SharePoint 2007 and 2010 are supported. Microsoft SharePoint 2007 versions will be shown in Microsoft Dynamics CRM inside an iFrame, while Microsoft SharePoint 2010 can be shown with rich integration features if the Microsoft Dynamics CRM List Component is installed.

4. Auditing

The company could track changes made to records for many purposes; these include maintaining security, examining the history of a particular record, documenting modifications for future analysis, and record keeping necessary for regulation compliance. Auditing allows customers to effectively track creates, deletes, and updates.

5. Field Level Security

Allows administrators to set permissions on each field to allow a user to Update, Create and/or Read that specific field.

6. Multiple Forms

Microsoft Dynamics CRM 2011 introduces the capability to define more than one main form for each entity: use multiple forms to create forms that are customized to specific roles or tasks in the organization; use security roles to control which groups will be able to use the forms you create.

7. Team Ownership

Teams in CRM 2011 can own records. It's also possible to assign security roles to teams which will allow customers to manage overall security at a team level, rather than a user level.

8. FetchXML Reports

In CRM 2011, it is possible to create both FetchXML reports and standard SQL RS reports. Fetch-based reports use the Microsoft Dynamics CRM proprietary FetchXML queries to retrieve data for reports. Because these reports use FetchXML queries instead of SQL queries, they do not need to use the filtered views in the Microsoft Dynamics CRM SQL database to retrieve data for reports. Since FetchXML reports no longer have to use filtered views in order to honor CRM security, the time that it takes to execute these FetchXML queries should decrease quite a bit.

9. Data Import Wizard (and reimport)

The Import Wizard facilitates a smooth data import process by providing an easy way to migrate your legacy data into the Microsoft Dynamics CRM System. Several new features in CRM 2011 are:

- Support for CSV, TXT, XML, or ZIP file types
- Support for Option Value Mapping (aka picklists)
- Support for Lookup Mapping
- Support for a single source file with multiple entities (Account & Contacts)
- Support for Bulk Update of records via Import Wizard

10. Get Started Pane

It's best that CRM users be given some training before using the application. New in CRM 2011 is the "Get started pane". The pane provides your users with relevant information for the grids they are viewing.

11. Connections

In Microsoft Dynamics CRM 2011 one can create and view the relationship between two records by using Connections. One can also connect a lead to the account that referred it to you, connect one contact to another to show employer and employee statuses, or connect a record to yourself and identify each as a colleague, friend, employee, or other relationship. The Connections feature is available for most CRM entities.

12. Attachments & Bulk Emails

It's now possible to include attachments when sending bulk email. Only one actual attachment will be stored in the database when sending out multiple bulk emails with an attachment.

13. Negative Pricing

The Negative Pricing feature allows for negative quantities, amounts, and negative prices.

14. Enhanced Decimal Precision

Decimal precision can now be set based off of the Pricing Decimal Precision (System Settings), Currency Precision (set at the currency level), or Field Precision (set at the field level).

15. Opportunity Enhancements

Microsoft Dynamics CRM 2011 allows you to create Write-In Products on the Opportunity and also to create a Quote, Order, or Invoice directly from the opportunity.

16. Sales Goal Management

Sales Goal Management is for users and managers who need to manage and monitor their achievements. They need to monitor things like how many units were sold and how much revenue was earned. The monitoring periods can be annually, semiannually, quarterly, monthly, or every four week period.

17. Recurring Appointments

The recurring appointment type is available in CRM 2011 as a new activity type.

18. Dynamic Marketing Lists

In Microsoft Dynamics CRM 2011, you can specify a query in the Marketing list. Depending on the list type, those Leads, Accounts, or Contacts that fulfill the criteria are automatically added as the members of the list, whenever the list is used. This is a change from Microsoft Dynamics CRM 4.0 where users can have only a static list of members.

19. Queue Enhancements

Microsoft Dynamics CRM 2011 brings many enhancements to queues. These enhancements include:

- Queues are securable through role privileges.
- Default queue added to Users and Teams.
- All entity types can be enabled for queues.
- The Queue entity can be customized.
- Queue and Queue Item are supported in Processes "Workflows".
- Separation of Queue Item assignment "Working On" and record ownership.

20. Solutions (Managed & Unmanaged)

Solutions are the new functionality in CRM 2011 that will allow you to move your customizations in and out of your CRM organizations. Solutions are used to author, package, and maintain a single unit of software that extends Microsoft Dynamics CRM 2011. You

can distribute your customization work as Solutions so that organizations may use Microsoft Dynamics CRM 2011 to install and uninstall the business functionality as defined by the Solution.

21. Bulk Record Deletion

Allows users that hold the correct security role to bulk remove data from the CRM system via an advanced find-type tool.

22. Processes

Processes are either workflows, or dialogs. For the most part, workflows have the similar look and feel to CRM 4.0. A dialog, when presented to an end-user can be a conversation and a guide, which helps achieve a set of tasks in a standardized and repeatable fashion. Dialogs enable any user (sales, marketing, support) to interact with the customer in a standardized manner using a script as a guide to enable an effective customer engagement. Since work typically involves complex interconnected tasks, a script detailing the tasks will be used as a guide to complete the tasks.

23. IFD/Claims Authentication

Since the release of CRM 4.0, a number of developments have happened in the Industry around standards based Authentication. A number of Authentic protocols have matured since CRM 4.0, WS-Trust , WS-Federation, and SAML 2.0(protocol) . Microsoft Windows Server released Claims based access platform where it added support for these protocols. Microsoft Dynamics CRM 2011 discontinues the 4.0 IFD design and snaps into the new Claims based options. After Claims is properly enabled in your environment, it will still be necessary to go through the CRM IFD setup steps to make your CRM application accessible outside of your network.

24. Global Option Sets

Microsoft Dynamics CRM 2011 now enables the use of Option Sets (previously picklists) on multiple entities, called Global Option Sets. Global Option Sets are sets of values that are available to be re-used.

25. CRM Update Rollups & Windows Update

CRM 2011 will make Update Rollups available through Windows Update. If using Windows Update or WSUS to push out updates, this functionality will be very beneficial.

26. Dynamics Marketplace

The Microsoft Dynamics Marketplace will help customers discover applications and professional services that extend the value of Microsoft Dynamics. The Microsoft Dynamics Marketplace will be accessible directly from within Microsoft Dynamics CRM 2011, making it even easier to find solutions.

4 Theory

4.1 Conceptual framework

The conceptual framework for literature review is done based on the years of research already done in the field of CRM, specifically based on the key factors for a successful CRM system upgrade and the risks associated. The outside research is then correlated with information obtained from company internal data from previous upgrades and lessons learnt during those upgrades. The conceptual framework is explained in detail in figure 5.

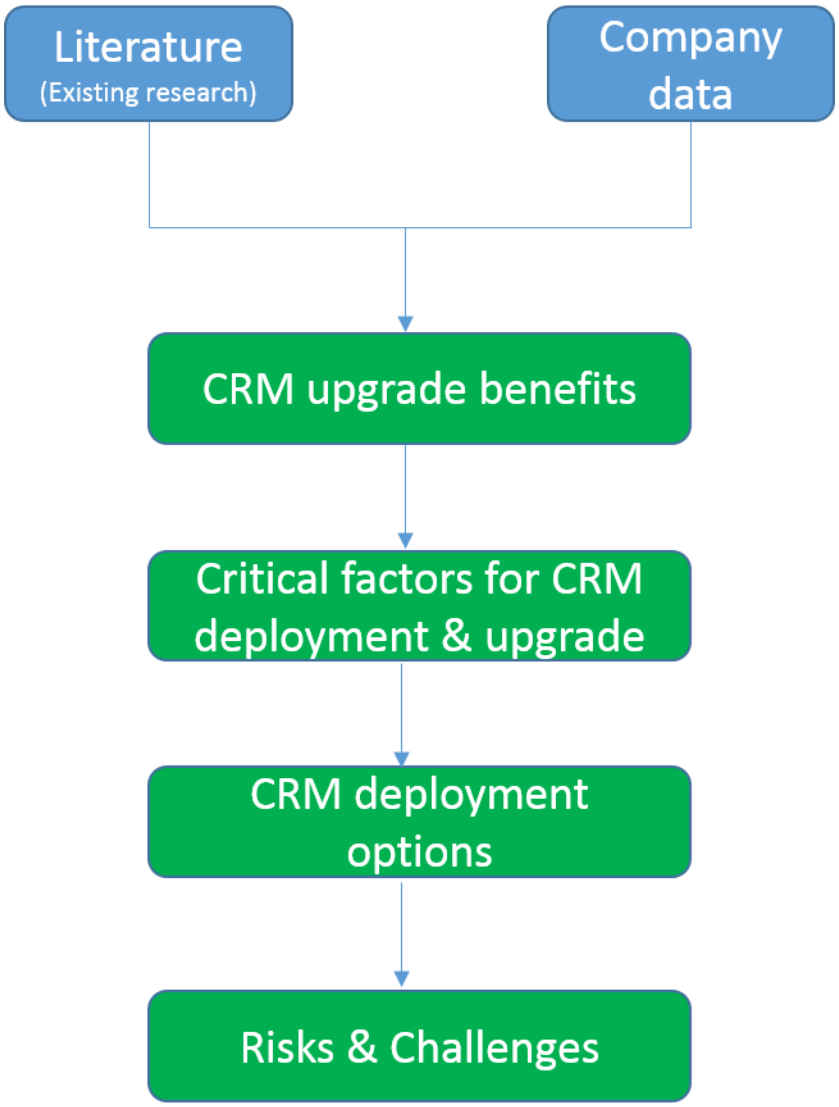

Figure 5: Conceptual Framework for literature review

4.2 CRM upgrade overview and benefits

Tekla has been using Microsoft Dynamics CRM almost 10 years. The current version of Tekla B&C CRM is highly integrated and customized. Tekla's plan is to take CRM2011 into use and gradually move CRM3.0 users to use the newest version of Microsoft Dynamics CRM. The planning for CRM update project started at the beginning of 2011.

There are multiple new features and updates available in CRM 2011 compared to CRM 3.0. The main feature level comparison is shown in table 1.

FEATURE	MS CRM 2011	MS CRM 3.0	DETAILS
Graphical User Interface – Ribbon Bar	Yes	No	The graphical user interface in MS CRM 2011 has changes to the new standard look & feel, Like the Outlook 2010 Or Office 2010, with the ribbon bar.
Charts	Yes	No	Within MS CRM 2011, charts can be created, Almost all entities like account, contacts, leads, opportunity & others have their dedicated charts which can be viewed while at the grid view of that specific entity, User based charts can also be created. Chart formats provided are Column charts, Bar charts, Area charts, Line charts, Pie charts & funnel charts.
Dashboard	Yes	No	The dashboard entity is a place where multiple charts can be views on a single page.E.g. I can have a dashboard page for "Sales Performance" within that single page I can see charts in different formats like Column charts, Bar charts, Area charts, Line charts, Pie charts & funnel charts for leads, opportunities, Quote&other entities too. All in 1 glance on a single page.
Dialog	Yes	No	Dialogs can be created within MS CRM 2011,NOTE – in the vanilla product the dialogs have to be executed manually, If you want it to be automatic, Will need to write a script for the same
Field level security	Yes	No	In MS CRM 2011 now you can create security on field level i.e. giving rights for "Read" or "Update" or "Create"NOTE – Field level security can be applied to ONLY the "NEW' fields you create on the system, The existing fields of the system will not allow you to use this option
Goals	Yes	No	MS CRM 2011 has got a new entity call "Goal", This new entity can be used to create & track targets. The targets can be for 2 types i.e. "Amount" Or "Count".E.g. Sales persons have an amount target & the same need to be created & tracked on the system, So that "Amount Type", If you have a telemarketing team & you have given each individual person in that team a target of making "30 call" in a day, that's a "Count Type"
Audit	Yes	No	This option allows keeping a track of a fields i.e. IF THE AUDIT IS ENABLED, Then you will be able to see the previous data that was present in the fields, What was it

			changed to, The user who made the change & the date & time too.
Personal View	Yes & improved	Yes	A user can create his own view on the system, in 4.0 the view could not be set as a default view which is now possible in 2011 & also the same view can be shared by other users too, If the right are given
Mobile Form	Yes & improved	Yes	4.0 also has a mobile form but in customization it was not shown separately, in 2011 it is
Solution Management	Yes	No	After you customize the system, you might want to export only a particular part of it & not the entire customization, It's now possible to do the same in MS CRM 2011 by using the "Solution Management" option
Data import	Yes	No	In MS CRM 2011, now a zip file can also be imported
Filter look up	Yes	No	In MS CRM 2011, now a look up can be set to display information based in a filter.E.g. When you are relating an account entity with a contact entity the field is a look up, you can filter it to show ONLY the contacts that a related to the account.

Table 1: Feature Level comparison of Microsoft CRM 2011 vs CRM 3.0

4.3 Critical factors impacting CRM deployment and upgrade

Multiple research have shown that CRM implementation depend on multiple factors apart from the obvious technological factors. The concept of affordance, originally introduced by Gibson [11], refers to the adaptive property of objects and structures for humans (and for other organisms). Gibson's theory of affordances emphasizes people's perception of whether an action is possible or not within a given setting.

The paper by Finnegan & Currie [12] draws on Gibsons concept of affordance to explore the CRM practices and to develop a multi-layered approach to CRM implementation which depends on the aspects of culture, process, people, and technology.

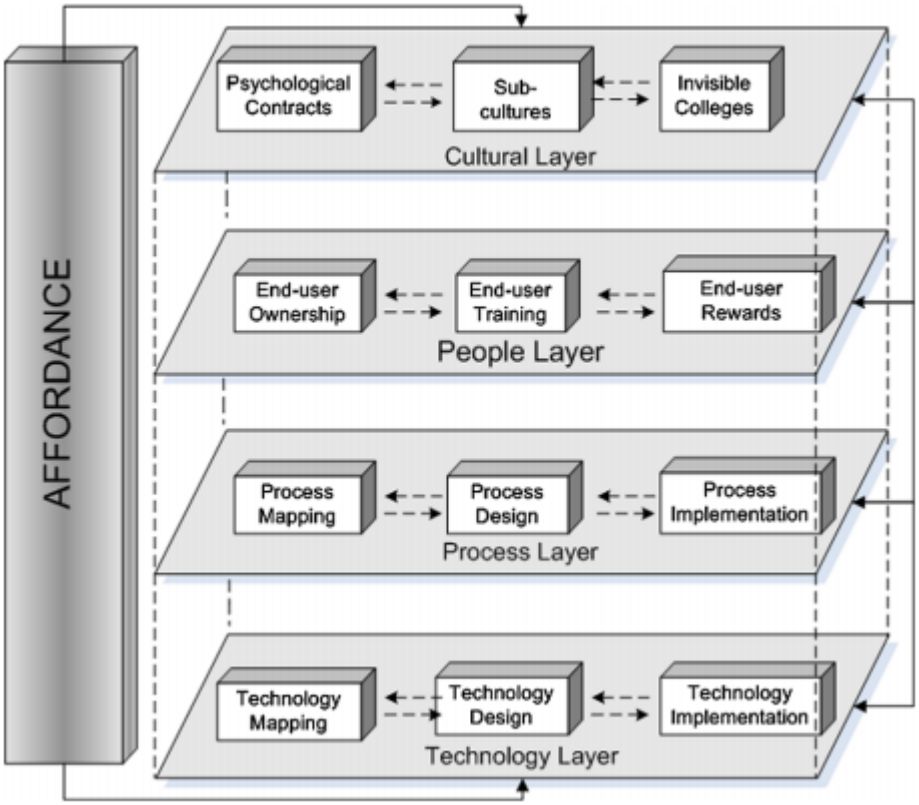

Figure 6: Multi-layered model of CRM strategy implementation [12]

IT issues related to CRM deployment and upgrade revolve mainly around infrastructure, staffing and cost. Here are some factors to consider while planning CRM deployment [13]:

Staffing: All options demand some staff expense. An on-premise installation will require server administration as well as software installation and custom programming. This is clearly the most costly option, but it also delivers the most customized results.

SaaS vendors promote their products as being easy to use and to customize, but few IT organizations want to put programming in the hands of business users. If your SaaS installation requires extensive customization or legacy integration, you'll need to factor this into your staffing costs. Some SaaS implementations also require extensive configuration before deployment. Be sure to ask vendors about these options, negotiate service-level agreements carefully, and budget appropriately. Finally, training and helpdesk support also consume resources. For an on-premise deployment, these costs fall almost entirely on the IT organization and its contractors, but even a SaaS solution may require

IT support. Again, it's a good idea to negotiate these costs and responsibilities with a service provider before making a commitment.

User Adoption: Both on-premise and SaaS CRM software usually come with robust documentation, as well as online tutorials, wizards and comprehensive help screens. Most users can be up and running on basic functions in a matter of an hour or less.

User adoption and associated training costs are mainly a function of company-specific requirements. A system that is heavily customized to meet special requirements may require dedicated training programs. This is true in any deployment scenario, but an on-premise installation provides the greatest degree of customizability, particularly if integration with other internal applications is required. Traditional on-premise training is usually handled by an internal staff, which may be less expensive than using vendor or contractor resources.

Extensibility: A few years ago, this was considered a strength of on-premise applications, but advances made by SaaS vendors have brought their products closer to parity in this area. The greatest advantage of on-premise solutions is the ability of IT organizations to integrate them with legacy applications, particularly those that are unique to the business. On-premise applications may also be easier to integrate into dashboards or standardized workflow systems that contain significant amounts of custom code.

Budget: Although on-premise deployments generally cost more, much of the cost of servers and license fees is allocated and depreciated as a capital expense. This may be desirable for companies that want to amortize the cost of their CRM project over several years. In contrast, SaaS solutions are usually paid out of operating expenses and those costs may vary widely as the number of users change. If you choose SaaS, negotiate a price schedule you can live with over a period of years.

Control: Some companies are reluctant to give up control over a precious asset like customer data. Although most SaaS vendors offer excellent security, backup and data protection, organizations must still make a leap of faith by putting data in the hands of a third party.

Many organizations also want control over downtime and upgrades. Integration projects may require special testing and training on a schedule that the IT organization needs to

control, or projects may need to be released in stages to production. SaaS vendors are usually willing to preview planned upgrades with its customers. However, they have the needs of many customers to consider, so the availability of staging sites should be negotiated carefully in advance.

While many users are delighted to log in and find new features available to them, IT organizations aren't always comfortable with this idea. If control is an important issue, then an on-premise or single tenant SaaS solution provides extra peace of mind.

4.4 CRM deployment options

There are a few basic options for CRM deployment that are being used in the organisations for quite long time. Tekla has an “on-premise” CRM installation mainly due to data security, flexibility of use and on-site support. But for the next upgrade, the company is open to new architectures if they meet the aforementioned criteria.

Here are some of the well-known deployment options used by the companies [14] and recommendations for the companies to use the option based on their requirements:

- On-Premise CRM
- Vendor Managed On-Premise CRM
- Multi-Tenant Software-as-a-Service
- Single Tenant Software-as-a-Service
- Hybrid Combination

Deployment Model	License Model	Location	Customer Control	Financing Model
On Premise	Perpetual	Customer	Maximum	CapEx
Vendor Managed On Premise	Perpetual	Vendor	Medium	Both
Multi-Tenant	Subscription	Vendor	Minimum	OpEx
Single Tenant	Subscription	Vendor	Medium	OpEx
Hybrid	Both	Both	Varies	Both

Figure 7: CRM deployment options at a glance [14]

4.4.1 On-Premise CRM

In a typical on-premise deployment, an organization buys or leases infrastructure, including hardware, operating systems, databases and other system software, and installs a packaged application in its data center. The organization owns the entire package and is free to customize it as needed. Furthermore, the organization has complete control over the infrastructure and data.

Advantages:
For organizations that need complete ownership and control over every aspect of the deployment and maintenance of the CRM application and its infrastructure, on-premise is the way to go. Organizations that choose this option can customize the deployment as they wish. Organizations are also in sole, complete control of data storage and protection. Given the years of development invested in on-premise CRM, this deployment option is still very powerful and feature rich. Some CRM providers offer highly customized vertical industry solutions that extend on-premise deployments with a level of sophistication that are not yet available with SaaS offerings. While SaaS deployments

have grown significantly in user count, on-premise CRM continues to excel in scalability and high volume environments like call centers. Finally, organizations have perpetual use of the software, unlike the term licensing model with SaaS.

Considerations:
Historically, the primary downside of an on-premise deployment has been cost and time. However, recent advances in deployment technology, particularly rules-based configuration, have reduced installation and deployment times significantly. On-premise is still a more expensive option than SaaS in the short term, but it is no longer orders of magnitude more expensive. What's more, on-premise deployment can actually be the least expensive option over time because organizations avoid ongoing monthly fees.

Recommendation:
Choose on-premise if you have an interest in controlling the infra-structure, have very specific business requirements that need customization, and have in-house IT infrastructure and development resources to maintain an on-premise deployment. This option is also a candidate for organizations in highly regulated industries with stringent data privacy and protection policies.

4.4.2 Vendor Managed On-Premise CRM

This approach is identical to that outlined above except that a vendor provides most or all of the operational support for the application at its hosting site. The organization preserves all the functionality of the application and the ability to customize to a certain extent and integrate with legacy systems with a high degree of control. Modifications may be done with a mix of internal and vendor-supplied resources.

Advantages:
This option has all the advantages of the traditional on-premise approach as well as the added advantages of shorter deployment times and access to outside expertise. Because th e application provider has extensive knowledge and experience with the CRM software, the organization ’ s learning curve s are shorter and users can be up and running in less time than with a traditional on-premise deployment . The organization can focus on using, enhancing and extending the application, while the vendor focuses on the operational aspects of monitoring, patching, infrastructure, database, middleware and application layers. Robust security, high availability and best-practice performance

are “table stakes” in these contracts. The vendor may also be able to im-prove functionality with custom and industry-specific deployments, without extensive ramp-up time.

A robust governance process keeps the CRM application aligned with the needs of the business. Extensive reporting on service levels, periodic review of service level performance, project status, changes and innovation activities provide a high level of control and minimize planned and unplanned outages.

Costs are generally fixed, so budgeting for these services is predictable, often on a per-user basis. The vendor takes the risk and the organization benefits from the vendor’s commitment to service levels without having to manage resources to achieve them. Top-performing vendors us e virtualization and task automation to deliver cost-effective service.

Considerations:
The extent to which resources are shared, and how far organizations depart from standardized implementations, are the biggest cost drivers of this approach. The greater the level of customization and infrastructure investment, the higher the cost. Vendors may also need additional time to learn the specific needs of the business. Additional management overhead may be involved to coordinate the activities of external and internal staff.

Recommendation:
For users who want the advantages of on-premise CRM, complete infrastructure control, and the highest levels of security and data protection, the vendor managed on-premise CRM option deserves serious consideration. Organizations should negotiate service agreements carefully to be sure they have the scope of ser-vices they need and a clear picture of the required investment.

4.4.3 Multi-Tenant SaaS

In a typical SaaS deployment, a vendor provides the application as a service that is licensed by multiple organizations. All aspects of infrastructure management and application delivery are handled by the service provider, conforming to a service-level agreement negotiated with the organization. The SaaS market is growing rapidly, with hundreds of companies delivering all kinds of applications this way. Gartner expects

SaaS sales to account for 33% of the total CRM market by 2015. CRM has been a prime driver in the SaaS market because basic CRM functions apply to many businesses and rapid deployment is attractive to companies seeking immediate sales impact.

Advantages:
Multi-tenant SaaS is the ideal option for organizations with limited capital assets , variable work force needs , or limited IT resources . There is almost no up-front investment; costs are usually borne as an operating expense, and users can be added or dropped as business demands, with a corresponding impact on costs. Typical SaaS deployments are faster than on-premise by eliminating certain tasks, such as the need to purchase physical hardware and deploying software. Modern SaaS applications housed in world-class data centers provide superior performance and availability. SaaS also offers a best-practices approach to deployment because vendors learn from managing a large number of users, each with different needs. Upgrades and fixes are done quickly, minimizing maintenance for IT staff.

Considerations:
Organizations give up some control over upgrades, enhancements and planned downtime. Service-level agreements need to be negotiated carefully to minimize surprises and disruptions. Data ownership issues also occasionally have been an issue when data is hosted off site. Again, careful attention to contractual obligations is required. SaaS implementations also can carry a hidden cost: While per-user pricing is attractive in the short term, large installations might be more expensive over time than on-premise solutions.

In the past, integration had been cited as a primary deterrent for adopting SaaS. However, the SaaS industry has made giant strides in improving integration options in recent years.

Recommendation:
If flexibility and speed of deployment are important, then SaaS is the right solution for you. SaaS also makes sense if different solutions need to be deployed in different departments. For organizations seeking maximum flexibility and long-term cost control, on-premise solutions may still be the better bet. However, SaaS is a popular option for organizations that want fast results at a relatively low start-up cost.

4.4.4 Single Tenant SaaS

Although multi-tenant SaaS implementations offer best-of-breed security and reliability, some organization s demand an extraordinarily high level of control. This may be a function of regulatory requirements or scheduling demands that limit scheduling flexibility for planned downtime. Historically, their only option has been a full on-premise deployment of a packaged application. But vendors are beginning to innovate with private versions of their SaaS products that deliver the cost and availability benefits of a hosted solution while adding a level of customer control and greater flexibility with a dedicated stack.

A single tenant SaaS solution is identical in every way to a multi-tenant model with the exception that the single tenant SaaS application is run on an infrastructure that is dedicated to one organization. This includes servers and software and may also extend to bandwidth. A key benefit of single tenancy is that, because they are on a dedicated stack, organizations can determine upgrade and maintenance schedules within a window of time.

Advantages:
The single tenant option opens the SaaS option to a class of organizations that wouldn't consider it otherwise. These include organizations in highly regulated or security-conscious industries, where any kind of shared-space deployment would be considered too risky. These organizations can get all the advantages of SaaS–rapid implementation, limited need for IT resources, and expert service – while maintaining some level of control and flexibility.

Considerations:
The cost of this option is understandably higher than that of multi-ten-ant SaaS. Vendors must cover the additional overhead of providing dedicated technology and staff, so the per-user charges and minimum user guarantees of a single tenant option will almost certainly be higher than those of a multi-tenant SaaS deployment. Organizations also can't expect to have as much control over upgrades and customization as they would with an on-premise deployment.

Recommendation: For organizations that couldn't otherwise consider a SaaS solution, this option could be a viable alternative. I t has all the benefits of SaaS without the perceived risks. However, this option is not a replacement for vendor managed on-premise deployments, which offer organization s more control in a number of areas while still benefiting from a hosted deployment model.

4.4.5 Hybrid Combination

Choosing a CRM solution involves making tradeoffs in flexibility, customizability, cost, convenience and speed of deployment. But this choice is not necessarily an either/or decision. A hybrid deployment option may satisfy broader organizational requirement s by delivering the best features of SaaS and on-premise solutions with few of the downsides.

A hybrid deployment uses both on-demand and on-premise solutions with a high degree of back-end integration and database sharing. Users mix solutions according to their needs and may even intermingle deployment models within the same department or workgroup.

Advantages:
Organizations can deploy the CRM approach that makes the most sense for their business needs. Workgroups or business units that are transaction intensive, such as call centers, or business units that need a high level of customization may choose an on-premise option, while highly collaborative field representatives or occasional CRM users can opt for the on-demand model. In all cases, users share common customer information.

Each business function may choose the deployment option that makes sense for its particular needs. This puts more decision-making capability in the hands of the business units. Features are matched to user requirements so they can configure the system they want locally.

Considerations:
A hybrid deployment isn't right for everyone, and businesses should carefully assess their long-term needs before choosing this approach. Large, diversified organizations are most likely to benefit from a hybrid approach because their needs are so variable.

However, smaller organizations may find the hybrid model attractive as a way to "bridge" into a full on-premise solution or vice versa.

Recommendation:
For organizations that are looking for maximum flexibility and business alignment, the hybrid option may be the best fit. A hybrid deployment provides organizations with the highest degree of control over infrastructure, security concerns, costs and configuration. Because individual departments can choose between on-premise and on-demand models, they can fine-tune their configuration to match budgetary and strategic needs. They can also locate customer data where they wish.

5 Model Proposal

5.1 Data Collection and Analysis

Main data source for the collecting the feedback for the future CRM upgrade was face-to-face interviews with the CRM upgrade stakeholders. The interview was based on the survey questionnaire which could be found from Appendix 1. The questionnaire was shared with the respondents in advance (1-2 days before) and then a meeting was setup to discuss their opinions in detail. In total, there were 3 respondents – one from the steering group, one leading the CRM upgrade and one CRM team member. All the respondents were selected based on their previous experience with CRM upgrade and knowledge about CRM system in the company.

The analysis of the feedback is done in detail in section 6.2. The role of top management in CRM implementation and upgrade projects is very crucial. This was specifically stressed in the questionnaire and in the interviews. The respondents overall rated the management support to be of good level. The detailed answers related to management support for CRM upgrade project are consolidated and highlighted in table 2.

Sr. No.	Question	Average Score (Scale: 1-7 where: 1 = strongly disagree, 4 = neither disagree nor agree, 7 = strongly agree)
1	Top management is interested in CRM	6
2	Top management understands the importance of CRM	6
3	Top management supports CRM	5
4	Top management considers CRM as strategically important	6
5	Top management understands CRM opportunities	4
6	Top management pressures my office to work with CRM	4
7	CRM is regarded as high priority by top management	5

Table 2: Top Management related opinions from the survey

The consolidated feedback related to previous CRM upgrades and problems realized are collected during personal interviews is described in table 3. The interviews were of variable duration ranging from 45 minutes to 1 hour. The respondents were quite clear regarding the opinions and answers to the questions posed during the interviews. The feedback, therefore, was quite easy to consolidate.

During the interviews, it was clear that the company needed a CRM upgrade and the issues with the outdated version of CRM being used in the company. There was a good amount of management support and no direct or indirect resistance to the CRM upgrade.

Sr. No.	Question	Consolidated Answers
1	Number of CRM Users	300+
2	Importance of CRM implementation	Very Important
3	Company Objectives dependent on CRM system	Sales Process, Licensing, Marketing, Finance, Services etc.
4	Main reasons for doing the upgrade	Old CRM version, slow speed, unreliable, customization/development difficulties, high cost, resource issues
5	Previous problems in upgrade	Testing problems, US CRM down for 2 days
6	Resistance for planning CRM upgrade	No
7	Main challenges in previous upgrade	Small team, data migration, large data set, less resources, other tasks and development needs, working with external consultants
8	Average time for previous CRM upgrade (from planning to completion)	2 years

Table 3: CRM upgrade opinions from the survey

The challenges recognized by the respondents comprised of IT, management, people issues etc. One clear challenge that was clearly highlighted by every respondent was regarding using the outsourced services i.e. working and managing the external consultants. The main issues related to working with external third party consultants highlighted were related to communication, contract management, quality of delivery and high budget.

5.2 First version of the upgrade

There are multiple CRM upgrade strategies available and studies for multiple years. The upgrade strategy differs from company to company depending on the requirements. The issue is that CRM systems in use today, often do not fit into one of the standard upgrade paths. [15]

During the business case planning inside the organization, the following options regarding the CRM upgrade are identified as shown in table 4.

ID	CRM Upgrade option	Details
A	Nothing	Do nothing
B	Delay the upgrade	Refuse to proceed with platform upgrade before business processes and targets are clarified
C	Limited CRM system upgrade	Upgrade current CRM system to up-to-date version without significant changes in the data structure and management (only mandatory changes executed)
D	Full CRM system upgrade	Upgrade current CRM system and business logic inside
E	CRM platform re-build	Rebuild of the full system in a upgraded platform
F	New technology CRM	Re-implement a different CRM platform technology altogether

Table 4: CRM upgrade options of the case company

Following scopes are outlined from considered alternatives of upgrade model:

The following scope considerations are outlined based on the possible considerations of the CRM upgrade model:

- Minimum effort upgrade (Alternative C)
    - Simply upgrade the platform without re-design, replace only incompatible custom functionality
    - Carry over old legacy and data by moving from CRM v3.0 -> v4.0 -> 2011

- System renovation (Alternatives C/D)
    - Re-design existing functionality to make best use of new platform functionality
    - Adjust process specific functionality to meet requirements communicated by business or users

- System expansion (Alternatives C + D)
    - In addition to the previous option, implement completely new functionality and integrations to complement existing solution

- CRM as a strategy (Alternatives B + (C+D)/E)
    - Start by re-evaluating the strategic role of customer relationship management for Tekla B&C and the achievements with current approach during the past 10 years
    - Restructure the organization by assigning and enforcing process ownership

It is also identified that the following processes the ownership model needs to be defined:

- Sales (ownership not defined)
- Services (ownership not defined)
- Marketing (B&C Marketing)
- Logistics (B&C Business Administration)
- Integrations (ownership not defined)

5.2.1 Phase options

Following CRM upgrade project phasing options are possible:

- Big bang - all environments are updated simultaneously at once with the pros and cons highlighted in table 5.

Pros	Cons
Shortest delivery cycle, fastest way to get the system running and gain afterward savings	Most complicated project entity
	Needs more resources during deployment
	Biggest risks for delays and costs

Table 5: Big bang CRM upgrade – Pros and Cons

- One server and business area instance at a time with the pros and cons highlighted in table 6.

Pros	Cons
Upgrade project size can be held compact and reconciled to resources	Longer delivery cycle
Possibility to manage changes between projects if necessary - controllability	More project management (several projects)

Table 6: One server and business area instance upgrade – Pros and Cons

- Functionality phasing with the pros and cons highlighted in table 7.

Pros	Cons
Safest way of system development	Definitely slowest way to achieve results

	Project will end up to be a never-ending story

Table 7: Functionality phasing CRM upgrade – Pros and Cons

5.2.2 Data migration

The options for data migration are listed below:

- Extensive
    - Everything is converted to CRM2011
    - Estimate: 70 (working days)
- Reduced
    - Almost everything is converted to CRM2011
    - 50 custom entities (+20 by Tekla)
    - Maximum 2 years old data
    - Old CRM3.0 can be used in read only mode for one year with the new CRM
    - Estimate: 50 (working days)
- No data conversion
    - Only accounts and contacts are converted
    - Estimate : 6 (working days)

6 Proposed CRM Upgrade Model - Pilot

6.1 Model Scope

The scope of the proposed model is defined based on the feasible model option, phasing and data migration options as discussed in detail in section 5.2. The proposed model is based on the Rababah, Mohd and Ibrahim's recommendation for a CRM pre-implementation plan discussed in their research paper. [17] The following sub-sections will provide in detail the scope of the proposed model.

6.1.1 Model Option

After weighing the multiple alternatives and scopes presented in *section 5.2*, Minimum effort upgrade (Alternative C) is recommended mainly due to following reasons:

- Firstly, there is no possibility to stay longer in current version because of its instability, bad performance, and lack of environment support from Microsoft. These reasons exclude alternatives A, B and D out. Current platform is not an option.

- Because of high level of customizations and integrations, and long legacy of data included in the system and process development to maintain the data, there is a need for re-considering the internal structure of the company's CRM. However, massive changes in the system should be made, if CRM-system's internal data structures, processes, and workflows are renewed. Secondly, neither time schedule or system development resources give realistic possibility to start upgrade project like that. These reasons exclude alternatives E and F out of project scope.

- With alternative C there are several scoping possibilities which can be carried out, depending on decisions in detailed project planning. At start, Minimum effort upgrade - option is the starting point.

6.1.2 Model Phasing

From the phasing options discussed in section 5.2.1, **one server and business area instance** - option is selected.

The proposal for project phases are:

- Planning
- Implementation
- Deployment/Delivery
- Training
- (Support/maintenance)

Generally, all system development is carried out in a one implementation phase. Deployment, testing, and training of the system are divided per server instance (3 instances and 3 test environments). Additional development is implemented after first server installation deployment, if need of changes is noticed.

6.1.3 Data migration

No data conversion is selected as it is the option with least overhead and minimum time consuming option.

6.2 Proposed deployment option

Tekla B&C is using Microsoft Dynamics CRM 3.0 as its main business support system for customer information management in its marketing, sales, logistics and service processes. The system is used globally in all Tekla B&C offices except Tekla China. The system has originally been deployed over a time period starting from 2003, with the global roll-out initiative still continuing at the time of writing in 2014.

Tekla decided to use “on-premise” CRM implementation and the server options for CRM 2011 upgrade pilot are shown in the figure 8.

	Workgroup Server 2011	CRM Server 2011
Summary	A packaged server offering for up to 5 employees. Experience enhanced information sharing, work routing and business reporting with a solution scaled to meet the needs of your small team or workgroup.	Enterprise offering with native, multi-tenant system architecture that can be scaled to enterprise-wide and Internet-scale CRM solution needs.
Offering	Includes 5 Client Access Licenses (CALs)	Enterprise Server only. Client Access License (CAL), Limited Client Access License (Limited CAL), and Employee Self Service License (ESS CAL) sold individually.
Clients	Outlook, Web, Offline and Mobile Access	Same
	Sales, Service and Marketing Automation Functionality	Same
Features	Workflow Automation and Customization **extensions**	Workflow Automation and System Customization
Customer Support	Included	Same
Training Services	Included	Same
Integration	Web Services SDK and Offline	Same
Operating System	Windows Server 2008 x64-based computers	Same
Database	Microsoft SQL Server 2008 x64 SP1 or R2	Same

Figure 8: On-Premises CRM deployment options for CRM 2011 [16]

6.3 Proposed organisational heirarchy

Steering Committee is at the core of the CRM upgrade program and is the main driving body. Kostojohn, Johnson and Paulen [16] describe the steering committee as the critical body for guiding the CRM program within your organization. It should be chaired by the program's executive sponsor and include representatives from all the key CRM constituent groups (for example, inside sales, field sales, customer service, and marketing) as well as from IT and from the CRM administration team. The committee should meet regularly depending on the program needs.

The steering committee's responsibilities include the following [16]:

- Managing the ongoing change control process for production CRM applications. This is the formal evaluation and approval process for configuration changes to the CRM application, used once CRM is in production to ensure that proposed changes do not interfere with any group's usage of CRM and that they are aligned with the overall CRM roadmap and to communicate these changes to the various CRM constituencies.
- Developing and maintaining the CRM roadmap for the organization. The roadmap describes the plan for enhancing the CRM program over time and how these enhancements support the organization's strategic goals. The roadmap may describe new capabilities to be added to CRM, new user groups to be migrated to the application, or new business processes to be implemented and supported with CRM.
- Planning budget requirements for CRM, based on the roadmap.

Important qualifications for CRM steering committee members include the following:

• They can accurately represent the needs of their constituency to the steering committee.

• They can understand how changes to the CRM program raised in the steering committee will impact their constituency.

• They can dedicate the time needed to participate fully in the activities of the committee.

Tekla's proposed organisational hierarchy for the CRM upgrade including the steering group is shown in the figure 7. The hierarchy include the key stakeholders which will be

directly using the upgraded CRM system or might be directly or indirectly impacted with the upgrade. A project manager is recommended to drive the day to day operations and report back to steering group at regular intervals.

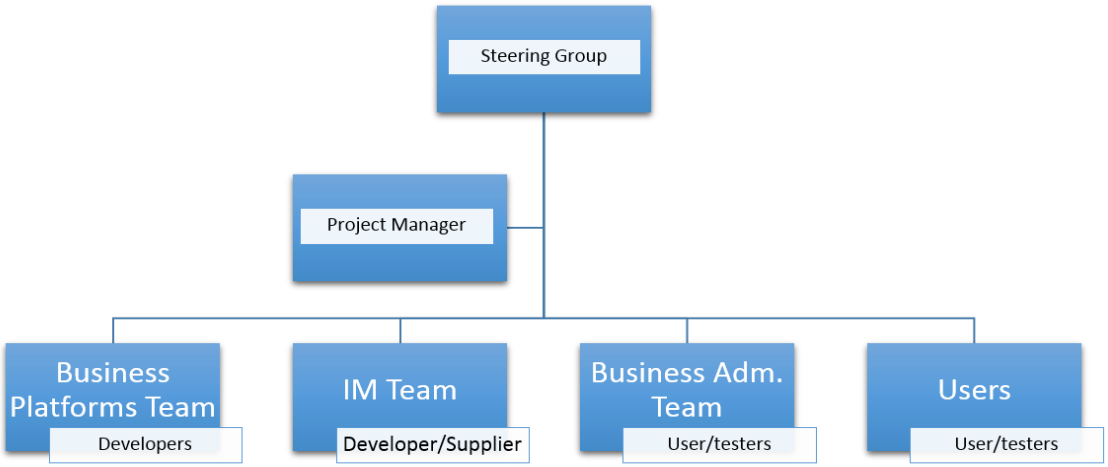

Figure 9: Organizational Hierarchy of Tekla for CRM 2011 pilot upgrade

6.4 Expected risks and challenges

On a very high level, CRM upgrade comes with the following high-level risks [18]

1. Not work at all – the unlikely worst-case scenario.
2. Mostly work but some parts not work. This is a common scenario.
3. Work but with a different User Interface (UI) which confuses users. An upgraded (different) UI is the norm for upgrades even for un-customised systems.
4. Work as before but the new features introduced with the upgrade not work properly. This also is the norm for upgrades with customisations.

Risks 1 and 2 are unacceptable and must be avoided. Risk 3 can be easily assessed in advance and risk 4 may not be an issue.

As per the company feedback, the main risks of the proposed CRM upgrade include:

1. Lack of understanding business needs and effect on solution design
2. Resource drain
3. Scope explosion
4. Alignment with other projects may cause delays
5. Financial risk
6. Implementation and roll-outs
7. Data quality risk

Risks are described in detail with their impact and probability in table 8. The effectiveness and probability is from the scale 1 (least) to 10 (most).

Risk ID:	**Risk title:**	**Description:**	**Effect:**	**Probability:**	**Overall estimate (effect * probability):**
1	Lack of understanding business needs and effect on solution design		8	2	16
2	Resource drain		8	1	8
3	Scope explosion	The scope of data migration might become too large	5	3	15
4	Alignment with other projects may cause delays		5	1	5
5	Financial risk	Project budget inadequacy	5	2	10
6	Implementation and roll-outs	Project implementation to sales and other functions in different countries and areas	6	2	12
7	Data quality risk	The data from old CRM3.0 is out of date or incorrect	3	3	9

Table 8: Risk analysis of CRM upgrade

7 Model Feedback

7.1 Summary

The CRM upgrade pilot success was measured against several concrete as well as measurable functional and non-functional KPIs. After the CRM 2011 upgrade pilot was successfully rolled-out in the targeted region during second half of 2014, the annual CRM survey was done in January 2015 for the year 2014.

The respondents of the survey were target users of CRM system who use the CRM system directly. The survey respondents' group size was more than 300 users this year and the average for previous two years were around the same size. The survey questionnaire is available in Appendix 2. The survey results were compared against the previous two years survey to see the impact of the upgrade.

All the answers in the survey questionnaire were between range of 1 (very bad) to 5 (excellent).

7.1.1. Non-functional KPIs

- **CRM Availability**

The respondents were asked in survey to rate the availability of the upgraded CRM system i.e. is the system stable and up for the usage. The reported down-times were pretty low. There was a slight increase in the perceived importance of the CRM system availability while there was a significant increase in the perceived satisfaction i.e. 0.26

points more than the previous year. The comparison of perceived satisfaction vs importance against CRM availability is shown in figure 10

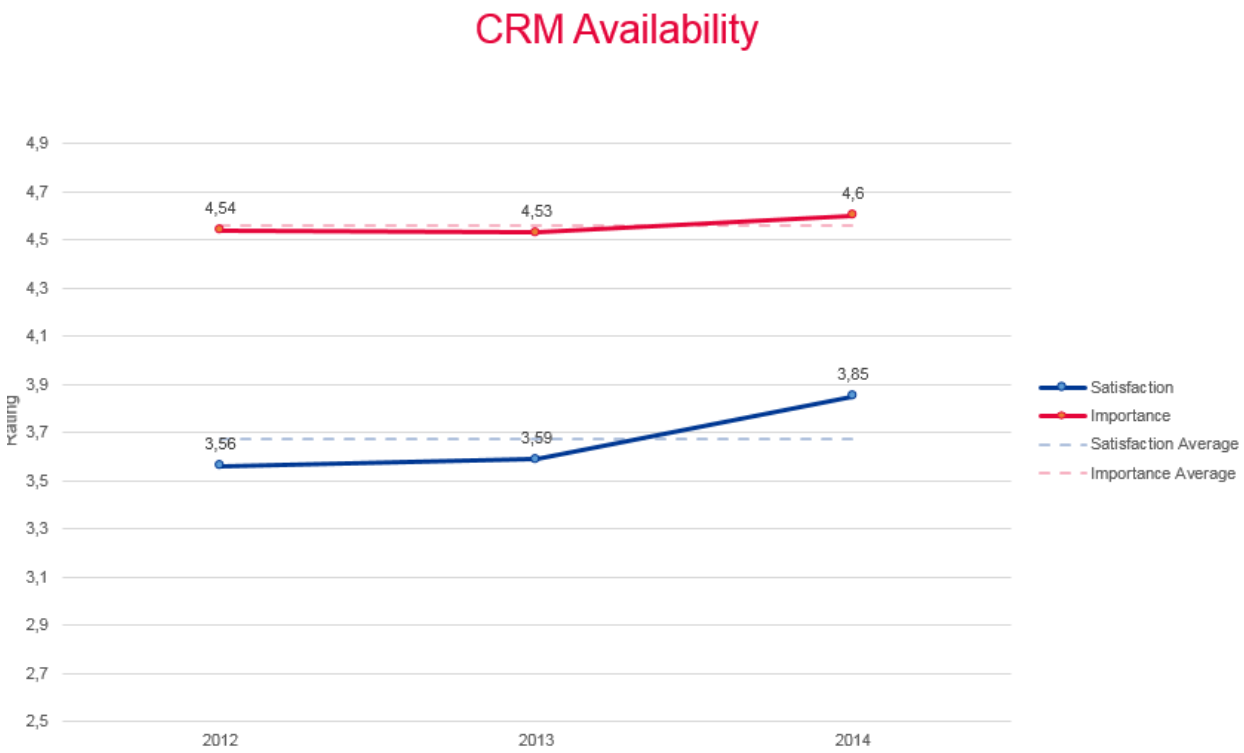

Figure 10: Perceived satisfaction vs importance for CRM availability

- **CRM Reliability**

The respondents were asked in survey to rate the reliability of the upgraded CRM system i.e. is the system usage, reports and results are reliable to use. The overall results were very positive. There was a slight increase in the perceived importance of the CRM system reliability while there was a significant increase in the perceived satisfaction i.e. 0.47 points more than the previous year. The comparison of perceived satisfaction vs importance against CRM reliability is shown in figure 11.

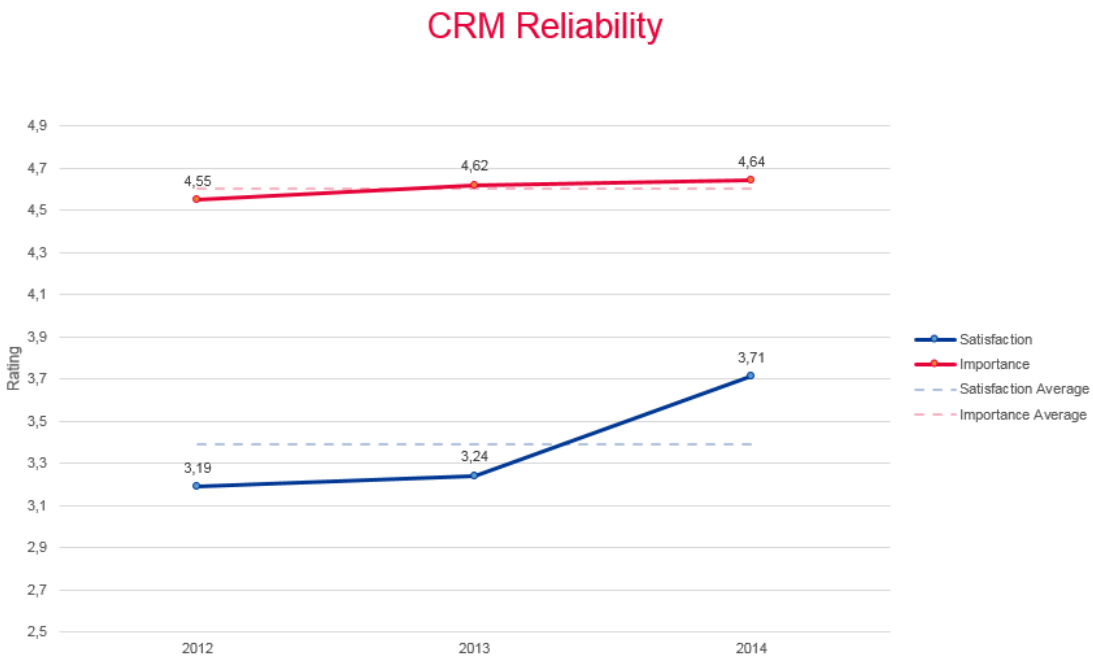

Figure 11: Perceived satisfaction vs importance for CRM reliability

- **CRM Usability**

The respondents were asked in survey to rate the usability of the upgraded CRM system i.e. how easy to use the upgrade CRM 2011 system is as a whole compared to CRM 3.0. The overall results were very positive and the usability of CRM 2011 was a definite factor against the older version of CRM. There was a slight increase in the perceived importance of the CRM system usability while there was a significant increase in the perceived satisfaction i.e. 0.47 points more than the previous year. The comparison of perceived satisfaction vs importance against CRM usability is shown in figure 12.

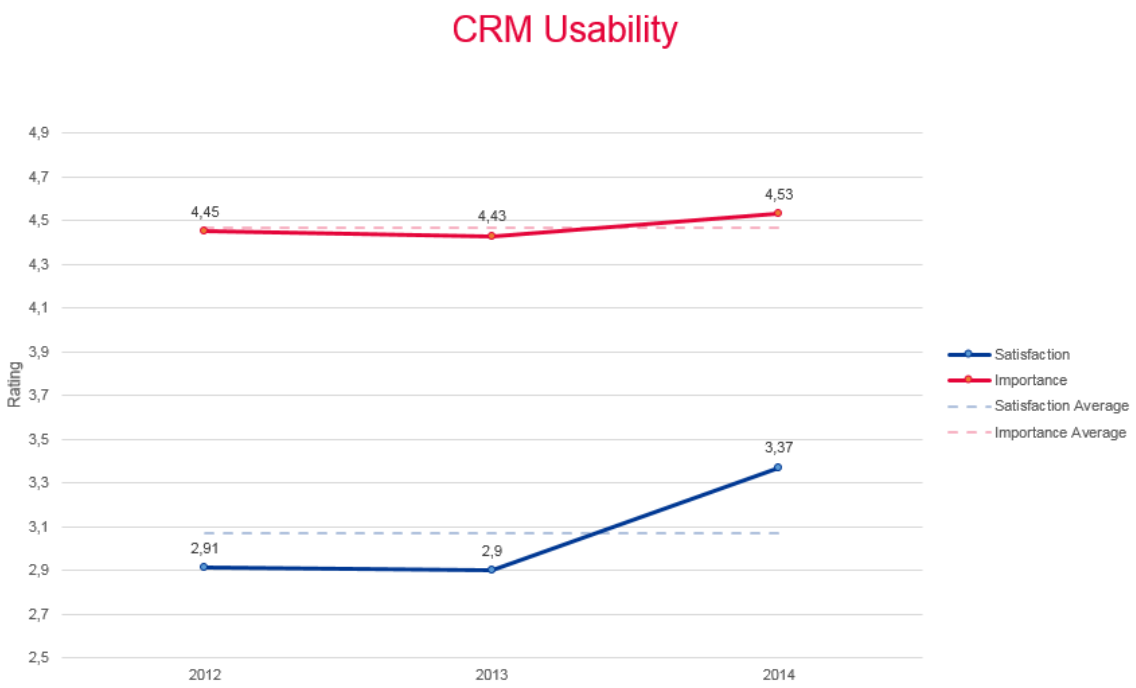

Figure 12: Perceived satisfaction vs importance for CRM usability

- **CRM Performance**

The respondents were asked in survey to rate the performance of the upgraded CRM system i.e. the speed in terms of load time of CRM 2011 system as a whole compared to CRM 3.0. The overall results were very positive and the performance of CRM 2011 was a definite factor against the older version of CRM. There was a slight increase in the perceived importance of the CRM system performance while there was a significant increase in the perceived satisfaction i.e. 0.55 points more than the previous year. The comparison of perceived satisfaction vs importance against CRM usability is shown in figure 13.

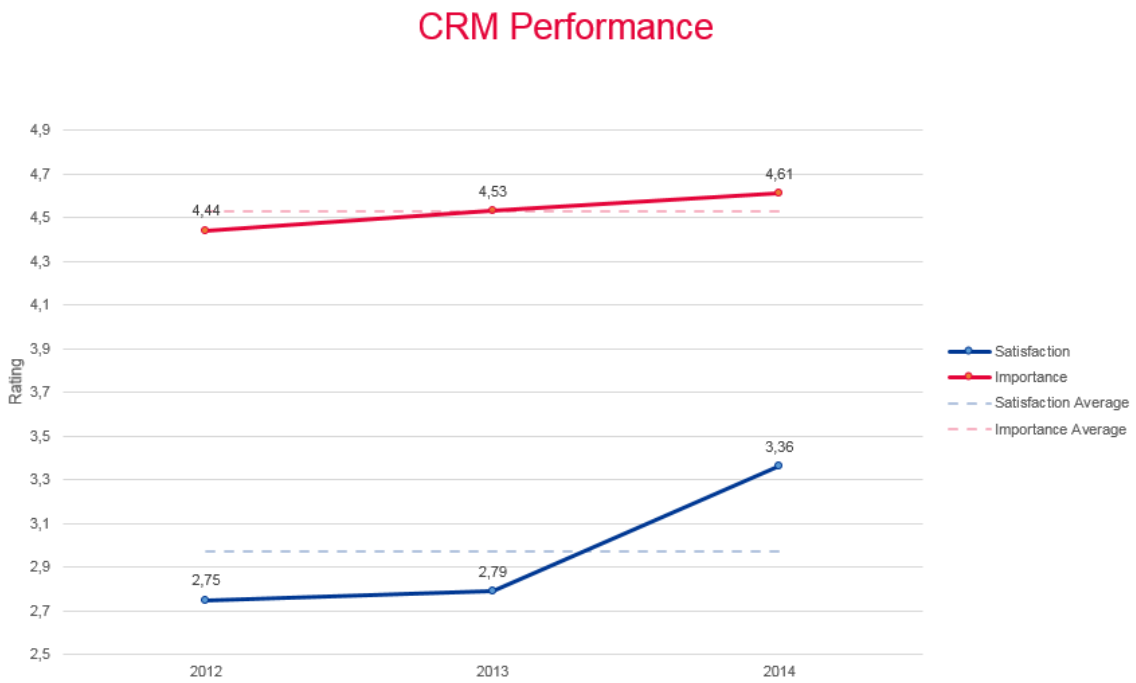

Figure 13: Perceived satisfaction vs importance for CRM performance

- **CRM UI user-friendliness**

The respondents were asked in survey to rate the user-friendliness of the User Interface (UI) of the upgraded CRM system i.e. the ease of use of the upgrade CRM 2011. The overall results were very positive and the user-friendliness of the User Interface (UI) of CRM 2011 was a definite factor against the older version of CRM. There was a slight decrease in the perceived importance of the CRM system UI user-friendliness while there was a significant increase in the perceived satisfaction i.e. 0.43 points more than the previous year. The comparison of perceived satisfaction vs importance against CRM UI user-friendliness is shown in figure 14.

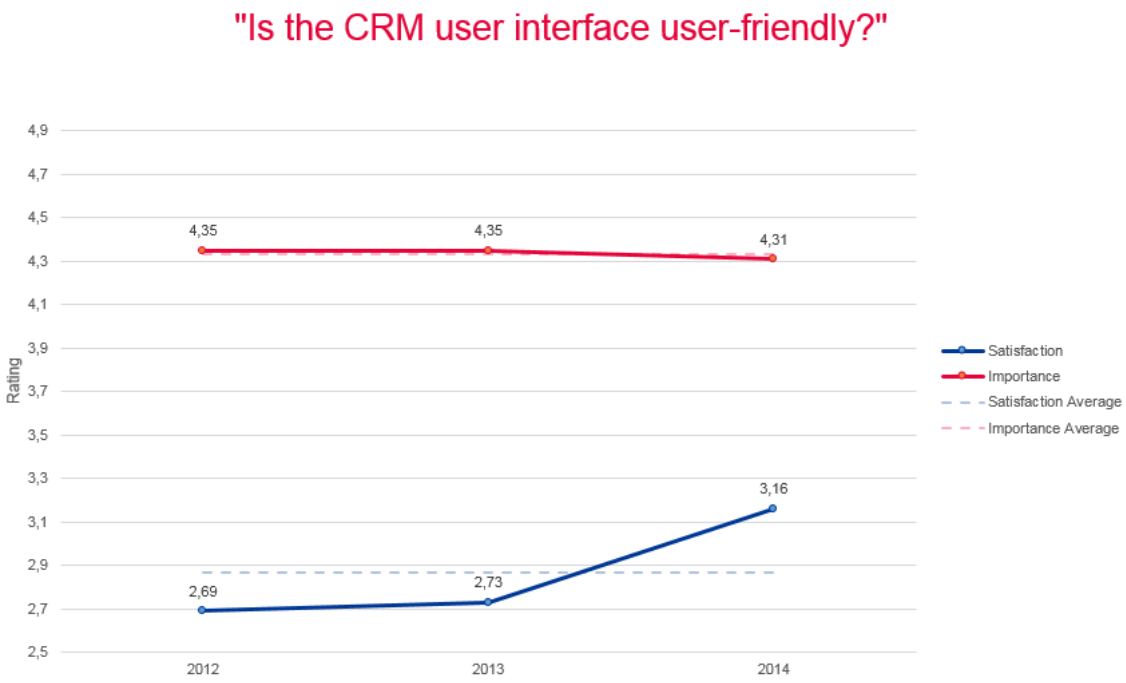

Figure 14: Perceived satisfaction vs importance for CRM UI user-friendliness

7.1.2. Functional KPIs

- **CRM support for work process**

The respondents were asked in survey to rate the support for work processes of the upgraded CRM system i.e. the ease of use creating and using the work processes in the upgraded CRM 2011. The overall results were positive.

There was a slight decrease in the perceived importance of the CRM system support for work processes creation while there was a significant increase in the perceived satisfaction i.e. 0.30 points more than the previous year. The comparison of perceived satisfaction vs importance against CRM work process support is shown in figure 15.

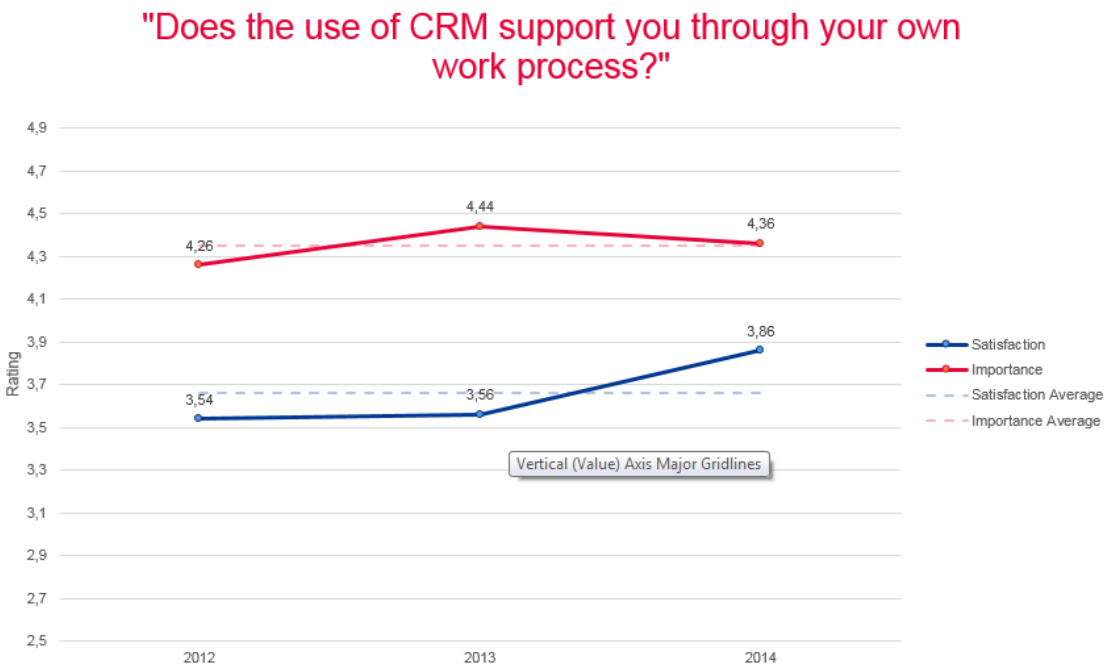

Figure 15: Perceived satisfaction vs importance for CRM work process support

- **CRM support for custom reports**

The respondents were asked in survey to rate the support for custom reports of the upgraded CRM system i.e. the ease of use of creating and accessing information through custom reports in the upgraded CRM 2011 which is a very key functionality for CRM users of the company. The overall results were positive.

There was a considerable increase in the perceived importance of the CRM system support for custom reports while there was a significant increase (.10 points) in the perceived satisfaction i.e. 0.26 points more than the previous year. The comparison of perceived satisfaction vs importance against CRM support for custom reports is shown in figure 16.

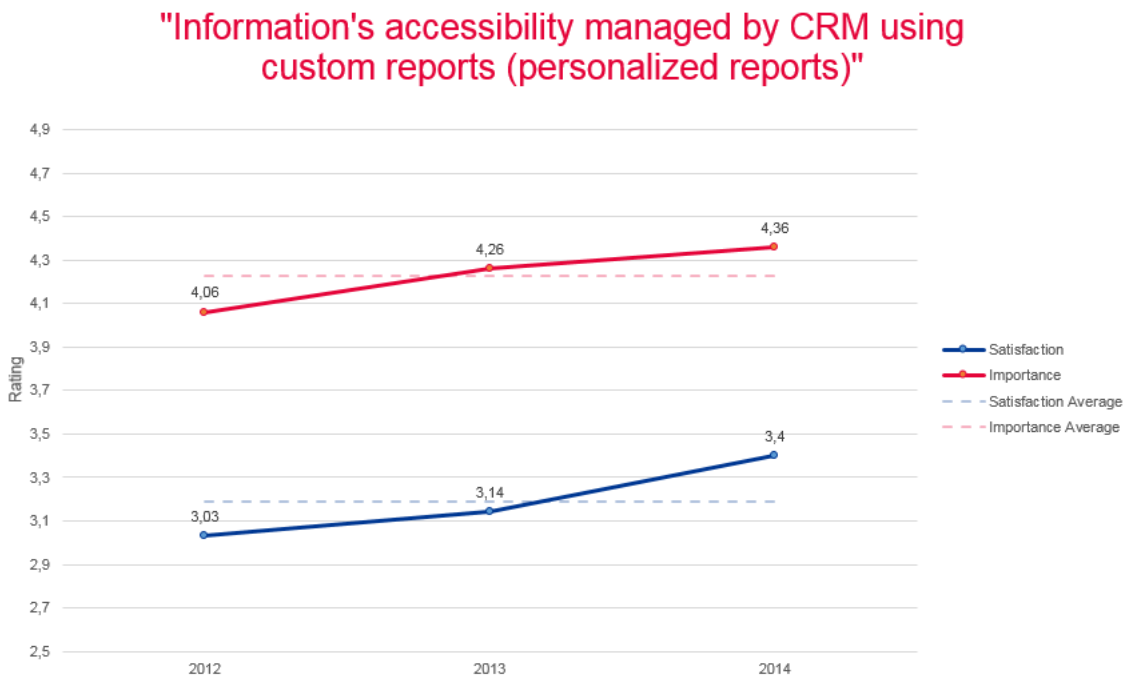

Figure 16: Perceived satisfaction vs importance for CRM custom report support

- **CRM support for advanced find queries**

The respondents were asked in survey to rate the support for advanced find queries of the upgraded CRM system i.e. the ease of use of running and accessing information through advanced find queries in the upgraded CRM 2011 which is a very key functionality for CRM users of the company. The overall results were positive.

There was a considerable increase in the perceived importance of the CRM system support for advanced find queries while there was a significant increase (.17 points) in the perceived satisfaction i.e. 0.42 points more than the previous year. The comparison of perceived satisfaction vs importance against CRM support for advanced find queries is shown in figure 17.

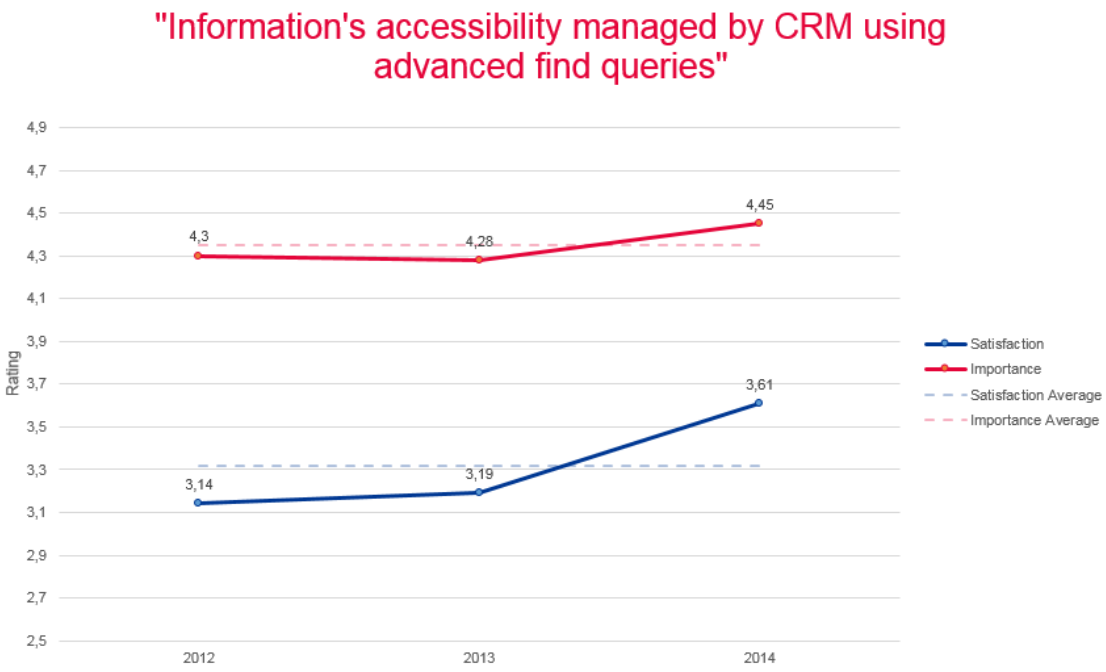

Figure 17: Perceived satisfaction vs importance for CRM advanced queries support

- **CRM support for excel reports**

The respondents were asked in survey to rate the support for excel reporting of the upgraded CRM system i.e. the ease of use of creating, exporting and accessing information through excel reports in the upgraded CRM 2011 which is a very key functionality for CRM users of the company. The overall results were positive.

There was a considerable increase in the perceived importance of the CRM system support for excel export support while there was a significant increase (.10 points) in the perceived satisfaction i.e. 0.23 points more than the previous year. The comparison of perceived satisfaction vs importance against CRM support for excel export support is shown in figure 18.

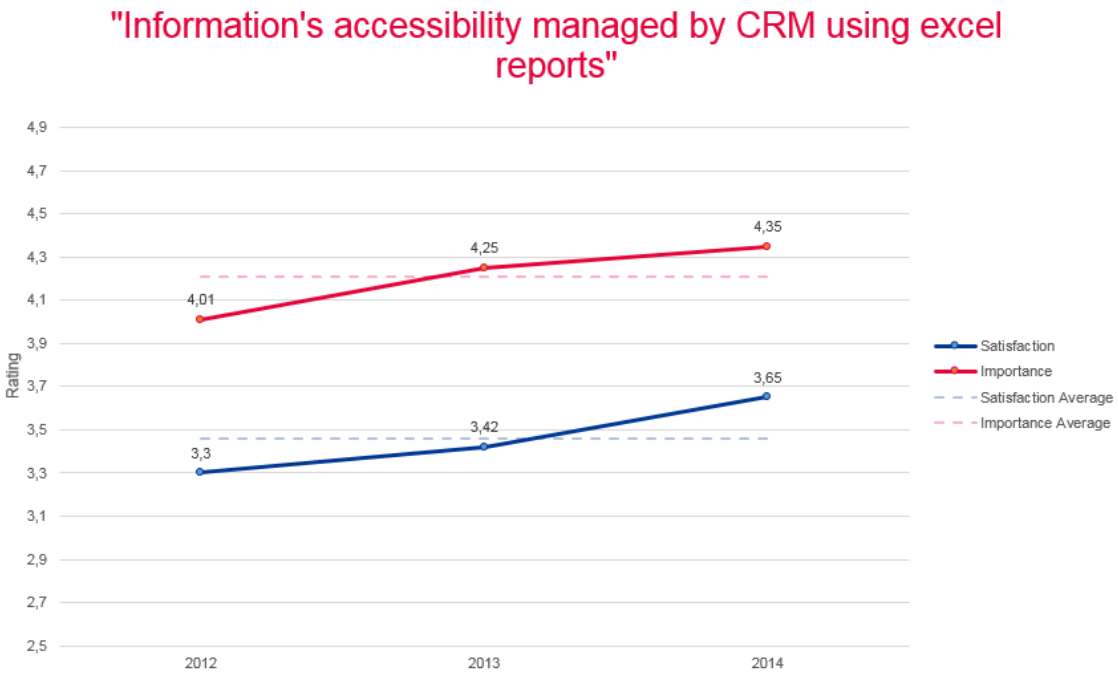

Figure 18: Perceived satisfaction vs importance for CRM excel export

Overall, the perceived satisfaction as well as the perceived importance KPIs for functional and non-functional aspects of the upgraded CRM 2011 pilot project are positive. Some key functionalities benchmarked in the survey showed significant improvements compared to the older version of the CRM. The survey results show the clear case of global roll-out of the upgraded CRM so that the whole company could realise the benefits.

7.2 Risks realized

The following risks are detected via the feedback.

7.2.1 Process realization risks

Following process risks are detected:

1. Inadequacy of process documentation
    - Risks
        - Process documentation is critical for future deployment replication and system development
        - Good documentation is mandatory for professional and effective user support

- Mitigation measures
  - Enough resources reserved for development documentation
  - Well-defined and agreed procedures for documentation

2. Communications and collaboration inside and outside Tekla
   - Risks
     - Project will influence in many units and actors in Tekla. Therefore clear communications are necessary for project success.

   - Mitigation measures
     - A separate and complete communications plan is realized
     - Different actors and their roles in the project has to be clarified

7.2.2 Technology risks

Following technology risks are detected:

1. Platform migration
   - Risks
     - Current system is very complicated including lot of customizations and integrations to the other business systems
     - Current Tekla (Business Platforms unit, IM unit, other stakeholders) competence of the current and future platforms and technologies around them is not very high

   - Mitigation measures
     - Well-known and competent consultants/partners are used in the project.
     - Internal competence is gathered by self-learning, external training, and following and learning from similar projects in Tekla.

2. Data migration
   - Risks
     - Present system includes huge amount of data (from 2003). Mostly this history data is already obsolete and just a burden for efficient usage of CRM
     - How to define “right” data to be migrated

- Mitigation measures
    - Decision of the amount of valuable and essential data has to be specified together with system users. However, the decision has to be done keeping the technical limitations in mind (system performance)

3. Integrations, custom component
    - Risks
        - Current system is very complicated including lot of customizations and integrations to the other business systems
        - Several integrations are critical to system users (like Order-Delivery -process) and they have to be ensured from day one after the deployment

    - Mitigation measures
        - Well-known and competent consultants/partners are used in the project
        - Internal competence is used as well as possible in the project. This includes usage of experts from other units in special process areas (especially Logistics-process). Possibility to use their work-load has to be ensured in the very beginning of the project.

7.2.3 People/organizational risks

Following people/organizational risks are detected:

1. Resource management
    - Risks
        - As of 2011, Tekla does not have a corporate wide resource management system in place. A project for implementing Microsoft Project 2010 for resource management was in progress, but the project was terminated in autumn 2011. As well, the scope of the project would not have been covering global usage until 2012. Even at that point, the usage target was not be on estimating upcoming resource availability and assignments, but rather reporting on resource consumption per project or task category.

        - The ability of project participants (project team, project steering group) to plan and allocate their own resources for the work expected from them can have a direct impact not only to project scheduling but also the quality of

outputs. In a project like this that has a very high number of interdependencies between people, units, systems and other projects, the ability keep track of the next relevant task and to quickly regain focus after distractions will be skills that each participant must possess.

- Mitigation measures
  - Only careful manual resource management is suggested (with tools that are available)

2. Organizational silos
   - Risks
     - CRM upgrade project has great influence for several units and actors in Tekla. Between these units, there is lot of common processes, but as well discontinuities in processes, work procedures and communications, i.e. there are noticeable organizational silos detectable.
     - If these discontinuities are not managed successfully, they might cause severe problems during the project, and affect to the project results.

   - Mitigation measures
     - A separate and complete communications plan is realized
     - Motivation and objectives of the project has to be clearly communicated
     - Different actors and roles in the project has to be clarified for all stakeholders
     - Collaboration with stakeholders has to be tight and continuous

3. User adoption after the project
   - Risks
     - In many projects results are not (fully) utilized after the project, because end-users do not see the benefits of the project in their every-day work. This originates partly from the fact that projects are carried out without any contact to end-users, so they cannot affect to the outcome, partly in pure change resistance.

   - Mitigation measures
     - Ensure full engagement of end-users already in the system specification phase

- Motivate end-users by proving the advantages of the new system
- Carry on continuous collaboration and communications with end-users

4. Lack of management support
   - Risks
     - This is a common problem for projects in Tekla. Clear ownership and chain-of-command for projects are usually not well-defined. Hence projects are mostly run and done by enthusiastic project leaders, not project owners or to-be project result owners. Because of the same reason project management, control, and change management suffer of lack of guidance from decision-makers.

   - Mitigation measures
     - Determination of present and future ownerships should be made before project
     - Involve management level into the project by proving business benefits

7.3 Operational Plan for future full-scale upgrade

The proposal for implementation of CRM upgrade project is outlined in the following sections:

7.3.1 Workshops

Based on the analysis done in previous section of this master thesis, the author recommends the following workshops as a starting point to drive the CRM upgrade project. The author suggests to divide the workshops among two different themes:

1. **Applicability definition workshops**

   The aim of the workshops is to focus on the application areas which will directly or indirectly impacted by the CRM upgrade and provide them the high-level information of the upgraded CRM system. The focus groups of these workshops are the stakeholders representing the business units which are using the CRM system. Through these workshops, the early resistance will be avoided, the risks that the different application areas foresee could be mitigated in advance and to get the stakeholder buy-in before the implementation.

The application definition workshops with the tentative schedule is highlighted in table 9.

Applicability definition workshops	
Kick Off	1 workshop
Tekla Sales Process	2 workshops
Logistics	2 workshops
Customer Support process	1 workshop
Registration process	1 workshop
Marketing process	1 workshop

Table 9: CRM Applicability definition workshops

2. **Technical definition workshops**

   The main aim of the workshops is to focus on the technical aspects of the CRM upgrade project and have a high-level understanding of the technical effort required for doing the upgrade. In order to avoid technical risks, the workshops are going to be planned with relevant stakeholders to detect early technical related risks, find mitigation actions, planning the roadmap, budget and resources etc.

   The technical definition workshops and the tentative schedules are described in table 10. The workshops takes into account the vendor management which was highlighted as the main challenge in the interviews and is planned accordingly in the multiple workshops.

Technical definition workshops	
Installation	2-3 workshops
Servers, Infrastructure, network needs	
Technical definitions by business process	
Entities & customizations	5 workshops
Define, customization work, changes and re-structuring	
Currencies, word merge	
Plugins and scripts	3-4 workshops
Definition of plugins, scripts and possible changes.	
Integrations	5 workshops
Definition together with vendors	
Components needed for integrations.	
Data migration	5 workshops
Detailed list of converted data within entities, countries and areas	
Order of migrations and re-structuring of data	
Reports	2 Workshops
Define reports needed for CRM2011	
Other workshops	
(Extranet Integration)	1 workshop
New CRM 2011 features workshop.	2-3 workshops
Planning for test phase	1 workshop

Table 10: CRM Applicability definition workshops

7.3.2 Project Operations

The contact persons of the customer and supplier (or persons authorized by them) agree on the location for each meeting, on either the customer's or the supplier's premises. The following Microsoft Dynamics CRM installation environments will be used during the project: development, testing, and production environment. The supplier is responsible for the development environment maintained on its premises. The client is responsible for the maintenance of the test and production environments. Tekla will build also one development environment for Tekla development team.

The formal project approval process highlighting the key content with the description and approval criteria is shown in detail in table 11.

Content	Description	Approval
Project definition meeting memo	Discussions and decisions made during the project	The memo is reviewed and approved at the beginning of the next meeting.
Summary of specifications	- Use case descriptions (Visio / cross-functional flowchart) - The application's functionality and technical requirements - Field list - Screenshots of the customized user interface - Description of the reports to be tailored - Description of conversions - Interface descriptions (information content, processing rules, data transfer and scheduling, management of exceptions, and logs) - Description of other tailored functionality (use cases, functionality, architecture, and any other requirements) - Description of installation requirements, and installation notes	The summary of specifications is accepted by the steering group unless otherwise agreed.

Project task list	Project tasks and schedules, status, and responsibilities (Excel)	This is to be approved via personal discussions or e-mail exchange between project managers.
User interface customization	Customizations of the interface using the tools in the software (XML file)	User interface customizations are approved as part of the specification summary.
Training plan	Plan regarding training methods and content	Approval is done in the steering group meeting or by mutual decision of the project managers. Approval will be documented in the meeting memo.
Training material	Customer-specific training material (handout)	Approval is done in the steering group meeting or by mutual decision of the project managers. Approval will be documented in the meeting memo.
Testing plan	Testing scope, content (use cases), methods and responsibilities	Approval is done in the steering group meeting or by mutual decision of the project managers. Approval will be documented in the meeting memo.
Test case report, testing report	Objects/functionalities to be tested and test results	Approval is done in the steering group meeting or by mutual decision of the project managers. Approval will be documented in the meeting memo.
Approval of delivery	Full approval of the delivery, signed by the parties	Approved by the steering group

Table 11: Project Results and Approval

Contact between the supplier and third parties is channeled via the customer's contact person, or, as separately agreed in each case, between parties authorized by the contact person.

The project in the end results in a complete, documented Microsoft Dynamics CRM application that is installed in the customer’s production environment and has been tested and approved by the customer.

8 Conclusions

8.1 Summary

The master thesis collected and analysed the key factors that are critical for a CRM upgrade project's success in the target company. Each factor is analysed in detail and associated risks were identified and mitigation actions were suggested.

Some of the key considerations for CRM upgrade project for the target company are listed in table 12.

After analysis, a recommendation plan for doing the upgrade operationally in the company is provided. The plan gives the company a rough overview of the future CRM upgrade project and should assist in operationally managing the project.

Sr. No.	Key considerations	
1	Key factors for successful upgrade	Knowledge before the upgrade, understanding the system (old & new), project management, documentation, team management, partners
2	Things to change in future	Minimize partners work, make clear agreement, pre-project study, learning databases & different things in the system, effective project management, 9 month - 1 year too long for implementation, rollout-planning in advance

Table 12: CRM upgrade key considerations for the company

8.2 Lessons learnt

The key lessons learnt during the pilot upgrade of CRM 2011 are:

- **Operations Manual**

Take the time to document and build an operations manual for CRM, so that you can track how to build servers, which registry keys or other settings were setup, etc., so that when you add another server later or move to a new deployment you are not running into issues that you prevented or resolved in the past.

- **Free space on SQL disk for hosting transaction log file.**

During the upgrade your transaction log will grow and we have seen this grow as much as twice the size your SQL data file, so make sure to allocate enough free space for the transaction log to grow during the upgrade. It's recommended to allocate at least 2 to 3 times the size of the SQL data file for the transaction log during the upgrade. Changing the backup model to Simple (as detailed above) will really help here as well. The bottom line is to make sure you test this prior to upgrade.

- **Supportability**

CRM 2011 provides much more functionality and extensibility than previous version of CRM did, so re-visit any unsupported stored procs, triggers, etc. that were in place and look into whether or not it's even needed that workaround in place anymore, or if there are ways to do that with plug-ins or other supported methods in CRM 2011.

- **Smart Matching**

This is how CRM correlates e-mail and sets the regarding values on e-mails automatically in CRM 2011. Due to older CRM version, the company wanted to disable this feature and it was possible through a registry key detailed in this KB [19]. In CRM 2011 the company added the ability to configure and disable Smart Matching to the UI. Because of this change the company had to enable Smart Matching by default for all installs and upgrades.

- **Configure CRM Deployment Manger for Network Load Balancing (NLB)**

The company used NLB in the CRM deployment and one of the steps that is sometimes forgotten is to setup NLB correctly after installing the additional CRM servers. By default the first CRM server you installed will be listed in Deployment Manager, so you will not be leveraging NLB correctly until this is configured properly [20]

8.3 Next Steps & Future Recommendations

This master thesis provides a brief overview of a CRM upgrade proposal that the company could use for the CRM implementation in future. The current scope was to look from the high level CRM system in the company, discover the problems that might happen, learn from issues in previous CRM implementations and prepare a plan for the next upgrade.

In addition, the author also recommends to prepare a roadmap of key tasks that need to be done with clear responsibility and result description. A sample roadmap is shown in table 13.

ID	Task name	Result	Responsible
1	Creation of project plan	Project plan	Project manager
2	Decisions for implementation	Decisions for implementation options? Decision for CRM2011 instances?	Tekla SG
3	Kick-off	Reporting to the project group and start of definition	Project group
4	Definitions	Definition and definition report	Project group
5	Ordering of licences	Server licences: Number of client licences:	
6	Implementation of customized features and added functionality	Customizing the CRM software as specified, and specified additional functionality	Product specialist, architect, developer
7	Installation	Planning the installation and installing the CRM application at the customer's site	Installer

8	Testing	Customized features and additional functionality are performed in accordance with the specifications	Test group appointed by the project group
9	Installation of customized features and additional functionality	Installation of customized features and additional functionality	Installer
10	Training	User training (total of ? persons): basic and advanced functions	Trainer
11	Project approval	Preparation of the prerequisites for approval	Project group

Table 13: CRM upgrade – tasks list

Microsoft has already released the Dynamics CRM 2015 [21] in September 2014 and is continuously gaining traction. The Microsoft Dynamics CRM 2015 release brings so many new and exciting features and enhancements [22]. The company has already started to plan about the new upgrade and the preliminary understanding is to move to CRM 2013 till the CRM 2015 gets mature. Table 14 gives a good overview of the difference in functionality between CRM 2011 and CRM 2013.

Microsoft Dynamics CRM 2011		**Microsoft Dynamics CRM 2013**
User Interface Upgraded UI from CRM 4.0 CRM functional groups such as Workplace, Sales, Marketing etc are on the bottom left CRM home screen Ribbons have big Icons and Images Color centric around UI User friendly		**User Interface** Brand new UX design CRM functional groups are now top of the CRM home page Ribbon layout have changed, only show main ones and rest are hidden until expanded. Lots of white color space around the UX Moderate learning curve if you have never used Microsoft CRM before Slide and glide UX when clicking on CRM button Less clicks and less windows to open when working in CRM
Microsoft Dynamics CRM 2011		**Microsoft Dynamics CRM 2013**

Business Process Flow		Business Process Flow
Lead to Opportunity, Account, Contact conversion. Workflow is asynchronous only Dialog Duplicate detection		Lead to Opportunity, Account, Contact qualification process with guided steps Workflow now fired off synchronously Dialog Duplicate detection has been removed for system and custom entities Business rules to streamline customization without having to code Javascript Auto Saved on record
Microsoft Dynamics CRM 2011		**Microsoft Dynamics CRM 2013**
Mobility Mobile Form Tablet form limitation such as not being able to access custom forms, no Javascript supported, Custom entity not supported Restrictive in customizing the entity and forms		**Mobility** Mobile forms Rules to control if forms is Read-Only on mobile and tablet devices Javascript supported Workflows supported Custom entities supported Dashboard supported Less restrictive to customize on tablet devices Multi-entities search Custom sub-grid support Supports CRM Online and CRM On-Premise (IFD)
Microsoft Dynamics CRM 2011		**Microsoft Dynamics CRM 2013**
Email Configuration Uses email router to facility incoming and outgoing emails		**Email Configuration** Email router is going away and replace with server side sync between Outlook and Exchange server.

Table 14: CRM 2013 vs CRM 2015 key feature comparison

8.4 Outcomes vs Objectives

The main aim of this master thesis was to identify and analyse the different factors impacting the company as a whole while deciding to do the company wide CRM upgrade project and propose a solution model for doing the upgrade in the future. The master thesis successfully delivered the deep level insights to the company regarding the factors

that directly impact the success or failure of a big-scale CRM upgrade project in addition to provide a future model for future upgrades.

The thesis first did the current state analysis of the company to know the issues faced while doing the previous upgrades through the interviews and the benefits that the company perceives to get form the next upgrade. The theoretical factors were listed and analysed based on existing literature.

In order to validate the theoretical factors and to document risks realized, the author of the thesis suggested to do a select a pilot business unit in a target region for a pilot CRM upgrade. After the successful pilot upgrade, multiple functional and non-functional KPIs of the upgrade CRM system were benchmarked and analysed via a detailed survey across the pilot business unit. The survey results were compared against the results from previous years' surveys to evaluate the effectiveness and benefits of the CRM upgrade project. The measured impact of KPIs were perceived to be very positive and hence, the pilot was successful in terms of utilisation of the model for the future upgrade projects of the company.

Before the pilot upgrade, the list of expected risks and challenges were listed in detail with their potential impact based on severity and probability of the risk. The risks were listed based on the previous history of upgrades in the company and multiple researches done in the field. The realised risks are then analysed after the upgrade to understand the practical risks which came up during or after the pilot upgrade.

The key lessons learnt and future recommendations including an operational model are delivered for the company to use as a reference for the future CRM upgrades.

8.5 Reliability or Validity

The author’s opinion based on the primarily company’s stakeholders response and positive results of the post pilot upgrade survey is that the findings and recommendations are very relevant and customized for the company to take mostly “as-is” for their future upgrade. The author at the time of writing this thesis works full-time in the case company in the CRM domain and the results have been validated with the broad stakeholders inside and outside the CRM unit.

The master thesis is successful, in author's opinion, to deliver on the stated objectives. However the master thesis findings are based on a pilot upgrade project for a target business unit for a pilot region with limited number of CRM users. The suggestions and future operational model should be taken as a reference for the next bigger and wider CRM upgrade which will have a much bigger scope and certainly bring much more complexity in every respect i.e. technical, organisations, operational etc.

Each company has a customized CRM system based on the requirements and similar is the case in the target company for this master thesis. The risks presented in this master thesis are practical and realized after doing the pilot upgrade which validated the expected risks while showing new risks at the same which are mostly technical in nature.

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Appendix 1: Survey Questionnaire

1. What is your overall opinion about the CRM implementation at the office (number of users, how important is it from overall company objectives, how easy is it to use for end users, specific problems etc.)

2. What were the main reasons for doing the CRM upgrade?

3. What was the CRM upgrade project like (duration, resources, budget etc.)?

4. Was there any operational disruptions before and after the go-live of the upgraded CRM?

5. Have you sensed resistance to the usage of CRM from employees before, during or after the upgrade?

6. Was the communication about the CRM upgrade and implementation between head office and regional offices & other stakeholders honest, timely, reliable and sufficient before and during the implementation?

7. What were the main challenges that you faced during the upgrade?

8. What is Your opinion about the following statements on a scale 1 - 7 where:
   1 = strongly disagree, 4 = neither disagree nor agree, 7 = strongly agree

   - Top management is interested in CRM :
   - Top management understands the importance of CRM:
   - Top management supports CRM :
   - Top management considers CRM as strategically important :
   - Top management understands CRM opportunities :
   - Top management pressures my office to work with CRM :
   - CRM is regarded as high priority by top management :

9. Any comments about the top management support before and during the CRM upgrade project?

10. In your opinion, what are the key factors in a successful upgrade of a new system?

11. If you were to do the upgrade project again, what things you would change and why?

Appendix 2: CRM 2011 Pilot Upgrade Feedback

Date	
Reported by	
Name of Area office	

Please share your experience on scale of 1-5 (1 = very bad, 5= excellent)

		Rating (1-5)	**Comments (If Any)**
1. Ease of use	Overall		
	Compared to CRM 3.0		
2. Load time	Overall		
	Compared to CRM 3.0		
3. Reliability	Overall		
	Compared to CRM 3.0		
4. The user interface and new features			
5. Compatibility with Internet explorer			
6. Reports			
7. Look and feel of the CRM 2011 Forms.			
8. Intuitiveness of ribbon button and commands			
9. Usefulness of Add-on and c360 Components (The one having yellow triangular symbol)			
10. Navigation from one record to related record (i.e. from Contact to parent account or originating Lead etc.)			