CRITICAL SUCCESS FACTOR FRAMEWORK FOR CUSTOMER RELATIONSHIP MANAGEMENT AND BUSINESS INTELLIGENCE IMPLEMENTATION

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CRITICAL SUCCESS FACTOR FRAMEWORK FOR CUSTOMER RELATIONSHIP MANAGEMENT AND BUSINESS INTELLIGENCE IMPLEMENTATION

A Project

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Abstract

of

CRITICAL SUCCESS FACTOR FRAMEWORK FOR CUSTOMER RELATIONSHIP MANAGEMENT AND BUSINESS INTELLIGENCE IMPLEMENTATION

by

Reshma Sameer Naik

CRM is clearly emerging as a top priority initiative for businesses today. Companies are identifying and prioritizing CRM projects on both their tactical and strategic planning horizons. The stakes are enormous—the winners will claim market dominance resulting from the ability to completely satisfy their customers. Customer satisfaction provides bottom-line business results in the form of increased purchased volumes, repetitive purchases, and generation of new business.

Smart companies use Business Intelligence (BI) to get clearer picture of their customers. They also derive significant ROI by using BI to devise better tactics and plans, respond more effectively, and capitalize more quickly on new opportunities. In short, they are using BI to become intelligent about the way they do business.

However, not all CRM-BI solutions succeed. Even before a project begins, there are telltale signs indicating whether it will succeed, struggle, or fail. It is important that
organizations understand the key indicators of success so they can surmount the challenges associated with every project. This study explores the root of high failure rate of CRM and BI implementation. Based on the relevant literature and interviews with the experts, this paper compiles the critical success factors of CRM and BI solutions. The proposed framework is tested by analyzing two cases, which describe the steps taken at strategic and operational level while implementing CRM and BI solutions and their positive impact on the overall efficiency of the organizations.

These success factors could lead to a success, but do not guarantee it. In the end, each organization needs to devise a plan and execute it. Ultimately, companies succeed by making sure the business—not the technical team—drives the change and is accountable for its success.

______________________, Committee Chair
Dr. Beom-Jin Choi

______________________
Date
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Chapter 1

INTRODUCTION

Over the past decade, many firms have implemented customer relationship management (CRM), a set of information processes and technology tools that enable the development of firm-customer relationships (Rogers, 2005). The companies invest in CRM for operational (cost) efficiency and profit efficiency. Krasnikov et al. had done research in 2009 in this area. According to them, CRM implementation enhances firms’ ability to earn profits, but it also exceeds the additional costs. Thus, the study concludes that CRM enables firms to generate higher-quality products or services at higher costs and higher quality enables them to gain higher revenue that overcomes additional costs. But, around 65 to 80 percent of companies feel their CRM investment hasn't delivered on its promised potential. That is because they are likely missing a critical piece of the solution: a business intelligence process that drives behavioral change (Hall, 2004). Each day, business decisions increase in number and complexity. Customers demand higher levels of service while interacting with companies through multiple channels, posing technical and business challenges throughout the enterprise. As a result, analytics and business intelligence (BI) play a pivotal role in a comprehensive CRM strategy. The need for better CRM is one of the factors driving growth in BI (Hall, 2004). Gartner Research forecasts that worldwide BI platform revenue will increase at a compound annual growth rate of 8.1 percent over the next few years, reaching $7.7 billion in 2012 (Pettey, 2008). In fact, BI was the number-one technology priority in the recent years, according to a worldwide survey of 1,500 CIOs by Gartner Executive Programs. That level of
commitment is one reason why BI revenue performed better during an economic downturn than some other technologies did (Britt, 2008).

For companies to derive any meaningful value out of BI, however, they need to focus on key factors that actually drive transformation. Some companies think they have a business intelligence strategy once they purchase an analytics or business intelligence application. However, there is a flaw in that logic: applications are tools that can help execute a strategy - they are not a strategy in and of themselves. An often-overlooked component of CRM is the process of applying lessons learned from customer information to enhance business and customer relationship behaviors. Customer behavior is the study of when, why, how or where people do or do not buy. Customers’ attitude and loyalty to a particular product and beliefs about brand equity influence the customer behaviors in marketplace (Lu and Lin, 2002). Even after purchasing BI software, it is important that one invests both time and money in defining how the information will be used for business advantage (Hall, 2004).

Now, as the country is in recession, everyone is scrambling to turn data into useful information using BI. In essence, BI organizes data from multiple sources and delivers it to fingertip usefulness. BI can be anything from an Excel spreadsheet to an end-to-end slice/dice OLAP solution combining multiple data sources into an organization's strategic vision (Baker, 2009). At the core, companies want to understand what is going on, and what is likely to happen. With BI tools, they can use the data that is generated during the course of their business operations to also make better decisions about their products, customers, vendors and employees.
Many businesses buy expensive tools with the hope that just by implementing these tools they will be able to achieve higher sales and better customer service. The reality is that most of the times, a project's success or failure is in the hands of the company implementing the software, not the software vendor or the tool itself. CRM is no exception – it has faced its challenges with failed BI implementations. To address this challenge, I aimed to identify the key success factors relevant to CRM and BI. I examined the literature to identify the appropriate key factors for CRM and BI integration, but found very little work in this area. There are journal articles, which list the critical success factors of either CRM or BI. I chose that literature as a starting point for the identification of CRM-BI critical success factors.

If the executives use this framework as a guideline, they will more likely be successful in their implementation. In addition, it should be helpful to researchers interested in broadening their view of business intelligence for CRM.

In order to identify the critical success factors of CRM-BI integration, the in-depth research of academic journal articles as well as practitioner literature is conducted. Academic articles used in this project helped to study the research and theories developed by the scholars, whereas practitioner literatures revealed the practical side of CRM and business intelligence.

In this paper, the case studies of Continental Airlines and Northern Tool and equipment Co. are used to compliment findings from research and validate the proposed framework. The case study of Continental Airlines was selected because it was a successful major
airline for many decades, but failed in 1990s because of various strategic errors. However, after the new CEO took charge in 1994, the airline resurrected. The CEO changed the way Continental was doing business.

Similarly, Northern Tool and Equipment Co. is a tool retailer who wanted to grow sales with a better understanding of customer behavior across its retail, online and direct mail channels – a practice often called customer data mining or customer intelligence. By taking necessary steps, Northern Tool achieved its goal. Thus, both these case studies provide an opportunity to validate the success factors.

From detail review of the cases and strategy manipulation, the success factors can be identified. If a strategy is removed and failure follows, and if the company becomes successful again after the strategy is restored, it is likely a success factor. In both Continental and Northern Tool cases, there is no evidence of how much impact any one particular factor makes. However, it is also true that the combination of the success factors makes a huge difference.

The purpose of this paper is therefore to propose a critical success factor framework for CRM and BI Implementation. Chapter 2 explores the success factors of CRM and BI through literature review. Chapter 3 provides practical insights given by experts. Based on literature and interviews, the new framework is developed in Chapter 4 and to test this framework, a detailed case study analysis is done in Chapter 5. Finally, discussions and concluding remarks are offered in Chapter 6 and Chapter 7 respectively.
2.1 Customer Relationship Management (CRM)

In competitive consumer markets, customer choice decisions are at the root of business survival. Businesses must focus on the attraction and retention of customers through personalized service. The cost of winning a new customer is five times higher than that of maintaining an existing customer (Rosenberg and Czepiel, 1984). Maintenance of the customer relationship is therefore cost-effective marketing, and has become a key aspect of most firms’ business strategy. The nature of CRM aims to maximize customer value in the long term by focusing business processes, marketing and customer service. CRM is the combination of marketing efforts, business processes and technology that allows the firm to understand its customers from multiple perspectives (Chang, 2007).

Peter Drucker (1954) states in ‘The Practice of Management’ that “the only effective definition of a business aim is to create customers!” since customer satisfaction and trust will bring repeat purchases to the firm and hence improve the firms’ organizational performance. Increasingly, firms are recognizing the value of establishing close relationships with customers as a means of increasing retention. CRM systems help firms maintain relationships with customers with associated competitive advantages.

CRM is an integrated information system that is used to plan, schedule and control the presales and post sales activities in an organization.
CRM embraces all aspects of dealing with prospects and customers, including the call center, sales force, marketing, technical support and field service. The primary goal of CRM is to improve long-term growth and profitability through a better understanding of customer behavior. CRM aims to provide more effective feedback and improved integration to better gauge the return on investment (ROI) in these areas. Sales force automation (SFA), which became available in the late 1980s, was the first component of CRM. SFA, call center and automated field service operations were on parallel tracks in the 1990s and began to merge with marketing in the late 1990s to become CRM. Like ERP, CRM is a very comprehensive system, and a myriad of packages provide a myriad of options.

Unfortunately, there is wide range of views as to what constitutes CRM (Zablah et al., 2005). At one extreme, it is about the implementation of a specific technology solution, and at other it is the holistic approach to selectively managing relationships to create shareholder value (Payne and Frow, 2005). CRM must be viewed as strategic, cross-functional and process-based in order to avoid the potential problems associated with a narrow technology oriented definition. It should not be limited to executives working in sales, marketing, and information technology. Without the involvement of the managers from finance, research and development, production/operations, purchasing, logistics, or other functions, promises may be made to customers that cannot be profitably fulfilled (Lambert, 2009).
Implementing a customer relationship management (CRM) solution might involve considerable time and expense. However, there are many potential benefits.

A major benefit can be the development of better relations with existing customers, which can lead to:

1. Increased sales through better timing by anticipating needs based on historic trends
2. Identifying needs more effectively by understanding specific customer requirements
3. Cross-selling of other products by highlighting and suggesting alternatives or enhancements
4. Identifying which of the customers are profitable and which are not

This can lead to better marketing of products or services by focusing on effective targeted marketing communications aimed specifically at customer needs and a more personal approach and the development of new or improved products and services in order to win more business in the future.

Ultimately this could lead to enhanced customer satisfaction and retention ensuring good reputation in the marketplace, increased value from existing customers and reduced costs associated with supporting and servicing them, increasing overall efficiency and reducing total cost of sales and improved profitability by focusing on the most profitable customers and dealing with the unprofitable in more cost effective ways.

Once the businesses start to look after their existing customers effectively, efforts can be concentrated on finding new customers and expanding market. The more they know
about their customers, the easier it is to identify new prospects and increase the customer base.

Even with years of accumulated knowledge, there is always room for improvement. Customer needs change over time, and technology can make it easier to find out more about customers and ensure that everyone in an organization can exploit this information. Successful CRM implementations do not only involve CRM hardware and software, but also intangibles such as customer-oriented people, process, organization, and culture. These intangible CRM resources are by nature inimitable and should be bundled with rest of the tangible resources to create sustainable competitiveness of the firm (Kim et al, 2010). The companies should align not only IT resources such as technical and human, but also complementary organizational resources including culture, policies and rules to create value-generating processes (Melville et al, 2004). Like any other Information Systems implementation, successful CRM implementation depends on people applying and integrating their knowledge, interacting with others and coordinating their actions (Peppard and Ward, 2004).

While CRM offers an integrated approach to managing relationships with customers, the success rates of CRM implementation continue to be low. Significant percentages of CRM projects fail to meet client requirements, are delivered late, not at all, or are over-budget. The main reason for such failure include incomplete requirement specifications, failure to anticipate and manage project risks, inappropriate development methodology, poor database design and failure to take adequate account of human, organizational and
cultural issues (Hamill and Stevenson, 2002). There are also cases where technology misfit has created hurdles. The autonomy of decision making has allowed organization departments to procure technology solution without much regard to the overall integration. Attempting to centralize technology in a decentralized environment becomes highly complicated. Integration with existing legacy systems is complex. Individual resistance combined with organizational resistance can create barriers for an overall integration. Variables such as senior management support/sponsorship, selling change internally, putting a change infrastructure in place, providing effective end-user training, business process re-configuration and establishing rewarding systems play an important role. This indicates that successful CRM implementation requires all the actors from their sub-cultural silos come together to promote a process and technical integration, although enabling everyone to come onboard can be problematic and very time and resource consuming (Clegg and Shepherd, 2007).

CRM in this context is not just a software package but also a comprehensive strategic approach to manage evolving relationships with customers, which require continuous adaptation in response to changing needs. In order to manage these customer relationships and promote a unified customer service approach all aspects of a business would need to work in synergy. The integration of the existing cultures, processes, technology with an ownership of people from all parts of the business becomes paramount (Finnegan and Currie, 2009).

To facilitate profitable, long-term customer relationships multichannel integration strategy is developed by Payne and Frow in 2004. The managers can evaluate and
examine the channel options such as retail stores, telephone, direct marketing, call centers, e-commerce etc. depending on the company’s business situation. To make the CRM effective, it is imperative to integrate the activities in different channels to produce the most positive customer experience. To succeed therefore, the companies must seek to offer an individualized relationship in every customer interaction through whatever channel is being used.

2.2 Critical Success Factors of CRM

According to the study conducted by Croteau and Li (2003), the top management support and knowledge management capabilities are the most significant success factors. If executives do not show any interest or involvement in the whole process, organizations’ members will not believe in such projects and will tend to resist instead. Similarly, a high level of knowledge management capabilities implies that the information technology infrastructure is being utilized to reap technological benefits and create operational, analytical and collaborative knowledge about customers, products and services.

Chang identified communication between staff as the most critical factor for CRM implementation (2007). In his study, Chang stated that Business Process Reengineering (BPR) could help firms to change their business processes from production-oriented to customer-oriented practices and thinking. Rather than focusing on narrow jobs structured into distinct functional departments, BPR emphasizes core processes involving teams of employees working together to serve the customer.
Rigby and Ledingham (2004) attribute two common characteristics of CRM success stories: one is highly focused approach to CRM with a relatively narrow scope for the projects and the second is a healthy skepticism regarding the overblown claims of CRM vendors. This reduction in scope for CRM projects and more conservative projection of benefits is bringing some much-needed financial responsibility to CRM implementations. In another case study conducted by Plakoyiannaki et al in 2008, the authors of the paper provide evidence toward a link between employee orientation and CRM success. It is argued that successful customer relationships require a management focus (internal suppliers) on servicing the needs of employees (internal customers), who, in turn, accommodate external customers. The success of CRM is contingent upon the well-being of employees who implement this process.

In addition to the above-mentioned CSFs of CRM, there are more success factors, which are summarized by King and Burgess in their research paper published in 2008. They are technological readiness, culture change/customer orientation, process change capability and systems integration capability.

2.3 Business Intelligence (BI)

Business Intelligence has its roots in the decision-support technologies first developed in the late 1970s, explained Keith Gile, a market analyst with Forrester Research. Gartner coined and popularized the term “business intelligence” in 1989 (Lawton, 2006). Today the term BI can be used to refer to:
1. Relevant information and knowledge describing the business environment, the organization itself, and its situation in relation to its markets, customers, competitors, and economic issues.

2. An organized and systematic process by which organizations acquire, analyze, and disseminate information from both internal and external information sources significant for their business activities and for decision making.

The purpose of BI is to aid in controlling the vast stocks and flow of business information around and within the organization by first identifying and then processing the information into condensed and useful managerial knowledge and intelligence. As such, the BI task includes little that is new and addresses very old managerial problems; it is one of the basic tasks of many management tools; that is, analyzing the complex business environment in order to make better decisions.

A typical example of a four-phase BI process model includes the following related phases:

1. Identification of information needs
2. Information acquisition
3. Information analysis
4. Storage and information utilization

In the first phase, the organization must find out what kind of business information is necessary to resolve different problems and to make successful decisions. This ensures that only relevant information is utilized in decision-making. The second phase, information acquisition, is driven by the business information needs and is considered a
complex function because there are many different sources of information both inside and outside an organization.

In the third phase, acquired information is analyzed and then packaged into different information products and services. The products and services are aimed at an organization's different user groups and information needs. Concerning the storage aspect of the last phase, the goal of a BI system is to make it possible for the decision makers to find the required business information as quickly as possible. Before the processed information can be utilized, information must be communicated to the critical decisions makers and disseminated at the right time with suitable tools. The main goal of the fourth phase is to share the knowledge analyzed in decision-making processes. In addition, the utilization phase cannot be effective if one of the earlier phases in the BI cycle has failed. Therefore, feedback is critical to optimize each phase of the BI cycle (Lonnqvist and Pirttimaki, 2006). BI systems have the potential to maximize the use of information by improving the company’s capacity to structure a large volume of information and make it accessible, thereby creating competitive advantage, what Davenport calls “competing on analytics” (Davenport, 2005).

2.4 Critical Success Factors of BI

In today’s brutal and uncompromising business environment, where competitors are more powerful, customers are more sophisticated and selective, demanding higher levels of service, quality and customization, companies that work smarter have competitive advantage. Rather than react crises and opportunities, these organizations anticipate them,
identify and resolve problems before they escalate into crises and reengineer internal processes and services to enhance customer satisfaction and loyalty. The secret weapon that these organizations use is BI. However, not all companies succeed with BI. It takes a considerable amount of money, time and business and technical leadership to create and sustain BI solution that delivers real value. Unfortunately, many executives underestimate the commitment they and their organizations need to make to ensure success.

The research director of The Data Warehousing Institute (TDWI), Wayne Eckerson (2003), has listed critical success factors of BI solution in his article “Smart companies in the 21st century: The secrets of creating successful business intelligence solutions”. According to him, business executives need to focus on six success factors to minimize BI project risks and increase the likelihood of success.

1. Establish a vision – One or more top executives must have a vision for how BI can advance the key strategies and objectives of the business. The project simply will not succeed if the top executives are not committed to it.

2. Evangelize the vision – Since BI acts as a change agent within an organization, the sponsor must actively spread the word about the importance of the project at all levels of the company. They should explain how the project will benefit the key players and their groups and what they need to do.

3. Prioritize the portfolio – Companies should tackle BI projects that are strategically significant to the company or business unit but not very large in scope that they are impossible to deliver. The key here is to establish a portfolio of BI applications that
fulfills the sponsor’s vision. Then prioritize the applications by their strategic value and deliver them incrementally over a reasonable period.

4. Allocate sufficient resources – Business sponsors need to secure initial funding to launch the project. More important, they need to sustain funding over the life of BI portfolio and allocate funds to build and maintain an enterprise BI infrastructure. They also need to hire and retain highly experienced and skilled BI professionals who can work full time on the project.

5. Align business and IT for the long haul – For BI success, there should be alignment between the business and the technical team. Technical developers should understand the business and spend lots of time with business users.

6. Build trust in the system – A key responsibility of business sponsor is to function as a change agent that gets users to shift from old to new ways of making decisions and analyzing information. Sponsors need to ensure the technical team does everything possible to avoid giving users excuse not to trust the new system. The most elegantly designed BI solution provides little business value if no one use it.

Mark Hwang of Central Michigan University cites that better communication of the value of BI, especially targeted at senior management is critical (2008). Having top management support/commitment helps remove many barriers to greater BI adoption. Equally important is that organizations leverage their existing enterprise technologies and experience with external data sources. Organizations are also advised to take advantage of proven technologies; work with vendors and consultants but foster and retain expertise
in-house and build BI activities around core competencies. Hwang also suggests proceeding gradually and following an iterative development approach.

O’Connell (2004) has listed tips to implement BI. They are:

1. Start with executive support
2. Evaluate current processes
3. Inventory and rationalize current information gathering systems
4. Bring IT managers on board by emphasizing new BI technology and the need to harness such systems
5. Seek BI vendors who can prove the breadth and integration of their platforms
6. Seek vendors who present a clear vision of how to integrate its products
7. Review company-wide information needs and decision-making facilitation requirements from the bottom-up
8. Designate a specialist to handle regulatory compliance/corporate governance issues.

2.5 Business Intelligence for CRM

Business intelligence is a process – a process of leveraging customer information to enhance corporate behaviors and improve relationship with current and target customers for enhanced profitability and competitive advantage. As companies expand their web of customers, they use BI to further mine the customer relationships. BI helps in consolidating, analyzing and providing vast amount of data for business decision-making (Phan and Vogel, 2010).
The discipline of business intelligence addresses a broad range of functional activities from data mining and statistical analysis to predictive modeling and reporting. Within the context of CRM, BI is the process of leveraging detailed customer behavior information to best manage relationships for maximum customer satisfaction, loyalty, retention and profitability (Hall, 2004). Getting the timing right for presenting offers to customers can improve returns on BI investments for marketing applications. Specifically, by tracking and managing customer transactions and interactions to identify the right offer to a customer at the right time, firms can capture a greater share of their customers' wallets. A key component of this BI strategy is a data management infrastructure that enables companies to recognize in real-time the changes in a customer's behavior that signal when there is a high probability that the customer will respond positively to an offer (Gessner and Volonino, 2005). Most businesses have a solid market research capability that helps them understand their customers’ needs and expectations. However, knowing customers is not enough. Companies must also know their competitive environment (Thomas, 2001).

Each organization has a different set of challenges and customized systems. However, there are some typical overarching objectives for a BI and CRM integration project that can be categorized as follows:

1. Collecting and consolidating data: Keeping everyone focused on the tasks and avoiding data collection overload.
2. Missing data: Storing data in a central location for marketing, sales and customer service. By integrating BI and CRM, the right information can be captured and added to the central repository.

3. Duplicate data: This is a common challenge with CRM applications. Many organizations consider integrating BI tools with CRM tools to reduce duplication (Wrocherinsky, 2008).

The challenges with BI and CRM integration

CRM’s context and solutions involve much more than BI reporting. For good CRM companies potentially need data warehouse content detailing some or all transactions and static profiles with:

1. Customer “touches” including the statistics plus the sales representative contact reports
2. Sales transactions and associated accounts receivable
3. Customer intelligence; the statistics, order patterns, etc. plus what the customers themselves and the industry is saying about our customers
4. Service calls and results; not just numbers, but also the comments from service personnel on issues as they arise
5. Customer complaints and resolutions; not just the numbers, but also the content and especially the trends
6. Call-center and telemarketing activity and intelligence; what the operators are learning from contacts, and the relevant statistics
7. Marketing promotion performance; how our marketing and promotional efforts are paying off

8. Competitor intelligence; what competitors are doing and saying and what the industry is saying about them

These data are drawn from both hard and soft (tacit) sources. Tacit information is vital part of an effective BI environment, and CRM is no exception – in fact it is a prime example of a field where collection and dissemination of tacit information is an absolute key (Brookes, 2006).

It is obvious that only the largest organizations can afford to collect all this information in finest detail. CRM for each enterprise, large or small, needs access to some or all of these databases, but it is the executive interface to them for reporting, inquiry, alerting and analysis that determines success or failure. The executive interface determines what must be collected and stored in the data warehouse.

Therefore, the BI specification for on-demand reports, pre-formatted inquiry responses, alerting messages, collaboration between sales, marketing, service and product professionals, decision support environment, etc. must drive the specification for the data warehouse content and the CRM application software.

BI requirements definition is not everything in CRM planning, but when it comes to ensuring success, it is truly the only thing that is important. All the rest is relatively straightforward (Brookes, 2006).
In addition to data collection problems, there are some other challenges which organizations face. To implement CRM successfully, a business needs to become wholly customer-driven. That requires radical change, experimentation, courage and faith. Customer-driven concepts cannot work in businesses, which have the following factors:

1. Command and Control Cultures - Businesses following orders from the top cannot achieve the customer focus or responsiveness required to succeed in a CRM environment. They are obsessed with upside-down values and are usually too introspective, bureaucratic and customer dysfunctional.

2. Centralized Marketing Decision-Making - Marketing, advertising and selling has to take place at the front line or as near as possible to it. Centralized decision-making of these disciplines precludes successful work in the soft issues of customer relationships.

3. Lack of desire to re-engineer sales and marketing - There has to be corporate-wide acceptance of the significance of customer loyalty, customer development and the need to be selective about whom you sell to. Moreover, to create seamless delivery, you must get rid of the seams. Without multi-disciplined teams of individuals who take full responsibility for groups of customers, failure is the only result (Robinson, 2001).
The findings about success factors of CRM and BI are summarized in Table 1.

Table 1:

*Success Factors Identified Through Literature Review*

<table>
<thead>
<tr>
<th>Literature</th>
<th>Success factors identified</th>
<th>Research methodology</th>
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<tr>
<td>CRM Croteau and Li (2003)</td>
<td>• Top management support&lt;br&gt;• Knowledge management capabilities</td>
<td>Surveys from CEOs or presidents</td>
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<tr>
<td>Chang (2007)</td>
<td>• Communication between staff</td>
<td>Case study analysis</td>
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<td>Rigby and Ledingham (2004)</td>
<td>• Highly focused approach to CRM with a relatively narrow scope for the projects.&lt;br&gt;• Healthy skepticism regarding the overblown claims of CRM vendors.</td>
<td>Research on CRM success stories</td>
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<tr>
<td>Plakoyiannaki et al (2008)</td>
<td>• Management focus on servicing the needs of employees&lt;br&gt;• Process change capability&lt;br&gt;• Systems integration capability.</td>
<td>Case studies</td>
</tr>
<tr>
<td>BI Eckerson (2003)</td>
<td>• Establish and evangelize the vision&lt;br&gt;• Prioritize the portfolio&lt;br&gt;• Allocate sufficient resources&lt;br&gt;• Align business and IT&lt;br&gt;• Build trust in the system</td>
<td>Survey and interviews with BI experts</td>
</tr>
<tr>
<td>Hwang (2008)</td>
<td>• Better communication of the value of BI&lt;br&gt;• Leverage and take advantage of existing, proven technologies&lt;br&gt;• Work with vendors, but foster/retain in-house expertise&lt;br&gt;• Iterative development approach</td>
<td>Web-based survey of business professionals</td>
</tr>
<tr>
<td>O’Connell (2004)</td>
<td>• Executive support&lt;br&gt;• Evaluate current processes&lt;br&gt;• Work with BI vendors</td>
<td>Research on current trends and practices</td>
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Chapter 3

METHODOLOGY

Conceptual frameworks are typically based on previous literature. In this research, I integrated the knowledge from the literature with learning from field-based interactions with experts to develop and refine the CRM and BI critical success factor framework. During my research, I was in contact with three talented CRM/BI professionals who are active in their roles as practicing consultants/managers.

Puneet Asthana is an SAP NetWeaver BI-certified independent consultant. He specializes in gathering and evaluating requirements, configuring SAP NetWeaver Business Warehouse and providing project management. He is a former principal consultant with SAP America, Inc. He has served as the lead consultant in many projects from the planning, system configuration and testing phases, through go-live and post-implementation support.

Vishal Mani is senior SAP-CRM consultant with Infosys Technologies. He is an onsite lead consultant for a Sales Force Automation (SFA) consolidation project. He is a SAP-certified SAP-Customer Relationship Management (CRM) marketing consultant specializing in sales and marketing modules of SAP CRM.

Vishal has more than eight years of IT experience. He has managed an offshore project for an electronic design major and has got it assessed at SEI-CMM Level 5. He is a Certified Software Quality Analyst (CSQA). He is an ESTEEM MVP (Most Valuable Professional) award winner for 2008.
Regi Mathew is currently working with Avaya Communications. He has more than 10 years of experience in the SAP with the past seven plus years dedicated to SAP CRM. He is CRM manager for overall sales process control and application support. He has also worked as business intelligence analyst. He has supported full SAP CRM applications including development and implementation, executed marketing campaigns to identify target accounts and quantify customer satisfaction and participated in design of BI tool for peripheral systems with effective use of CRM data. Their ideas and insights played an integral part of the whole research process and they are incorporated in the proposed framework.

3.1 Success Factors Identification

I had face-to-face and/or telephone interviews with three CRM experts. We began by identifying possible critical success factors from the CRM and BI literature. The outcome of this work was a short list of critical success factors, which were not identified through any journal articles or literature. I incorporated these factors in the framework and again discussed the modified framework with each one of the experts. Thus, everyone independently came up with his/her own view of the key success factors that also included the previously agreed on factors. Among the success factors, which were already identified through literature review, top management support and the data quality were regarded as the most critical success factors in CRM-BI integration by all the experts.
The initial framework was mainly based on the literature review, but the development of subsequent versions was refined by my interactions with the field experts. The framework went through major revisions; the final version appears in Table 4.

Before our face-to–face or telephonic discussion, I had already mailed the critical success factors framework I built based on literature review to Puneet Asthana, Vishal Mani and Regi Mathew, the BI/CRM experts. Therefore, when the actual discussion started, each of them knew exactly what I was looking for. During our meetings, I asked them very specific questions:

1. According to you, what are the most critical factors in CRM or BI implementations?
2. In my framework, are there any factors, which do you think are not “critical” for the success or failure of the project?
3. Are there any important factors, which I have not included in my framework, but need to be there?
4. What are the major differences that you notice between the clients with successful implementation and the clients who fail to achieve their objectives?

After a series of similar questions, I gathered the inputs from each of them and during our subsequent meetings; I shared each others’ thoughts and views with rest of the people to know their individual opinion. Therefore, although Puneet, Vishal and Regi were at different locations they got to know the details of discussions I was having with each of them. Sharing each others’ knowledge significantly helped in listing the factors which are really critical for the whole implementation process. Secondly, the order in which I
contacted them did not matter, as eventually everybody got to know all of the points and expressed their opinion on each of them.

One of the major success factors that was identified during our discussions was top management’s ability to quantify the main purpose. Many times the executives plan to implement CRM or BI technology solutions without giving much thought to the primary reason behind this implementation. So, the top executives must clearly define whether they want to have CRM-BI functionality to reduce costs, increase revenues or to increase their customer base. Once they define their goal, their next task should be to quantify their goal. According to Vishal, “just knowing the reason behind CRM implementation is not enough, companies should know the exact numbers.” e.g. the goal could be to increase the customer base by 10% in the next 3 years or to increase revenues by 15% in the next 5 years etc. Quantifying the main purpose is very important, as it will allow them to measure their return on investments, once the implementation is over.

Similarly, it is equally important to measure the gap between ‘as is’ and ‘to be’, when top managers make decision about implementing expensive tools like BI. Many a times the executives do not know the exact details about their organizations. When they say for example, that they intend to increase the revenues by 10%, first they must know how much revenue the company is generating right now, what is the average revenue for their industry and size and whether their expectation is too high or too low, compared to the other companies in the same industry. CRM or BI is just the tool, which helps companies achieve their goal, but most importantly, executives must focus on the quality of their
product or service. Sometimes, implementation of these tools will not be enough to win more customers or to generate more revenues. “They need to take everyone in the company on board to bridge the ‘as is’ and ‘to be’ gap”, Regi adds.

Vishal also mentioned the critical factors, which are not specific to the CRM and BI, but are applicable to any software implementation. But, still these factors could make or break the whole process, depending on how they are handled. These factors are: usability and performance of the system, integration with mobile applications and multi-lingual support. The usability refers to how user-friendly the system is. No matter how efficient the system is in utilizing the vast amount of data and producing fancy reports, the functional users could reject it if they have too many buttons to click or too many keys to hit, while working on it. The same thing is with the performance. Today, everybody wants results at the spur of the moment. Even if the system need 5 or 7 seconds more to generate a report, users could throw away the system thinking it is too slow. According to Puneet, Microsoft Excel is the most widely used BI tool for many years, people always tend to compare the new BI tools with Excel. Therefore, it is very crucial for the top managers as well as vendors to get the approval from the business people as far as usability and the performance is concerned.

To make CRM and BI more effective, it is imperative to have their integration with mobile applications. The sales representatives or even managers do need to access these systems from a mobile phone or PDA with internet access for the purpose of building and maintaining relationships between a company and its customers.
Just like any other ERP software, it is necessary to have multilingual support for CRM applications to sustain in global market.

After all the discussions and exchanging the information with each other, only one executive level and one operational level factor was regarded most critical for the success of the project. All of the experts unanimously agreed that quantifying the main purpose of the CRM-BI project and integration with mobile application are the two important factors. Therefore, they are incorporated in the refined framework.

Since usability and performance, though important are not limited only to CRM-BI implementation. Hence, after a few discussion sessions, it was decided not to include them in the proposed framework. Similarly, multi-lingual support is also an important factor, but certainly not very critical for the success or failure of the project, especially for some organization which does not have global presence.
Chapter 4

CRITICAL SUCCESS FACTOR FRAMEWORK FOR BI-CRM IMPLEMENTATION

A recent survey from business intelligence quotes success rates for BI and CRM implementations at around 10% (Robinson, 2001). CRM-BI implementation needs understanding, commitment, energy and passion. To overcome all the above challenges every single individual in the organization needs to be in on it and up for it. As business grows, flexible, responsive decision making gets harder and harder.

To contribute to a reduction in failure rate, a new critical success factor framework is proposed based on a review of literature.

Through extensive research, it is evident that more and more organizations are turning to customer relationship management and integrating it with the business intelligence tools to drive revenue growth, productivity and customer satisfaction. However, a great number of these organizations have not achieved all of the benefits they had hoped for. They encountered problems ranging from BI-CRM integration challenges to user acceptance. The good news is that all of these of problems are avoidable—if the CRM and BI implementation is well designed and executed. Indeed, when properly deployed, CRM solutions produce a significant return on investment by streamlining business processes and providing frontline employees access to richer and more integrated customer information.
4.1 A Critical Success Factor Framework

Based on the research of scholarly and practitioners’ articles, a new critical success factor framework for CRM-BI implementation is proposed. If the organizations involved in this implementation adhere to these guidelines, they will avoid common pitfalls of CRM-BI integration and be in position to realize a significant return on investment.

Table 2:

*A Critical Success Factor Framework*

<table>
<thead>
<tr>
<th>Executive Level</th>
<th>Operational Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>People</strong></td>
<td><strong>People</strong></td>
</tr>
<tr>
<td>• Establish a vision (Eckerson, 2003)</td>
<td>• Communication between staff (Chang, 2007)</td>
</tr>
<tr>
<td>• Top management support/commitment (Croteau and Li (2003) and Hwang (2008),</td>
<td>• Work with vendors/consultants, but foster in-house expertise (Hwang, 2008)</td>
</tr>
<tr>
<td>O’Connell, (2004))</td>
<td></td>
</tr>
<tr>
<td>• Servicing employee needs (Plakoyiannaki et. al, 2008)</td>
<td></td>
</tr>
<tr>
<td>• Build trust in the system (Eckerson, 2003)</td>
<td></td>
</tr>
<tr>
<td><strong>Processes</strong></td>
<td><strong>Processes</strong></td>
</tr>
<tr>
<td>• Culture change/customer orientation (King and Burgess, 2008)</td>
<td>• Iterative development approach (Hwang, 2008)</td>
</tr>
<tr>
<td>• Process change capability (King and Burgess, 2008)</td>
<td></td>
</tr>
<tr>
<td>• Align business and IT (Eckerson, 2003)</td>
<td></td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td><strong>Technology</strong></td>
</tr>
<tr>
<td>• Knowledge management capabilities (Croteau and Li, 2003)</td>
<td>• System integration capability (King and Burgess, 2008)</td>
</tr>
<tr>
<td>• Technological readiness (King and Burgess, 2008)</td>
<td>• Data quality (Hubley, 2001)</td>
</tr>
<tr>
<td>• Highly focused approach for development and relatively narrow scope (Rigby and</td>
<td>• Leverage existing technology (Hwang, 2008)</td>
</tr>
<tr>
<td>Ledingham, 2004)</td>
<td></td>
</tr>
</tbody>
</table>
The proposed framework groups the critical success factors (CSFs) mainly into executive level or operational level factors. The reason behind this is that executive level or strategic planning is often overlooked during a CRM initiative. In many cases, software is purchased based on features, with the hope of evolving to a strategic success. Planning must always come before operational initiatives or CRM initiatives are destined to fail. Moreover, when CRM is integrated with BI, the users assert that the system is less about efficient processing and more about efficient decision-making. Therefore, it is necessary to focus on top managers’ responsibilities and differentiate them with operational factors.

The CSFs in the proposed framework are further categorized based on Finnegan and Currie’s multilayered approach to CRM implementation. According to Finnegan and Currie, CRM involves three major layers: people layer, process layer and technology layer.

**People layer** – Implementing a CRM strategy means involving a wide variety of people – frontline sales, marketing and service providers, business analysts, IT professionals, and a broad array of managers, all of whom must collaborate to ensure that a CRM strategy is well defined, delivered and deployed. Obviously, this diversity creates accountability issues and complicates the challenge of persuading employees to embrace this strategy.

**Process layer** – In CRM, it is the business process, which needs to be transferred from product focused to customer-centric. It is a continuous effort that requires redesigning core business processes starting from the customer perspective and involving customer feedback.
Technology layer - CRM strategies take full advantage of technology innovations with their ability to collect and analyze data on customer patterns, interpret customer behavior, develop predictive models, respond with timely and effective customized communications, and deliver product and service value to individual customers.

A new CSF framework for CRM-BI implementation designed with executive and operational level distinction and integrated with multi-layered framework of CRM can assist companies in developing their CRM strategy through a greater understanding of how different variables interact in constantly changing environment.

4.2 Executive Level Critical Success Factors

These factors make the whole organization ready for the change. Top management support refers to the extent to which information technology implementation efforts are promoted by the top management in an organization. This dimension is especially important in situations where a redesign of work processes and functional activities is likely to occur. Top management support is a widely accepted CSF in the MIS literature (Croteau and Li (2003), Hwang (2008) and O’Connell (2004)). Past innovation studies have also reported a positive association between top management support and observed innovation behavior in organizations. Therefore, top management support is proposed to be a critical factor that influences the impact of CRM initiatives and diminishes resistance to change.
The top managers need to have a vision for how CRM or BI can advance the key strategies and objectives of the business. The executives should evangelize the project vision from top and explain how the project will benefit the organization (Eckerson, 2003).

One more key responsibility of the executives is to function as change agent that gets users to shift from old to new ways of making decisions. Building trust in the system is very important (Eckerson, 2003).

Successful customer relationship also requires a management focus on servicing the needs of employees (Plakoyiannaki et. al, 2008). Employees’ feelings of trust in the work setting can encourage meaningful sharing of timely information for meeting customer needs and cooperation in customer value creation and delivery.

Changing the business culture to be customer-centric can be a significant challenge because of the long-term dominance of the product view. It is vital to change the measures on which business performance is assessed. This also allows the organization to benchmark how well it is progressing towards CRM (King and Burgess, 2008).

The executives of the organizations implementing CRM and BI will have to make sure that their employees are flexible to adopt the new processes that come along with these implementations and whether the organizations are ready for the technological change (King and Burgess, 2008). CRM involves Business process Reengineering (BPR) which means redesigning of existing workflows and processes and implementing new ones. BPR is a customer-focus, top-down management effort to establish breakthroughs in the performance of inter-functional processes.
Business and IT alignment is yet another critical success factor. In successful CRM-BI projects, responsibility of the design and implementation rests with both business sponsors and technical personnel. It is crucial that IT and business managers align behind a well-defined set of measurable objectives, which in turn guide system design (Eckerson, 2003). Knowledge management capability is the ability of an organization to capture, manage, and deliver real time authenticated customer, products, and services information in order to improve customer response and provide faster decision-making based on reliable information. The information-based capabilities perspective addresses the need for access to customer or client information, competitor information, product/market information, human resource information, and up-to-date financial status. The technology-based capabilities perspective looks into issues such as wider bandwidth, web-based products, search engines, navigational tools, global IT infrastructure, interoperability of existing data systems, and fast retrieval. Finally, the culture-based capabilities perspective refers to characteristics such as practical guidelines to knowledge management systems, facilitation of organizational change, and promotion of knowledge sharing. It is important for organizations to develop knowledge management and to possess adequate knowledge management capabilities in order to succeed (Croteau and Li, 2003).

The companies that have been successful in implementing CRM systems have taken a pragmatic, disciplined approach to CRM, launching highly focused projects that are relatively narrow in their scope and modest in their goals. Rather than use CRM to
transform entire businesses, they have directed their investments toward solving clearly defined problems within their customer relationship cycle (Rigby and Ledingham, 2004).

4.3 Operational Level Critical Success Factors

While top executives have their own responsibilities toward BI-CRM project success, operational staff has to be equally committed to achieve the goal.

CRM is communication. Communicating with key stakeholders is critical, but communications within staff members are just as critical (Chang, 2007). A team approach is essential for effective relationship building. The important information has to get to everyone that needs to know it and if staff does not know what each other are working on, then the organization and synchronization of work will not be sufficient.

BI involves data warehousing tasks to extract, clean, model, transform, transfer and load transaction data from CRM system. These tasks take a tremendous amount of time and effort and require deep understanding of business. Therefore, no matter how business savvy the technical team is, it still cannot perform this work without step-by-step guidance from expert consultants who can interpret the data and define rules for gluing it back together. However, ultimately, the technical team will be responsible for the day-to-day maintenance of the system (Hwang, 2008).

Many BI experts recommend that BI teams work in three to four month project increments with each increment demonstrating relevant value to the business. This “go slow” incremental approach not only reassures executives that their vision will be fulfilled; it also enables developers to adjust and adapt the system to evolving user
requirements without suffering expensive, time-consuming rewrites. Incremental projects foster iterative development, which means that technical developers do not need to specify the entire BI architecture upfront. Rather, the architecture evolves with each iteration and increment (Hwang, 2008).

From strategic perspective, CRM implementation has an organization-wide influence. Different functions and departments of the organization should be integrated and connected with a structure that supports the flow of information. Although all aspects of the organization should be integrated, a special consideration should be devoted to functions that have direct interaction with customers such marketing, sales, and services. Such integration is required to deliver a unified view of the organizations and its products to the customers (King and Burgess, 2008).

The success of the BI solution very heavily depends on the data quality and eliminating the age-old adage of ‘Garbage In, Garbage Out’. Data quality is the state of completeness, validity, consistency, timeliness and accuracy that makes data appropriate for a specific use. Operational team must make every effort to understand data and resolve data quality issues (Hubley, 2001).

When companies plan to integrate CRM and BI, they must first look for leveraging and reusing existing data integration technologies and expanding these capabilities as needed. Rather than buying yet another data and application software, they should critically examine whether they have already implemented data integration platform (Hwang, 2008).
In the ‘Case Studies’ chapter, case studies are provided along with general discussion of critical success factors applications in those organizations. Not all of the factors are applied in all of these cases. For some it is due to a lack of available information. But mainly, the emphasis is placed on how the factors identified in the proposed framework are important for the success of CRM-BI implementation.
Chapter 5

CASE STUDIES

The following two case studies, Continental Airlines and Northern Tool and Equipment Co. demonstrate the complex interaction of executive level and operational level factors and show how these factors affect the final project outcome.

The strategic objectives of both the organizations were to improve the customer service. To achieve this goal, these two organizations focused on the combination of executive and operational factors.

5.1 Continental Airlines

Company background information - Continental airlines was founded in 1934 has grown and successfully weathered the storms associated with highly volatile, competitive airline industry. With headquarters in Houston, Texas, Continental is currently the USA’s fifth largest airline and the seventh largest in the world. It has approximately 2300 daily departures, to more than 227 destinations. Continental, along with Continental Express and Continental Connection, now serves more destinations than any other airline in the world.

Situation - Only ten years ago Continental was in trouble. Among ten major US airlines, it consistently ranked tenth in the Department of Transportation metrics, which monitor the industry’s performance on baggage handling, on-time arrivals, customer complaints and denied boardings because of overbooking. With this kind of metrics, Continental was
in financial trouble. It had filed for chapter 11 bankruptcy protection twice in the previous ten years and was heading for a third. It had also gone through ten CEOs in ten years.

Task - In 1994, the new CEO Gordon Bethune took the control and conceived and sold the “Go Forward” plan. His team’s main task was to create enterprise data warehouse that would provide a single source of information and give employees quick access to key information about the business and its customers. Historically each department of Continental had its own approach of data management and reporting. The airline lacked the corporate data infrastructure.

Gordon Bethune his management team set another task to be not just “first”, but their customers’ favorite airline. They wanted to increase revenues, profits and customer service by understanding customers’ preferences and catering to them in such a way that they choose to spend additional dollars with Continental. Increasing employee satisfaction was one more major task, which Bethune handled. When he took over, employees and the customers had been treated poorly and were angry. His goal was to create and maintain service-oriented culture.

Action – On technological front, Continental implemented real-time BI and CRM along with enterprise data warehouse. The marketing tem created innovative CRM applications that leverage the data warehouse’s real-time capabilities. In addition to technical improvements, Bethune developed “Go Forward” plan having four components, all of
which had to be executed simultaneously. They dealt with market, finances, product and people.

The market plan: Fly to Win - Continental committed to the seemingly obvious -- stop doing things that do not make money. Losses had to be replaced with profits if the airline were to survive. This required multiple actions. Non-profitable routes had to be dropped. Continental would fly only to places where people wanted to go and were willing to pay a fair price. Relationships with customers had to be improved, especially with high- value business travelers. Consequently, the award winning frequent flyer program was restored. Any costs that did not create value for the customer were cut.

The Financial Plan: Fund the Future - Continental was quickly running out of money. This was not immediately obvious because the cash and cost forecasting systems were so poor, but the bleeding had to be stopped. Loans were renegotiated to stretch over a longer time period. The company was able to get out from under leases for planes that were unprofitable to fly. Costs were cut wherever possible. The CFO personally signed every large check. A significant investment was made to improve the financial reporting systems so that there was reliable information.

The Product Plan: Make Reliability a Reality - Continental had to get back to what people expected of an airline. The only way to do this was to motivate employees. Following the dictum, “what you measure and reward is what you get,” Continental implemented a measurement and reward system that provided incentives for employees to make Continental a more reliable airline. It also did away with an employee manual that was so restrictive that it sometimes eliminated the employees’ ability to do what was
most logical. An 800 number with an operational response team on the other end was set up to respond to problems in the field. When customers had problems and complained about service, Continental quickly responded, apologized, and took appropriate steps to correct the problem.

The People Plan: Working Together - Continental had to change its corporate culture. Continental needed to treat its people better and get them working together as a team. People should want to come to work and be proud of their employer. In meetings and through other communications, employees were told the importance of teamwork and treating one another with dignity and respect. A 360-degree review process was put in place to measure how well managers communicated and encouraged their teams. Employees were trusted to use their judgment and to make the right decisions. If they did not buy into this new culture, they were let go.

Result – Continental invested approximately $30 million in real-time BI and CRM and has realized over $500 million in increased revenues and cost savings, resulting in a ROI of over 1000 percent. The benefits of BI range from better pricing of tickets to increased travel to fraud detection. A targeted CRM program resulted in $150 million in additional revenues in one year. The most important factor behind Continental’s success was that their senior management had a vision of merging information that was scattered across the organization, enabling employees in all departments to conduct the business analyses required to execute better and run a more profitable airline. The creation of data
warehouse enabled the integration of customer information, finance, flight information and security. Continental’s marketing department uses data warehouse for customer segmentation and direct marketing and loyalty/retention management. Every month customer value analysis is performed using data warehouse. One more key to Continental’s success is service-oriented culture. Bethune opened communications and found ways to measure and reward cooperation. These actions helped make Continental a place where people want to work. Continental does an excellent job of communicating news, plans and issues through meetings, posters etc. Employees regularly share stories of outstanding customer service.

The leadership of Gordon Bethune, the Go Forward Plan, and Continental’s employees moved the airline from “worst to first.” They helped Continental do what an airline should do – get people to their destinations, safely, on-time, and with their luggage.

5.2 Northern Tool and Equipment Co.

Company background information - Northern Tool and Equipment, founded in 1981, is a tool and power equipment retailer headquartered in Burnsville, Minnesota. CEO Donald Kotula and his family started the business as a mail-order shop out of their garage. It has now 65 retail stores in 11 states. With more than 20000 products in its inventory, it offers a wide selection of products from consumer goods to industrial and construction equipment for do-it-yourselfers, contractors, landscape crews, and professional shops. Now it has websites serving USA, UK and Canada, international sales channels, a
growing chain of retail stores and over 10 million business and consumer customers. They have European operation, based in Portsmouth, United Kingdom, selling to similar customers via regular catalog and internet. Mail order catalog is still company’s largest source of revenue.

Situation – Northern Tool did not have in-house database. It was away at the third-party provider. Therefore, the company was not in a position to make better promotional decisions and predict outcomes based on past events. Their existing data from internal and external sources was not integrated, so they were not in a position to implement advanced analytics.

Task - Northern Tool wanted to grow sales with better understanding of customer behavior across retail, online and direct mail channels. This 25-year-old company wanted to interact with customers in a completely new way. The marketing department also wanted to better segment customers and bolster internal records with third-party data. Since direct mail was a major channel for the company, marketing wanted to select better mailing lists, especially for the annual mailing of a 552-page catalog to 4 million customers. Longer-term, the company wanted to bolster its customer intelligence by analyzing behavior across channels using predictive analytics.

Action - Vice president of IT knew that it was not going to be just an IT project, so he brought marketing department to work together with IT to define requirements, pick
technology tools and manage migration and integration of more than 10 years of marketing and transactional history. To implement advanced analytics and marketing automation, they brought its marketing database in-house. Their first priority was to integrate data sources like demographic information, weather conditions etc. for better target marketing. For informed mailing lists selections, they developed response models to predict outcomes. They first focused on short-term marketing goals. IT team selected SAS Institute as their vendor and worked with them to design and create new database and install and test SAS tools. To ensure data quality, the company relied on customer service representatives verifying information via phone and batch cleansing from third party provider. During the second phase of implementation, the project team tested the database and trained marketing people on interface. Eventually, they also planned to use location-specific information as a part of a new trend toward location intelligence, so that a customer in a region experiencing storms, for example, might get well-timed offer for generators or emergency equipment.

Result – During the six months period of implementation, there were no major surprises and the project stayed on schedule. After the implementation, Northern Tool had reasonable expectation from the whole project. Better customer segmentation quickly resulted in more effective direct mailings. They expected 5% growth in sales and revenues in the first year, which was a notable gain from a technological implementation and then gradual growth in subsequent years.
Chapter 6
DISCUSSION

6.1 Summary of Case Studies

The case studies in the previous chapter reveal that these organizations were successful in implementing CRM and BI solutions because some of the critical success factors in the proposed framework are evident in their implementation process which helped them to achieve their goal and receive maximum return on their investment. Top management support and customer-oriented culture were the most important factors behind their success.

Continental’s CEO had a vision about the company’s future. He wanted Continental to be the most reliable and favorite airline in the industry. To make this dream a reality, Continental’s senior management merged scattered information into a single source to conduct business analysis to run a better and more profitable airline.

Moreover, Continental has perfectly aligned business with IT. Its marketing department uses the data warehouse for customer segmentation, target marketing, loyalty/retention management, customer acquisition, channel optimization etc. Through data warehouse Continental identified its high-value customers and created “Elite Access” program to provide them exceptional service.

Along with business strategy and technology, the CEO gave equal importance to the culture. Continental’s employees believe that people should be treated with dignity and respect.
Northern Tool management had a vision of increasing sales with better understanding of customers. The management aligned marketing and IT departments to define requirements, pick technology tools and manage migration and integration.

Communication was very important, as the project was lead by marketing as well as IT managers. They adopted highly focused approach by first setting the priorities and concentrating on a limited area at a time.

The management of both the companies decided to take the help of vendors for their implementations – Continental hired Teradata and Northern Tool selected SAS as their vendor. However, at the same time they also trained their employees to maintain the system on day-to-day basis. Data integration is another challenge, which Continental and Northern Tools handled successfully. Continental integrated the data related to flight schedule, frequent flyer status of their customers, reservations etc, whereas Northern Tool integrated weather and location related data to serve their customers better. For data and system integration, it is important to have good communication between staff, which is promoted by the senior executives at both the companies.

Because of careful planning and focused approach, these organizations were successful in implementing BI-CRM solutions. They have exhibited most of the success factors, which are proposed in a new framework.
Table 3:

**Summary of Case Studies – Critical Success Factors Exhibited**

<table>
<thead>
<tr>
<th>Name of the organization</th>
<th>Executive Level</th>
<th>Operational Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continental Airlines</td>
<td>People</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Establish vision</td>
<td>• Communication between staff</td>
</tr>
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<tr>
<td>Technology</td>
<td></td>
<td>• System integration capability</td>
</tr>
<tr>
<td>Northern Tool and Equipment Co.</td>
<td>People</td>
<td>• Top management support</td>
</tr>
<tr>
<td></td>
<td>• Communication between staff</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Technological readiness</td>
<td></td>
</tr>
</tbody>
</table>

6.2 The Final Critical Success Factor Framework for BI-CRM Implementation

Based on literature review, discussions with BI/CRM experts and case study analysis, the final critical success factor framework is presented. It has the factors identified through methodology along with all the factors in the original framework.
During my discussions with Vishal, Puneet and Regi it was concluded that quantifying the main purpose and integration with mobile applications were two critical factors which need to be included in the proposed framework.

Table 4:

The Final Critical Success Factor Framework for BI-CRM Implementation

<table>
<thead>
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</tr>
<tr>
<td>• Top management support/commitment (Croteau and Li (2003) Hwang, 2008 and O’Connell (2004))</td>
<td>• Work with vendors/consultants, but foster in-house expertise (Hwang, 2008)</td>
</tr>
<tr>
<td>• Servicing employee needs (Plakoyiannaki et. al, 2008)</td>
<td></td>
</tr>
<tr>
<td>• Build trust in the system (Eckerson, 2003)</td>
<td></td>
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<tr>
<td>Processes</td>
<td></td>
</tr>
<tr>
<td>• Quantify the main purpose (methodology)</td>
<td>• Iterative development approach (Hwang, 2008)</td>
</tr>
<tr>
<td>• Culture change/customer orientation (King and Burgess, 2008)</td>
<td></td>
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<tr>
<td>• Process change capability (King and Burgess, 2008)</td>
<td></td>
</tr>
<tr>
<td>• Align business and IT (Eckerson, 2003)</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td></td>
</tr>
<tr>
<td>• Knowledge management capabilities (Croteau and Li, 2003)</td>
<td>• System integration capability (King and Burgess, 2008)</td>
</tr>
<tr>
<td>• Technological readiness (King and Burgess, 2008)</td>
<td>• Data quality (Hubley, 2001)</td>
</tr>
<tr>
<td>• Highly focused approach for development and relatively narrow scope (Rigby and Ledingham, 2004)</td>
<td>• Leverage existing technology (Hwang, 2008)</td>
</tr>
<tr>
<td></td>
<td>• Integration with mobile applications (methodology)</td>
</tr>
</tbody>
</table>
Chapter 7

CONCLUSION

Business executives need to focus on people, process and technology related success factors to minimize project risks and increase likelihood of success. Interestingly, the keys to success are not limited to technical in nature. Projects do not succeed because they use an innovative design or radical new technology. They succeed because of the “soft” stuff—leadership, communication, planning, and interpersonal relationships. Organizations must master these as much as the technical designs and tools required to deploy BI and CRM solutions.

It is also interesting to note that though operational team is the one who actually works on the implementation, the executives have equal or even more important role to play in these implementations. All technical issues including infrastructure and analytical tools require business oversight and guidance to be implemented correctly.

Business intelligence and CRM together can provide significant value to the organization. They can provide high ROI and be a critical enabler of key business strategies and tactics for competing in an increasingly tough marketplace. By following proposed critical success factors, any organization will be better able to extract value from BI and CRM.

The framework, which I propose in this paper, offers a potentially useful starting point for the development of improved insight into the aspects of business intelligence and customer relationship management integration. The task of agreeing on the critical success factors will be an evolving process. I do not attempt to build industry-specific CSF framework in the current work; however, I emphasize the importance of CRM-BI
integration in different industries and related success factors specific to the particular industry segment as an area in which further research is needed. Similarly, there could be different set of success factors depending on the size of the organization, area of operation – local/global, type of the business – B2B or B2C etc. Identifying the critical success factors for each of these segments will be a completely new research area, for which the proposed framework will serve as a foundation.
BIBLIOGRAPHY


