Building the CRM Foundation:
A Process Capability Framework
for Customer Relationship Management

Jeff J. Pittaway

TABLE OF CONTENTS

ABSTRACT

This paper studies certain established service quality approaches to define a process-based foundation for implementing best practices in Customer Relationship Management (CRM). CRM is the operational component of managing shareholder value in the marketing, sales and service areas of the business. CRM practice involves understanding the customer, understanding the organization, and continuously improving service quality. Done well, the firm acquires, retains, and nurtures the right customers based on an understanding of their needs and their long-term value to the firm. Increased value of the customer base reflects in increased shareholder value.

Most managers would not undertake manufacturing or accounting without formal processes and systems because they recognize that leads to quality failures, higher costs, and increased risk. Yet too many growing organizations have an ad hoc approach to the front office of the business. Instead, a short-term focus on financial results that actually destroys economic value pervades many organizations. Much has been written about new customer relationship marketing, e-business and customer loyalty strategies. It is far more difficult to find specifics on how to determine organizational CRM competencies, then link strategy, technology, processes and employees in an integrated customer-oriented structure. This study was conducted to help close that gap.

There are 13 stages in the Customer Resource Lifecycle through which a customer transitions in a buying cycle. At each stage the firm influences future customer buying behaviour through both visible cues and the impact of the less-visible supporting functions of the firm. CRM requires an enterprise-wide approach to customer care that involves an integration of the front and back office through revamped business processes.

The CRM Process Capability Framework, developed from the established CMMI® model from another service quality management discipline, identifies five levels of capability:
- CRM Level 1 is the lowest and is characterized by ad hoc customer relationship processes where success often depends on individual heroics. It may well be profitable, but the firm is reactive and frequently wrestles with emergencies. Technology in Level 1 firms typically consists of silos of disconnected tools.
- CRM Level 2 capabilities emerge from standardized, repeatable transactional CRM processes where employees understand their role in the process and are accountable to standards, where dependencies such as suppliers are recognized, and where technology coordinates transactional processes.
- CRM Level 3 capabilities add an organization-wide dimension where a library of standards and approved meta-processes exist and where transactional processes are developed by tailoring standardized processes along guidelines. Risks, customer requirements, and dependencies are actively managed. CRM technology is integrated enterprise-wide to support collaboration and performance metrics.
- CRM Level 4 capabilities implement management by quantitative CRM metrics and controls that employ standards and baselines that are aligned with business objectives.

- CRM Level 5 denotes an organization that regularly analyzes CRM data, metrics, controls and performance at senior levels, and then takes action to improve processes, to innovate, and to capitalize on emerging opportunities.

This CRM Process Capability Framework includes specific practices, documentation, reports and other evidence that CMMI authors identified in firms that have successfully achieved a characteristic level of process maturity. The Framework recommends specific metrics which a firm should monitor to improve CRM competency and economic value. These metrics include a "customer equity" balance sheet and cash flow that provide visibility and accountability for long-term economic value created or destroyed in the current period.

The Framework specifies an appraisal methodology applied by seeking this evidence in one's own firm, objectively rating the capability, and identifying gaps, improvements, and progress over time.   The Framework also includes several tools for the firm to prioritize CRM investments.

By following the recommendations of the CRM Process Capability Framework, CRM champions should be able to objectively appraise, propose and implement improved CRM capability using terms that are familiar to most managers. Ultimately, when the organization improves process capability in Customer Relationship Management, they have improved their ability to consistently meet commitments and created sustainable competitive advantage. It is a win-win situation for forward-thinking organizations, their shareholders and their customers alike.

GLOSSARY

- B2B – Business to Business sales, marketing, transactions.
- B2C – Business to Consumer sales, marketing, transactions.
- Back office – Those functional areas of the business that do not typically have direct contact with the customer but provide a support function such as accounting, manufacturing, or distribution.
- CE – Customer Equity: A broader concept than Lifetime Value that conceptualizes the LTV of a customer base as an asset that has value that changes with investments in that asset.
- CMM® and CMMI® – The (integrated) Capability Maturity Model for software engineering published by Carnegie Mellon University.
- CLV – Customer Lifetime Value: See LTV – Lifetime Value.
- CRLC – Customer Resource Lifecycle: The 13 stages a customer goes through for a purchase, from the initial spark of interest through fulfillment to final retirement or disposal.
- CRM – (As used in this paper) refers to strategic Customer Relationship Management in a broad context (see chapters 1 and 4 for detail).
- EDI, e-Commerce – Electronic Commerce: Interactions with a customer via electronic means such as internet shopping or electronic transactions through Electronic Data Interchange networks.
- EFE – External Factors Analysis: A grid used to rate opportunities and threats presented by the external environment such as the economy, market and competitors; a component of strategy selection using the Quantitative Strategic Planning Matrix.
- ERP – Enterprise Resource Planning: Encompasses Accounting, transactional Order Entry, Quoting, Inventory Control, Order Processing, account setup, credit management, invoicing and collections. Also refers to reports stemming from accounting and transactional data that may be used for planning purposes such as ensuring adequate inventory and human resources on hand to meet anticipated orders.
- ETA – Estimated Time of Arrival.
- Front office – Those functional areas of the business that interact with clients directly or support visible deliverables to clients.
- Functional Areas – Similar to departments within a business but used to group related functions that may cross departmental boundaries or identify one of many function sets performed in a department.
- HR – Human Resource: Refers to either the broad concept of human resource management, or to capacity and availability of human resources, depending on the context.
- IFE – Internal Factors Analysis: A grid used to rate internal strengths and weaknesses; a component of strategy selection using the Quantitative Strategic Planning Matrix.
- ISO – International Standards Organization: The governing body of the ISO family of standards and certifications including the process standards of ISO9001.

- ITIL – IT Infrastructure Library: A set of standards originally produced by the U.K. government to assess the capability of software engineering organizations to meet their service level commitments.
- KPA – Key Process Areas. See also Process Areas.
- KPI – Key Performance Indicators: Measures established by the organization as baselines against which business conditions, performance and parameters are monitored and reported.
- LTV – Lifetime Value: A measure of current and projected profits derived from ongoing business with a given customer or base of customers.
- MRP – Materials Requirements Planning (sometimes extended to Manufacturing Resource Planning).
- PAL – The organizational Process Asset Library of forms, standards, guidelines, tools, etc. to be used when developing and conducting processes.
- PAs, Process Areas: A term coined by the authors of CMMI to group a set of practices with a common purpose. Process Areas are a fundamental organizational feature of CMMI models.
- QSPM - Quantitative Strategic Planning Matrix: a grid approach to rating alternative strategy investments relative to the internal and external factor ratings.
- R.O.I. – Return on Investment: A measure, typically financial in nature, used to determine the anticipated or actual benefits of making an investment in a program, initiative, resource or technology. May also be stated as time, such as "9 months", wherein it refers to the time span before the accrued benefits are expected to meet and then exceed the original investment ("payback time").
- SCAMPI^{SM} – The Standard CMMI Appraisal Method for Process Improvement.
- SEI – Software Engineering Institute: the group related to Carnegie Mellon University that developed CMM and CMMI.
- SIMM – Service Integration Maturity Model: IBM's proprietary process maturity model.
- SOA – Service Oriented Architecture.

1.0 INTRODUCTION

Customer Relationship Management (CRM) has been a hot topic from both business discipline and information technology perspectives. Although CRM has received considerable investment in many large enterprises, the need for an integrated approach is not clearly understood by many growing mid-market companies.

The concept of Customer Relationship Management has evolved from years of studies on the buyer-seller relationship. Mack, Mayo and Khare (2005, pp. 99-100) defined Strategic CRM as the operational component of managing shareholder value in the marketing, sales and service areas of the business. In practice, the right customers are acquired, retained, and nurtured based on an understanding of their needs. Increased value of the customer base reflects in increased shareholder value.

But according to Peppers and Rogers (2005, p. 142), "to change your customer's behaviour, you must first change your firm's behaviour". Brown and Gulycz (2002, pp. 27-29) of PriceWaterhouseCooper's CRM consulting practice expanded on this point:

> "Three programs are critical to CRM performance: understanding the customer, understanding the organization, and continuous improvement in service quality. [It involves] strategic, process, organizational, and technical change. It crosses the various points of contact with the customer (known as touch-points) to balance profits with maximum customer satisfaction… CRM requires an enterprise-wide approach to customer care that involves an integration of the front and back office [through] revamped business processes."

Much has been written about new customer relationship marketing, e-business and customer loyalty strategies. However, specifics are lacking on how an organization can be sure to realize the new "CRM" behaviours, quality service standards, and benefits in the day to day operation of the firm. Mack et al (2005, pp. 99-100) pointed out that strategy, technology, processes and employees have to be linked in an integrated customer-oriented strategy. To do so, a firm must determine its organizational structure and competencies and it must manage performance with strategy, metrics and action plans (Brown and Gulycz, 2002, pp. 27-29).

This paper is dedicated to defining how an organization can identify and close those gaps. It explores quality management and process management principles commonly employed in the operational side of the business. It studies how customer relationships are influenced, and by whom. This paper builds upon an established service quality management model to create a framework for implementing and managing customer relationship competencies. It defines new metrics that make customer value a visible part of management and it provides processes for conducting self-appraisal and implementing continuous improvement.

2.0 THE PROBLEM

Most managers would not undertake manufacturing without formal processes and manufacturing and distribution systems. They would not undertake accounting without formal processes and an accounting or ERP system. Generally speaking, managers recognize that a lack of processes and systems in the back office leads to quality failures, higher costs, and increased risk.

Yet too many growing organizations have an ad hoc approach to the front office, the areas of the business that most directly influence customer perception and purchasing behaviour. Such a loose approach stands in stark contrast to the fact that customers are uniquely valuable to the firm and that they represent considerable investment. Peppers and Rogers (2005, p. 3) said,

> "Let's face it: businesses gauge their success today almost entirely in terms of current-period revenue and earnings… [But] the more short-term a company's focus becomes, the more likely the firm will be to engage in behaviour that actually destroys long-term value. The obsession at many firms has generated a pervasive culture of bad management."

Downsizing stories abound that involve large cuts to customer-facing resources, such as customer service call centres. Intuitively, it is myopic for senior managers to target these areas of the business to prop up short term financial results without recognizing the long term loss of economic value. While the cost cuts are visible to shareholders today, the negative impact may never be, although it is real nonetheless. Naumann, E., & Shannon (1992, p. 49) provided a simplistic example:

> "Gem Processing is a specialty chemical company with annual sales of approximately $10 million [growing 10% per year] generated from a customer base of about 1,000. Eighty percent of its sales come from [established] customers. The annual customer turnover rate is 20 percent. Because its average customer spends $10,000 annually on its products, the expected lifetime sales value of each customer is approximately $50,000 (five years x $10,000/annual purchases). At the current rate of customer loss, Gem will lose $2 million in sales per year, or $10 million over the five-year customer life expectancy, [a year's revenue]. As staggering as these indirect costs are, the figures probably understate the total indirect dissatisfaction cost by a substantial amount."

Solutions do exist. Many methodologies have been prescribed to improve retention and increase profits from the customer base, including the popular "one-to-one" concept espoused by CRM gurus Peppers and Rogers (1997). In general, Blattberg, Getz and Thomas (2001) found that companies could substantially improve profits by focusing on their most valuable customers, and minimizing investments in low value customers. Still, champions for customer relationship management often have a tough time trying to obtain investment support, senior sponsorship, willingness to undergo cultural change, or any sense of urgency from senior management.

We need an operations approach – yes, even to the "softer" side of the business such as sales and marketing – to ensure appropriate, timely, consistent quality of service across the range of customer touch-points. We do not need to reinvent the wheel: existing operations knowledge can be employed in the customer relationship context. It can address the language barrier between the hard and soft sides of the business. An operations approach can help to make the case to senior management in a language they better understand, and it can better formalize the way the softer side approaches business.

We need to distill some existing and emerging models into a CRM-specific model: one that helps a practitioner to identify the CRM roles in their firm, to assess their current capabilities, to identify gaps and define improvement strategies, to prioritize strategy and resource investments, to implement improved CRM capabilities, and to measure, control and continuously improve CRM competency. We need a Process Capability Framework for CRM.

3.0 APPROACH

This study is intended to distill operational quality management approaches that have been successful in other business disciplines into a framework for building customer relationship management competency. This framework should help an organization to objectively evaluate its customer service capability today and to formulate strategies to improve customer relationship performance.

3.1 Structure and Approach

The structure applied in this paper to develop this solution is as follows:
- Define CRM and CRM concepts
- Define the problem, the research questions and the research approach
- Identify how customer relationships are influenced and identify the constituent functional areas of the organization
- Identify the role of process and applicable operations lessons that help in building CRM process capability across functional areas
- Select an established base model to inform the Framework
- Develop a Process Capability Framework for CRM by applying these inputs in the CRM context
- Define metrics that can be valuable in a CRM context
- Define methods for practitioners to assess capability and to identify improvements
- Identify CRM drivers that depend on the nature of business
- Define methods for practitioners to rate, compare and select capability improvement strategies from among competing investment alternatives
- Recommend an implementation methodology that follows a continuous improvement cycle
- Discuss conclusions, assumptions and limitations, and recommendations for further research and development

3.2 Research Questions

The study is designed to formulate an organized generic framework that is intended to be adapted by practitioners to their situation. The framework is developed to address the following questions:

Process-Centric Approach
- How does Process apply to different stages of the customer relationship across its lifetime? Where are the opportunities to improve profitability?

- How do customers perceive service value and quality? How does a firm influence that perception?

- What do standard operations practices teach us about effectively and efficiently managing services across the front office in a CRM context? Where are the gaps in an ad hoc organization? What are some of the consequences?

Building a CRM Process Capability Framework

- o How can a firm objectively assess its capability to manage customer relationships? What is possible?

- o From a process perspective, what does a firm need to do, or where should it focus, in order to evolve from one level to a higher level of performance?

- o How can metrics and controls be injected into managing the customer base? How does this change decision making and priorities? How does this change corporate strategy?

Strategy Selection

- o How can a firm select and prioritize individual CRM initiatives and investments?

- o What evidence is there that the benefits of process improvement are real?

General Conclusions and Recommendations

- o What are the limits to this Framework? What is recommended for future development of the Framework? What conclusions can be drawn from this study?

3.3 Research Style

Exploratory research identified promising models but these need to be distilled into a CRM-specific framework with more detailed research. Research will be primarily descriptive in nature. Please refer to the References for a partial list of literature reviewed.

3.4 Scope

This study is concerned with a generic approach that a firm or a business may consult to determine its need for CRM and/or begin to formulate its own specific case for CRM. "CRM" is accepted herein within the context defined in the introduction and chapter 4.

This study is not industry specific, although it endeavours to identify some of the variables practitioners must consider in their own context. The "typical" firm used as a model while building this framework is a large to mid-market enterprise that sells services or products where service is important to customer perception, that employs enough staff and undertakes enough individual transactions in a year to warrant a systematic process, and that exists in a competitive market. This study does not consider scenarios with limited alternative sources such as monopolies or patented innovations, and it does not specifically consider not-for-profit variables. It does not provide funding models, vendor selection, or specific technology recommendations.

3.4 Degree of Accuracy

A synthesis of some existing thinking, similar models from other disciplines, emerging methods and arguably supportive cases is an acceptable degree of accuracy for the purpose of this research. Descriptive research is an appropriate and acceptable level of research for the objectives of this study.

4.0 DEFINING CRM CONCEPTS

There are two overarching concepts in the domain of CRM: transactional CRM and strategic CRM, as explained below. Both are required to maximize customer value. Many firms deploy transactional tools which provide a modicum of functional advantage, but they fail to regularly mine the data to understand customers and to monitor their actual customer relationship management performance.

4.1 Transactional CRM

Transactional CRM consists of the activities and technologies that support discrete interactions with customers, such as a specific targeted marketing communication, a customer order, or a customer support issue.

Customer Interaction Management

Any interaction between the customer and the organization can be an opportunity to further the relationship and to gather data. The organization should identify all touch-points. Once these are identified, the organization should work on continuous customer-oriented improvements via customer-oriented process modeling (Mack et al, 2005, p. 101).

Common Transactional Functions and Supporting Tools

Goldenberg (2003) provided some classifications of technologies that support CRM functions, adapted and expanded upon here.

Context	Function sets covered by CRM-supporting tools
Time Management	o Calendar Scheduling o Activity Management o Email o Reminders
Sales and Sales Management	o Centralized Customer Database o Customer Forecasts o Teams and Territories o Quote and Order Entry o Linkages to Financial Data o Communications logs o Point-of-Sale o Billing and Credit management
Call Centres and Customer Support	o Telephony integration (from CRM application to phone system) o Telemarketing/telesales scripts o Customer Support issue tracking o Knowledgebase o Materials library o Customer self service tools

Marketing	o Campaign management tools o Targeted marketing communications o Customer satisfaction surveys & feedback
E-Business	o Website company, product and service information o Technical documents o Online Catalogues and Shopping o Case studies o Press releases and online press coverage o Self-serve tools and online account management o Online advertising and mass communications
Basic Reports	o Customer sales in period o Commission reports o Customer sales forecasts o Account statements

Source: adapted from Goldenberg (2003)

4.2 Strategic CRM

Strategic CRM consists of the organizational level CRM performance goals, policies, standards, and best practices. The power of strategic CRM lies in a broad and integrated approach that transcends traditional departmental boundaries. To manage CRM at the organizational level requires aggregation of transactional data, supplemented by marketing research and other data as required, to identify customer behaviour trends and CRM performance metrics (Mack et al, 2005).

Customer Intelligence

Customer Intelligence is the process of analyzing customer data to better understand the needs, behaviour and value to the firm of each customer. Analytics is the exercise of taking all of the resulting data available, supplementing it where necessary, and drawing out trends and performance indicators.

Revenue reports by customer are insufficient. Mack et al (2005) and Peppers and Rogers (2005) espoused a pragmatic valuation model based on Customer Lifetime Value (LTV or CLV). This must integrate customer-specific costs with projections of sales and referrals. It also implies differentiated levels of service and investment by the firm based on the customer value, such that the firm maximizes its returns from each customer.

Customer Segmentation and Data Mining

Database marketing is just one application of CRM principles wherein marketing staff break down the customer base into identifiable groups of customers based on certain characteristics (Brown and Gulycz, 2002, pp. 27-29). The traditional focus was on demographics but CRM proponents suggest that behavioural or "needs" delineations are far more valuable. This involves data mining, which is the process of extracting information from large volumes of data. Peppers and Rogers (2001, pp. 44-63) popularized a practice that they call I.D.I.C.: Identify the customer, Differentiate based on their needs, Interact with the individual, and then Customize the product and promotion to their needs, leading to a "one to one" level relationship. Mack et al (2005,

p. 101) pointed out that these capabilities should also encompass an "internal orientation": an understanding of what the company can actually deliver in the context of customer value.

Customer Lifecycle Management

The influence the organization has on customer buying behaviour changes at different stages of the customer lifecycle. Customer Lifecycle Management tries to differentiate customers and the nature of the firm's influence on customers depending on their stage. One-way communication from company to customer must evolve into two-way dialogue to strengthen the relationship. This gives the company important information about customers and customer segments (Mack et al, 2005, pp. 102-103).   The lifecycle concept permeates the Framework herein.

Customer Product/Service Management

CRM is also concerned with improving product and service management. One concept introduced in CRM principles is the design of products and services with a customer-benefit orientation. Broader and richer information about the customer base and customer requirements can inform better product and service development decisions (Mack et al, 2005, pp. 101-102).

Mass Customization

A related concept is "Mass Customization". With this capability, the entire value chain is oriented to be capable of customizing deliverables at the individual customer level (Peppers and Rogers, 1997, pp. 135-167). The benefits may or may not outweigh the efficiency challenges, depending on the unique conditions of the organization.

Common Strategic Functions and Supporting Tools

According to Peppers and Rogers (2001, p. 73), firms should use technology to "empower the managers of customer relationships, in essence supercharging their efforts. Technology can not only give managers the customer-specific information they need; it can also free them to concentrate on those activities that add the most value." Goldenberg (2003) provided some classifications of CRM-supporting technologies, adapted and expanded upon here.

Context	Function sets covered by CRM-supporting tools
Time Management	o Collaboration tools o Conferencing tools
Work Flow	o Organic Workflow o Workflow Reminders o Programmed Workflow Processes o Workflow Monitoring and problem Escalation o Project Management o Departmental and Business-unit Level o Enterprise level

Sales and Sales Management	o Centralized Customer Database with profiling information populated o Forecasts by Customer Segments and Cohorts o Sales Pipelines by various dimensions o Quote and Order Control o Monitoring, trending customer payment behaviour o Escalation of fulfillment exceptions o Integrated sales and fulfillment planning o Promotion response analysis o Point-of-Sale purchasing behavioural analyses
Call Centres and Customer Support	o Customer Support Pipeline o Service Level Agreements with automated escalation of exceptions o Customer Support issue trend analyses o Customer Self Service tools with profiling information populated, and behavioural analyses
Marketing	o Market segmentation o Product management o Cross-buying analyses o Affinity Programs o Campaign R.O.I. analyses o Lead generation with profiling and trend analyses o Targeted marketing communications based on fine segmentation and cross-buying analyses
E-Business	o Self-serve tools that gather profiling information o Customized experience based on profile/behaviour
Data Mining for Business Intelligence	o Enterprise Analytics tools o Decision Support Systems o Monitoring KPIs through dashboards, alerts o See chapter 10 for more detail

Source: adapted from Goldenberg (2003)

4.3 Chapter Summary

CRM is a challenging, multi-faceted discipline. The challenge increases when we recognize the need to manage interactions that involve many touch-points. The broad range of technology tools can also prove daunting until they are understood in the context of their role in supporting CRM competencies.

5.0 ANATOMY OF A CUSTOMER RELATIONSHIP

To develop CRM competency, it is important to understand how an organization influences customer relationships and their value to the organization. This leads to recognition of the many functional areas of the business that play a role.

5.1 The Customer Resource Lifecycle (CRLC)

According to MacMillan and McGrath in Harvard Business Review (1997), the organization has the opportunity to differentiate itself at every point where it comes into contact with the customer. In 1984, Ives and Learmouth (Turban, McLean, Wetherbe, eds., 2002, pp. 101-102) identified 13 stages of the Customer Resource Lifecycle through which a customer transitions in a buying cycle (Exhibit 5A). With or without a formal process approach to CRM, the firm is influencing the customer at these stages. Absent harmonized processes, the organization could significantly reduce long term economic value from customers.

Exhibit 5A – Customer Resource Lifecycle (CRLC)

Customer Resource Life Cycle	
Awareness Stages	
1. Establish Requirements	Establish a need for the product
2. Specify Requirements	Determine solution attributes
Acquisition Stages	
3. Select Source	Determine where to obtain the product
4. Order	Order the product from a supplier
5. Authorize and Pay For	Transfer funds or extend credit
6. Acquire	Take possession of the product
7. Test and Accept	Ensure that the product meets specifications
Retention & Add-On Stages	
8. Integrate	Add to an existing inventory
9. Monitor	Control access and use of the product
10. Upgrade	Upgrade the product if conditions change
11. Maintain	Repair the product as necessary
Retirement Stages	
12. Transfer/Dispose	Move, return, or dispose of product
13. Account For	Monitor expenses related to the product

Source: adapted from Ives and Learmouth, in Turban et al, eds., 2002, p. 102

Many firms focus sales and marketing resources almost entirely on the initial sale and invest in CRM primarily for sales force automation and marketing purposes. The CRLC illustrates that such an approach is shortsighted. Customer acquisition represents just four of the thirteen stages. Indeed, the cost of new customers far exceeds the costs of eliciting add-on sales from existing customers.

Awareness Stages

Stages 1 and 2. Customers Establish their Needs, then Specify Requirements and crystallize Expectations

In these stages, prospective customers begin to recognize that they have a need. Then they begin to crystallize their expectations by obtaining input. The organization influences prospective customers through direct sales, advertising, marketing communications, brochures or website materials, referrals and case examples. In chapter 8, we will investigate how to set expectations appropriately in order to achieve customer satisfaction and maximize returns from these investments.

Customer Acquisition Stages

Stage 3. Customers Select their Preferred Source

At this stage, customers become far more engaged and active in selecting their preference. This is the defining moment for managing expectations. Sales people, consultants and engineers are often involved. In the race to outmaneuver the competition, over-stated capabilities may establish a winning proposition that cannot be met in practicality. In chapters 7 and 8, we will define technologies and processes to manage the many parameters that will affect the actual outcome.

Stages 4 and 5. Customers Order and Pay

At this stage, the firm has achieved a commitment to the first sale. Having made the commitment, customers may experience an immediate "buyer's remorse" when they face payment. They can easily become critical of the firm if their experience does not meet their expectations at this stage. In chapter 8, we will identify processes to ensure that the ordering and payment process continues to meet customer expectations.

Stage 6. Customers Acquire (Firm Fulfills Orders)

Customers first receive the value of the product or service at this stage and begin to establish a perspective of the value received versus the cost and effort. The sale may be "closed" internally, but the "customer jury" is just beginning to deliberate.

In many industries the fulfillment side of the business is not visible to the customer. In others, such as service industries, the process of creating value is often very visible and customers may be engaged as part of the value creation process. Regardless, the firm must take care to control and manage delays or quality problems throughout fulfillment. In chapters 7 and 8, we will identify several technologies and processes that can be implemented to improve the ability of the firm to meet customer expectations in these supporting functional areas of the business.

Stage 7. Customers Test and Accept

Customers now judge what they perceive that they have received. The firm directly influences customer perceptions of quality at this stage. Problems can and will occur. How the firm deals with those problems is a critical component of customer perceptions of quality. The firm can influence those perceptions, even in a problem situation, depending on how it follows-up, responds, and resolves issues. Front office and back

office areas of the business may be involved in assuring customer satisfaction. In chapter 8 we will identify several processes a firm can implement to be proactive at this stage, to identify and resolve problems early, and to use these opportunities to demonstrate competence.

Retention and Add-On Stages

Stages 8 to 11. Customers Integrate, Monitor, Upgrade, and Maintain the product

Subject to their satisfaction up to this point, customers begin to apply or implement the product, possibly integrating with other products. The firm influences customer perceptions of quality based on the customer experience with integrating the deliverables into their environment, whether through instruction manuals or technical assistance. Customers also begin to recognize new or related requirements and add-on selling opportunities emerge.

By implementing processes that keep staff engaged with the client throughout this stage, and technologies to gather data about their needs, the organization can improve profitability in the short and long term. Chapters 7 and 8 provide detailed recommendations.

Retirement Stages

Stage 12. Transfer (or Disposal)

At some point, customers may move, return or dispose of the product. The firm influences customer perceptions based on how well it identifies these requirements, especially if it has environmental or regulatory obligation, and how well it supports or facilitates movement or disposal of the product. In chapter 8 we will identify several processes a firm can implement to be proactive in these situations, to identify and resolve problems early, and to use these opportunities to demonstrate competence.

Stage 13. Accounting and Records Management

Whether at the end of the product lifecycle or on periodic basis, customers may require or expect appropriate records. The firm influences customers through its accounting activities and documents, warranty documents, or product registration, for example. Chapters 7 and 8 include technologies and processes to ensure the firm is proactive and meets customer expectations, even at the end of the lifecycle.

5.2 Lifetime Value, Customer Equity and Return on Customer

What is the value of a customer relationship? Some managers feel that customer relationships are a "soft" concept when they fail to recognize the link to the bottom line. In this section we define the linkages further. In chapter 9, we define metrics that relate accounting principles to the value of customer relationships.

Blattberg et al (2001) and Peppers and Rogers (2005) defined metrics that make visible the value of a customer. At the core is the understanding that a sale in the current period is not the only value of that customer, but rather it is the lifetime value of the customer

that defines their true worth. Customer Lifetime Value (LTV or CLV) recognizes the value of a customer relationship by considering its probable life-long value based on parameters such as customer acquisition and retention. LTV is essentially the net present value of the future stream of cash flows a company expects to generate from the customer.

What if we could see the future customer value the firm created or used up in a period? The sum of LTV for all current and future customers results in Customer Equity (CE). Customer Equity treats the customer as a financial asset that organizations should measure, manage and maximize, just like any other asset (Blattberg et al, 2001, p. 3). Customer Equity uses financial valuation techniques and data about customers to maximize value realized from customer relationships all along the customer lifecycle. It recognizes the future value of customers based on conditions and decisions today that affect future value. Changes in CE period over period quantify how the firm's investments and activities in the period have created (or destroyed) value – a concept Peppers and Rogers (2005) called "Return on Customer".

Recognizing future value and changes thereto has dramatic strategic impact. The concepts demonstrate that maximizing shareholder value is an optimization problem (Peppers and Rogers, 2005, p. 9): maximizing returns from customers in both the short and long terms with the firm's investments. They suggest that a company should base investment or resource decisions on the value that affected customer group would create for the firm. They also suggest that, since all value in a firm comes from customers at some point, shareholder value is equal to returns on customers.

Customer Equity is real. It is actually being used to value companies in mergers and acquisitions. Bauer and Hammerschmidt (2005) maintained that CE is superior to traditional valuation techniques which "lack a direct linkage to the critical factor 'customer' as the source of value creation." Gupta and Lehmann (2003) cited several examples of CE calculations involved in major acquisitions, and illustrate how CE calculations are often close to actual market valuations.

The calculation of future profits from customers poses complexities and some criticisms exist for predictive LTV calculations. Hogan et al (2002) pointed to the need to consider risk related to behavioural dynamics, social and competitive effects, and the effect of the lifecycle. Pfeifer, and Farris (2006) produced an excellent paper on how to incorporate elasticity in these calculations to address this risk. Hogan et al did go on to suggest how to account for the risks they identified and to identify several financial measures that "may be linked to customer value" including market capitalization, price/earnings (P/E) ratios, and Economic Value Add (EVA).

Differentiating Customer Value along the Lifecycle

Does customer value, or the predictions of a customer's value in the future, change depending on their stage in the lifecycle? Blattberg et al (2001) recognized that the requirements of customers and their value to the firm differ at different stages in the lifecycle. Within its top five business segments, industry leader Dell Computers allocates

account managers (resources) based on customer lifecycle stage. Peppers and Rogers (2001, pp. 93-95) said, "Dell possesses a unique advantage over rivals: their sales and marketing processes are organized around individual customers, not products. Dell understands that the 'vintage' or relative maturity of a particular customer matters and that different vintages of customers require different approaches". Blattberg (2001, pp. 14-16) differentiated customers within the customer lifecycle as follows:

- **Prospects** – Marketing tactics used during the Prospect stage have repercussions throughout the relationship with the firm, even impacting other customers. Prospects will not proceed unless their expectations exceed their product-quality cut-off.
- **First-Time Buyers** – Provided the deliverable meets expectations and remains above a customer's quality cut-off, that customer will continue to purchase. Customers at this stage are highly elastic: just one product failure generally can cause defection. The potential future value of first-time buyers significantly affects customer equity.
- **Early Repeat Buyers** – These customers are more likely to buy again than first-time buyers. They are still evaluating the relationship even after two to three purchases. They may defect if the firm provides poor service or otherwise fails to meet expectations.
- **Core Customers** – These customers make repeated, regular purchases. They are far less elastic and will rarely reevaluate the firm unless a major problem arises. They represent the highest retention rates and the highest sales per customer. Due to the high retention rates, some firms make the mistake of de-emphasizing programs and investments for core customers.
- **Core Defectors** – These are Core Customers who become willing to switch because of competitive offers, problems, or boredom. The firm can control some factors, but not external ones. Defectors can often be reactivated, but many firms fail to recognize them.

The Value of Customer Retention

Retention rates of 100 percent are not necessarily desirable and are not synonymous with maximizing profits (Blattberg et al, 2001, pp. 69-82). The retention of desirable customers is an important goal, but a firm may not want to retain all its customers. A firm should manage its retention rate and choose retention strategies that best support customer equity. Retention does not occur without incurring some costs. It may be in the firm's best interest to make suboptimal profits in the short run in order to nurture the customer-firm relationship and maximize customer equity over the customer lifecycle. Blattberg et al recommend matching retention investments to the retention value of individual customers. Specific metrics are discussed in chapter 9.

Blattberg et al (2001, p. 71) identified several determinants of customer retention. Initial purchase experience was very important.   The ability to manage customer expectations was also key as they judge quality delivered against their expectations, whether or not those expectations are appropriate. In fact, expectations are formed in the unique context of the customer's own environment and application of the product. Thus, uniqueness and

suitability were also determinants. The ease of purchase and the quality of customer service are each critical determinants. These cues form the customer's sense of value received, and value must exceed perceived costs and efforts.

Loyalty mechanisms can have an impact on retention. This can take the form of rewards. The ease of exit or switching costs can also reinforce retention. Customer willingness to switch is also influenced by the competitive landscape including substitute products.

The Value of Add-On Selling

The goal of Add-on Selling is to increase profit per customer, but it also feeds the other stages. The more customers buy, the higher their retention. The greater the back-end profits, the more a firm can invest in customer acquisition. Too many firms neglect to implement programs to improve add-on selling until the customer base begins to mature.

For successful add-on selling, a firm needs to identify the best products or services to offer its customer base. Many firms fail to recognize their add-on selling opportunities because they fail to adequately research their customer bases (Blattberg et al, 2001, p. 96).

5.3 Identifying Functional Area Influences throughout the Lifecycle

The Customer Resource Lifecycle and valuation methods illustrated that many supporting functions contribute to the customer experience and ultimately their value to the firm. What functional areas of the business are involved either directly or in a supporting function?

Exhibit 5B illustrates the primary impacts of the organization's functional areas along the Customer Resource Lifecycle. Vertical dotted lines illustrate a mapping of primary functional area responsibilities to influential stages in the cycle. The impacts of several functional areas are described below. Their responsibilities will be described in more detail in the CRM Process Capability Framework in chapters 7 and 8.

- **Executive Management** are influential for their role in developing a customer service culture and a capable process environment, for establishing organization-wide policies for performance objectives and baselines, for providing the necessary resources, training and support systems, and for strategic planning and decisions that improve stakeholder value.
- **Marketing** functions are influential on customer awareness, expectations, price, promotions, placement and positioning, as well as for product decisions, market research, identifying customer profile parameters, and targeted marketing tactics.
- **Direct Sales** and **Account Management** functions are influential for their direct and visible impact on customer perception via professionalism, responsiveness, knowledge, expectation and requirements management, negotiated pricing, timing and other direct parameters of quality, and for their involvement in contracting, where applicable.

Exhibit 5B – Functional Area Mapping to CRLC

This exhibit illustrates the customer lifecycle stages (horizontally), with some of the common related functional areas of the business (related vertically).

Customer Resource Life Cycle Stages

Awareness		*Customer Acquisition*					*Retention & Add-On Sales*				*Retirement*	
Establish Requirements	Specify Requirements	Select Source	Order	Authorize & Pay	Possess/ Apply	Test & Accept	Integrate	Monitor	Upgrade	Maintain	Transfer	Account For

Primary Functional Area Mapping

- Marketing & Pre-Sales
- Consulting/Engineering
- Sales & Order
- Fulfillment
- Customer Care (Support)
- Accounting
- Consulting/Engineering
- Technical Service
- Add-on Sales & Marketing
- Accounting, Compliance, Risk
- Product and Market Development
- Supporting Technology and Electronic Touch-Points

CRLC Source: Ives and Learmouth, in Turban et al, eds., 2002, p. 102; Functional Area Mapping Source: author

- **Inside Sales, Quote and Order-Handling** and **Point-of-Sale** are influential, whether personal or electronic interaction, for their impact on final accuracy of pricing, availability, turn-around, payment options, credit management and accounting records, for their unique position in monitoring and communicating the progress of or problems with fulfillment, and for their ability to gather customer data. They may also be involved in awareness and expectation-setting via telemarketing, if applicable.
- **Customer Care, Technical Support** and **Engineering** are influential for their ongoing and perhaps greatest impact on customer perception of quality and, therefore, the profitable repeat and add-on buying behaviour. They also have a unique ability to gather customer data that informs improvement of organizational product and service quality.
- **Fulfillment and Procurement -** The term "Fulfillment" is used herein to refer to the process of creating the actual deliverable for the customer and transferring that value to the customer. This commonly includes manufacturing, distribution, retail, and service delivery. These functions are influential for their supporting role in supply, product quality, fit, cost and turn-around times that directly influence customer perception of quality of deliverables.
- **Project Management and Consulting** are influential for their role in service quality, fit, value transfer, cost and turn-around times that directly impact on customer perception of quality of deliverables.
- **Human Resources** are influential for their impact on the cost and availability of the important human resource supply to fulfill deliverables, for their influence on the customer relationship via organizational standards for professionalism and performance, for implementing appropriate incentive plans for good customer service, and for providing the requisite training.
- **Research and Development (R&D)** are influential for their role in designing products that fit customer needs, for the impact of design on production costs, configurability and quality, for documenting product capabilities and constraints so that expectations can be accurately set, and for adapting products and producing innovations that meet customer needs.
- **Accounting and Records Management** are influential for their role in establishing accurate order parameters, the timeliness and accuracy of invoicing and collections interactions, the extension and terms of credit and payment options, and records management that may be required for product application or compliance.
- **Legal, Risk Management and Compliance** functions are influential for their impact through terms and constraints, appropriate and timely disclosure, the effects on total cost of ownership, and assistance of the customer in identifying and meeting compliance obligations, if applicable.
- **Electronic touch-points** are influential for their potential customer impact at all stages by disseminating information that sets expectations, by gathering inputs from clients that help the organization to address customer needs, by conducting transactions such as online shopping or EDI, by facilitating electronic communications, and by providing self-service options which customers deem valuable.

5.4 The Challenge: Implement, Monitor and Control Systematic CRM Capability across Functional Areas

Mack et al (2005, pp. 99-100) pointed out that strategy, technology, processes and employees have to be linked in an integrated customer-oriented strategy. Blattberg et al (2001, p. 3) stated that the firm needs to build an organization, processes and performance measures that work together to maximize customer asset value. They advocate utilizing all customer interactions to reinforce relationships and to acquire new customers.

Once we recognize the breadth of functions that contribute to customer perception and influence their buying behaviour, the question becomes: how do we manage CRM roles in a consistent fashion that improves customer relationships and lifetime value? Fortunately, there are many lessons we can take from established operations knowledge to build an integrated customer relationship management capability.

5.5 Chapter Summary

There are many different stages at which an organization influences customer buying behaviour, extending far beyond the initial sale. By understanding the full lifecycle of one sale, and by predicting future buying behaviour, we gain a far better indicator of the value of customer relationships. We also gain a better understanding of how even back office supporting functions have a dramatic influence on the lifetime value of a customer. By investing in better management of core customer relationship competencies across these functional areas, we can create greater economic value for shareholders. Next, we explore how to improve core competencies.

6.0 A PROCESS-CENTRIC APPROACH

While most organizations implement processes and systems in the production areas of the business, they do not always implement them in the front office areas. In this chapter we will learn from established operations knowledge how to develop quality customer service capability that involves a complex set of functions. The fundamentals must first be understood because they form a familiar foundation for most managers who will be asked to sponsor CRM investments. In chapters 7, 8 and 9 we turn this knowledge into a process capability framework for CRM.

Why is a process-centric approach necessary? According to Kotler (2002, p. 454),
> "Experts say that a company's money would be better spent on improving delivery performance than on advertising…that superior service performance is a more effective differentiator than image expenditures."

He goes on to point out that it is harder for a competitor to duplicate superior systems than to copy advertising campaigns. Thus, strong customer-oriented processes create more sustainable competitive advantage. This concept is proven in practice. J.D. Power is a well respected quality management and assessment firm. One of their first clients was a struggling Toyota at a time when North Americans viewed Japanese products as cheaply made. Today, Toyota is the second largest automaker in the world and growing. James D. Power IV talked about one of the cornerstones of that success (Won, 2007):
> "Toyota had a passion for listening to the voice of the customer. It was profound for a company at the time. They had the desire to achieve greater results and greater satisfaction with consumers. They strived to provide consumers with more value in the product than customers expected for the price tag."

Toyota succeeded in implementing process methodologies to take costs out of the product and add value in other ways. This eliminated waste and it improved efficiency and productivity. They applied operations discipline with a customer-centric focus.

6.1 Lessons from Traditional Operations Knowledge

The need for quality management processes and systems in manufacturing has long been appreciated as a means to streamline costs, improve quality and reduce risk. Most managers have an understanding of this operations knowledge, perhaps because business texts tend to default to manufacturing examples. Many of the lessons - even the language - from that operations knowledge can be applied to the creation of systematic process-based quality management of the Customer Relationship Management functions.

The Value Creation Process

Michael Porter published a conception of the organization as a value chain (Exhibit 6A). Inputs or materials enter the value-creation process. They are transformed through various stages that involve various functional areas of the business, which rely upon support activities and systems. This process creates economic value.

Exhibit 6A – Porter's Value Chain
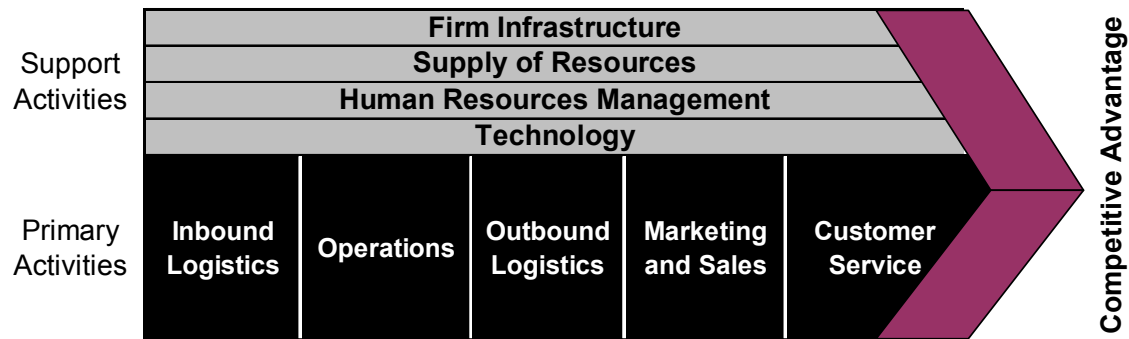
Source: adapted from Besanko et al, eds., 2004, pp. 375

Porter's model illustrates that sales, marketing and customer service are all operational components of the firm's value creation process. It illustrates dependencies of the front office on other functional areas. Further, the value chain illustrates support activities and systems that cross all departmental boundaries. Despite the seeming lack of customer visibility into the back office, Besanko et al (2004, pp. 374-380) pointed out that it is difficult to isolate the impact that one function has on the value that the firm creates. In fact, a firm that achieves better organization or greater efficiency across these functions can enjoy a competitive advantage over rivals. To do this, they say "the firm must possess resources and capabilities that rivals lack; otherwise, the competitors could immediately copy any strategy. Replicating another firm's distinctive capabilities is difficult." They cite a firm's ability to manage linkages between elements of the value chain and to coordinate activities across it as a source of superior capability.

Unfortunately, Porter's model does not tell us exactly how to get all elements working together effectively to produce competitive advantage for the firm. Quality Management methodologies, however, are more specific.

A Basic Model of Operations

Operations are the organizational elements of the business engaged to create value by transforming some inputs into a desirable customer output. This concept was illustrated in the basic SIPOC model of operations (Exhibit 6B). The model illustrates that, to manage the creation of value, the organization must manage the constituent processes and the structures and systems that support those processes. This stands in contrast to the ad hoc approach many organizations have to the front office of the business.

Exhibit 6B – the SIPOC model of Basic Operations

```
                          ┌──────────────┐
                          │   Systems    │
                          │  Planning,   │
                          │  standards   │
                          └──────────────┘
                                 │
                                 ▼
┌──────────┐   ┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐
│Suppliers │   │  Inputs  │  │Processes │  │ Outputs  │  │Customers │
│Internal  │ → │Materials,│→ │Transform-│→ │Products, │→ │Internal  │
│or        │   │human     │  │ation     │  │services  │  │or        │
│external  │   │resources,│  │of inputs │  │          │  │external  │
│          │   │information│ │          │  │          │  │          │
└──────────┘   └──────────┘  └──────────┘  └──────────┘  └──────────┘
                                 ▲
                                 │
                          ┌──────────────┐
                          │  Structures  │
                          │   People,    │
                          │  equipment   │
                          └──────────────┘
```
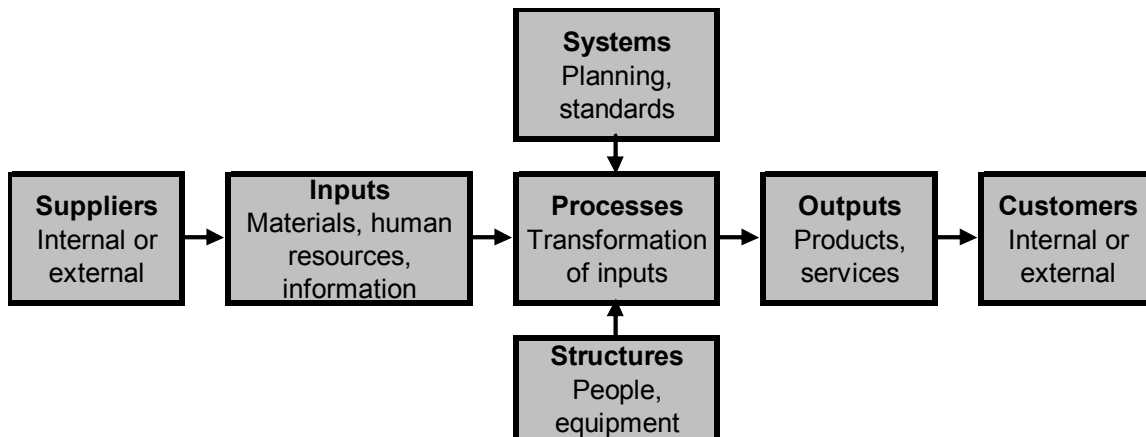
Source: Norton, 2003, 1-4 Aspects of Operations Management

Process Design

Operations knowledge lends a context for the design of processes (Exhibit 6C). From this perspective we learn that to affect good service quality we must consider how service is delivered to the customer (service network), work flow and collaboration between players (layout), the availability, responsibilities and training of human resources (job design), and supporting process technology.

Exhibit 6C – Process Design

```
        ┌──────────────────────────────────┐
        │         Service network          │
        └──────────────────────────────────┘
          ▲             ▲              ▲
          │        ┌──────────┐        │
          │        │Layout and│        │
          │        │   flow   │        │
          │        └──────────┘        │
          │         ↙       ↘          │
          ▼        ↙          ↘        ▼
     ┌──────────┐                ┌──────────┐
     │ Process  │◄──────────────►│Job Design│
     │Technology│                │          │
     └──────────┘                └──────────┘
```
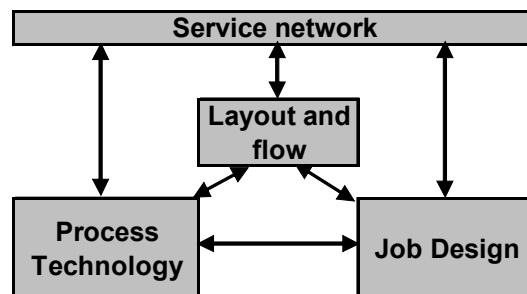
Source: adapted from Slack et al, 2001, p. 184

Many of these elements are not formalized in front offices. The CRM Process Capability Framework helps a firm to design and implement processes to improve this capability.

Quality Management Process

Quality management may be generally weak for front office functions, but it has evolved tremendously for manufacturing processes. The basic tenets of quality management processes were popularized by W. Edwards Deming in his PDCA approach: Plan, Do, Check, Act (Fitzsimmons and Fitzsimmons, 2004, p. 437).

- **Plan** involves gathering data about the problem and understanding the problem and cause. But planning also involves establishing clear goals for the improvement activity to achieve. A solution is devised as the last step in planning.

- **Do** refers to implementing the plan. The plan may be adjusted to accommodate case-specific circumstances as the solution is implemented.
- **Check** involves gathering data and measuring throughout the process to monitor and control the process, and to determine the extent to which the improvement target has been achieved.
- **Act** is the all important step of using that information to actively improve the process, not just monitor it. If objectives were met, the quality plan is typically continued. If not, other action may be necessary for the case at hand, and the quality process cycles back to create or modify the plan.

A planned quality management process must go beyond the front-line personnel or discrete processes. This concept is applied in the higher levels of the CRM Process Capability Framework in chapters 7 and 8.

Failure Prevention and Recovery

Things will still go wrong. Often it is how well the firm deals with a problem that establishes a customer's perception of quality. Operations knowledge teaches us to implement processes for Failure Prevention and Recovery (Exhibit 6D). The required capabilities include a system to detect and analyze problems as early in the process as possible, processes to recover from the problem for a given case, and a cycle to continuously improve system reliability and quality control processes themselves. Firms need to apply the same discipline to front office functions, and to the integration of front office and support functions.

Exhibit 6D – Failure Prevention and Recovery Process

```
             ┌─────────────────┐
             │   Detection &   │
             │ Analysis: "What is│
             │ going wrong and │
             │      why?"      │
             └────────┬────────┘
          ┌───────────┴───────────┐
┌─────────────────┐     ┌─────────────────┐
│Improving System │     │ Recovery: "Coping│
│  Reliability:   │     │ and responding  │
│ "Stopping things│     │ when things do go│
│ from going wrong"│     │     wrong"      │
└─────────────────┘     └─────────────────┘
```
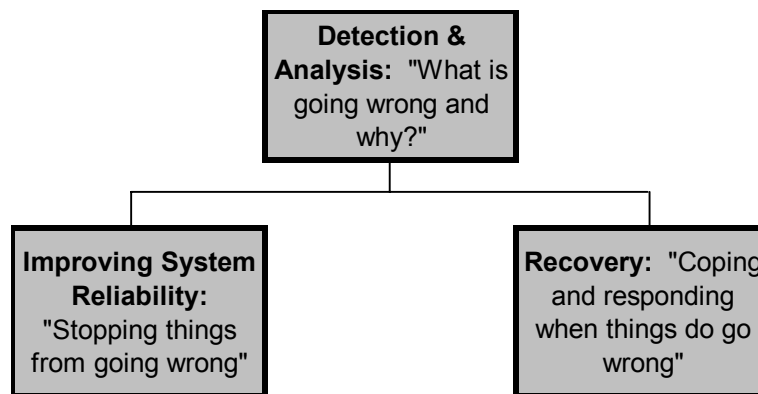
Source: Slack et al, 2003, p. 645

Too often firms are "firefighting" customer service issues on a reactive basis. They fail to establish a process to avoid the same problem in the future. The need to monitor for failure to meet customer expectations, and to plan and execute resolution processes is addressed in the CRM Process Capability Framework in chapter 8.

Service Quality

Fitzsimmons and Fitzsimmons illustrated how a customer perceives service quality (Exhibit 6E). The organization may not control external inputs such as past experiences. However, the organization does control five dimensions of service quality. Across these dimensions the perceived service must equal or exceed expectation to produce customer satisfaction.

Exhibit 6E – Perceived Service Quality
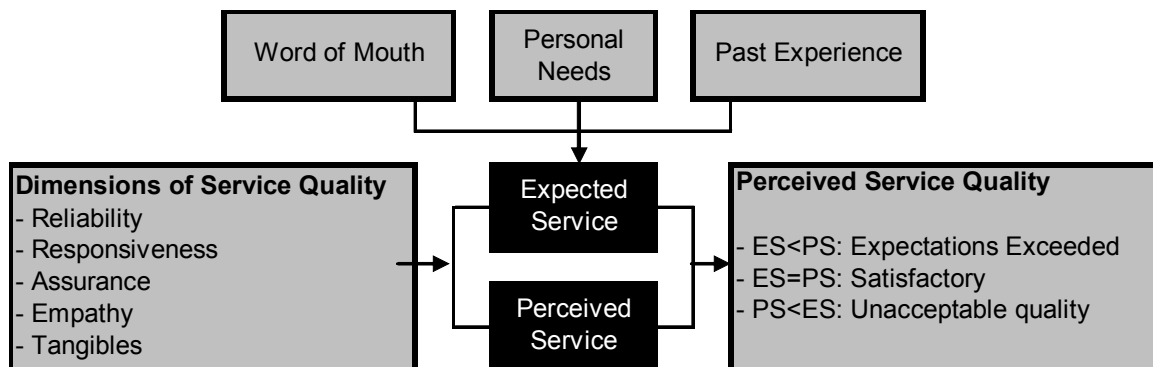
Source: Fitzsimmons & Fitzsimmons, 2004, p. 133

Kotler (2003, p. 455) described these dimensions as:
- Reliability – the ability to perform as promised, accurately, consistently
- Responsiveness – the ability to provide prompt service, to follow-up, and to be proactive about communication
- Assurance – the courtesy and ability of staff to convey trust and confidence, and their access to supporting knowledge and tools
- Empathy – provision of caring, individualized attention based on identified customer needs
- Tangibles – the appearance of facilities, supporting tools and technology, personnel, and communication materials

Note that empathy is primarily a factor of individual employee performance. However, there is an underlying role for the organization to support reliability, responsiveness and assurance through systems, standards and processes. Systems and supporting tools, or the lack thereof, can be tangible cues to the customer.

Common Service Quality Gaps

When an organization has failed to establish a perception of quality in the customer, there are several ways in which the process could have failed. Exhibit 6F illustrates five common gaps in service quality as identified by Parasuraman, Zenithal, and Berry.

Exhibit 6F - Service Quality Model and Gaps
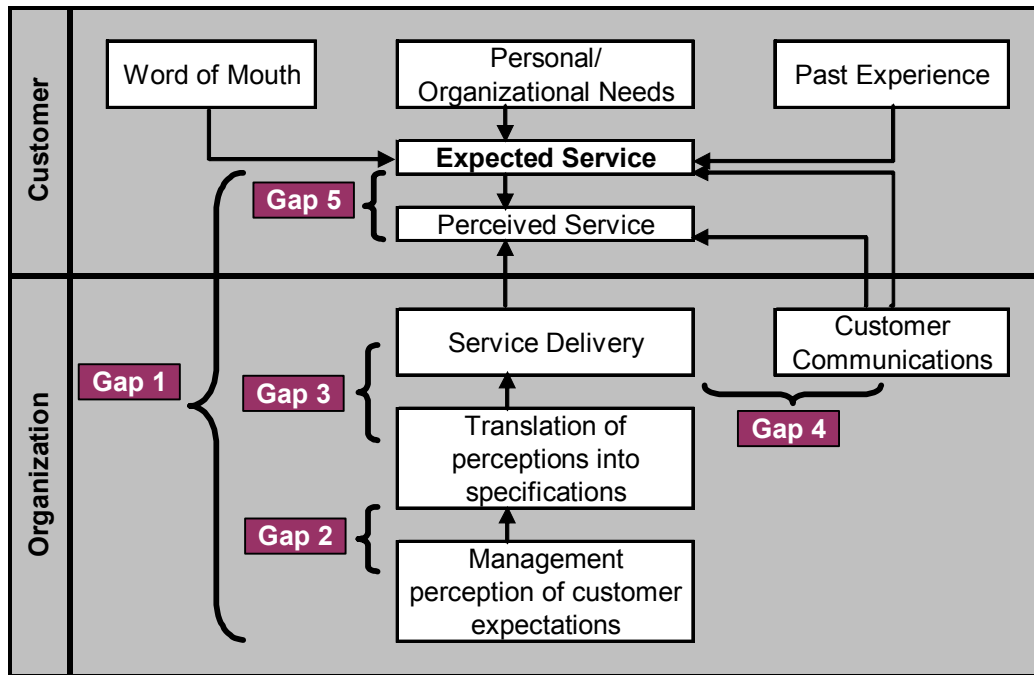
Source: Parasuraman, Zenithal, and Berry, in Kotler, ed., 2003, pp. 455-456

- **Gap 1** – Management perception versus customer expectation. This gap involves underestimating expectations, failing to manage and agree upon realistic expectations, and even subtle differences in priorities.
- **Gap 2** – Management perception versus appropriate specifications. The firm may properly identify expectations, but fail to implement and adhere to standards to achieve them.
- **Gap 3** – Service delivery versus specifications. Conflicting standards (e.g. serve them fast vs. serve them well), lack of training, and insufficient resources contribute to failure to meet the established standards.
- **Gap 4** – Service delivery versus customer communications. From claims and associated imagery in ads to statements by sales staff to written documentation, the organization is communicating expectations in myriad ways. When the deliverable is perceived as something different, the gap can be problematic.
- **Gap 5** – Perceived service and service delivery. This gap occurs when customers misperceive what they received, often due to miscues and miscommunications.

To close these gaps, we need to systematically gather accurate and relevant data, monitor those inputs for problem indicators, and proactively respond to address problems. This concept permeates the CRM Process Capability Framework in chapter 8.

6.2 Selecting a Foundation for the CRM Process Capability Framework

To build a process-centric framework for CRM, we undertook to identify an existing model that could serve as a foundation. Ideally the model would already have some traction and evidence of value in real world applications. It should be grounded in more traditional quality management and operations principles. It should be applicable to service delivery because the front office is very service-oriented. The ideal foundation would provide a model that includes an understandable concept, a means to assess process capabilities today, and guidance toward improvement. Finally, in recognition that practitioners may wish to adopt a staged approach to CRM process capability improvement, the ideal model should accommodate a range of capabilities rather than a singular certification outcome.

Several process-oriented quality management models were considered. Please refer to Appendix A for a discussion of alternatives. Because of its relatively generic applicability, the precedent of CMMI® being employed as a foundation for other disciplines, its flexible but objective approach to capability assessment, and the intuitive benefits of its five-level model, CMMI was the selected foundation for this CRM Process Capability Framework.

Introducing the CMMI® Process Capability Maturity Model

CMMI® is a process capability maturity model that stems from traditional quality management practices and builds upon best practices identified in companies with effective, predictable service quality. It provides an established foundation that has been applied successfully to help complex service operations to assess their capabilities, identify areas for and pathways toward improvement, and achieve real, measurable benefits in many cases (see Appendix A).

In the 1980s, a group at Carnegie Mellon University developed the Capability Maturity Model (CMM®). U.S. government agencies spent large sums of money outsourcing software engineering and they needed a formal method for assessing the true capabilities of these firms to meet their promises. They funded the early development of CMM. At its core was a way of classifying the level of process capability (maturity) of a firm to perform complex service delivery. The model later evolved into the Integrated Capability Maturity Model (CMMI®) which had broader applicability. Although it was initially designed for software engineering, others began to recognize that the same fundamentals apply in just about any service delivery system. It has been used as a foundation for discipline-specific frameworks in human resources, purchasing and project management, for example.

CMMI espouses several business objectives relevant to CRM: to produce quality products and services, to enhance customer satisfaction, to increase market share, to gain recognition for excellence, to implement cost savings through best practices, and to create value for shareholders (Ahern, Clouse, Turner, 2004, p. 44).

CMMI classifies a firm's process maturity and capabilities into five levels (Exhibit 6G):
- Level 1 – "Initial": Ad hoc processes. Success depends on heroes; not repeatable.
- Level 2 – "Repeatable": Basic project management. Overruns in cost & scope.
- Level 3 – "Defined": Organization-wide standards. Project processes align.
- Level 4 – "Managed": Strong metrics and controls are in place.
- Level 5 – "Optimizing": Analytics support change decisions; firm responds.

Exhibit 6G – CMMI® Staged Maturity Levels

Levels		Characteristics
5	**Optimizing**	Focus on process improvement
4	**Quantitatively Managed**	Process is measured and controlled
3	**Defined**	Process is characterized for the **organization** and is proactive
2	**Repeatable**	Process is characterized for **projects** and is often reactive
1	**Initial**	Process is unpredictable, poorly controlled, and reactive

Source: adapted from Ahern et al, 2004, p. 93

At each of these levels, companies exhibit similar characteristics and struggle with similar problems. As a company rises in level, those problems tend to disappear and new challenges are faced. These findings led to a formal process for appraising the level of a firm in Key Process Areas (KPAs): a cluster of related activities that, when performed collectively, achieve a set of goals considered important (Ahern et al, 2005). They also led to something of a roadmap to determine where the firm needs to invest in order to achieve a higher level of performance. A higher level of performance ostensibly means greater consistency, efficiency and lower risk in delivering service and meeting expectations.

"Process Areas"

Process Areas (PA) are a fundamental organizational feature of CMMI models. They group a set of practices with a common purpose (Ahern et al, 2004, pp.57-60). As CMMI is applied to an increasing number of disciplines and business models, PAs provide a more flexible delineation while establishing a common language among practitioners. For each capability level, CMMI defines several Process Areas that should be managed.

"Customer Validation", for example, is just one of several Process Areas that should be mastered at Level 3. Given the importance of this capability, the many constituents of an effective Customer Validation process have been grouped into this PA. A Process Area defines goals, practices and sub-practices that are evident when a firm has a high degree of capability in that Process Area. Some of these are considered required, some are for

guidance, and some specify how the recommended model can be tailored while remaining true to the discipline.

"Practice Implementation Indicators" and "Artifacts"

A third CMMI concept that will be used in the Framework is that a firm leaves behind certain "artifacts" of good conduct when it excels in a certain Process Area. These artifacts provided clues to the framers of CMMI as to how and why certain companies excelled in an area. By recording "work products" of processes – the direct and indirect outputs or evidence of work – the organization monitors actual usage.

Evident practices combined with certain artifacts make up what CMMI calls "Practice Implementation Indicators" or PIIs (Ahern et al, 2005, p. 55). For each Process Area, CMMI defines specific indicators (PII Descriptions or PIIDs) that are sought when appraising a firm, to objectively determine its level of capability in a process area. When a gap is discovered, the indicators are also useful in identifying what is necessary to achieve better capability in that area. For example, to improve customer satisfaction the firm should implement policy and business plan documents for how Customer Validation is to be conducted, among several other indicated practices and artifacts. In chapter 8, the CRM Process Capability Framework builds on these CMMI Process Areas in a customer relationship context.

6.3 Chapter Summary

The process of creating economic value for shareholders from customers involves a chain of various functional areas, supporting activities and supporting systems. Done well, it also produces competitive advantage for the firm. Quality management practices are vital to this success, yet the processes and controls required are often absent in the front office or across CRM-related functions. Quality service depends on several dimensions which must be actively managed. Otherwise, the customer perception of quality and value will tend to fall due to gaps in customer perception versus expectation. Fortunately, an established model called CMMI applies quality management principles to a complex set of services. Next, we translate this model into a CRM context for implementing CRM competencies in daily operation.

7.0 CRM PROCESS CAPABILITY FRAMEWORK: OVERVIEW

What follows is a framework based on the CMMI model to address the operational concepts in a CRM application. In this chapter, the Framework is described in terms of performance and technology characteristics. Chapter 8 details the specific practices for each level and the evidence that should exist if a firm is operating at a given level. The concept of managing CRM processes by metric emerges in these disciplines; therefore, some valuable CRM-specific metrics are detailed in chapter 9. Chapter 10 describes an appraisal methodology for CRM capability. Chapter 11 brings everything together with a roadmap of how to apply all components of the Framework from proposal through strategy selection to implementation.

The framework in Exhibit 7A was developed by translating CMMI process area recommendations (Ahern, Clouse, Turner, 2004) and characteristics into CRM applications. It is described as follows.

7.1 CRM Level 1 – Ad Hoc Processes

Performance Characteristics

This is the base or default stage. Functions are executed in a primarily ad hoc fashion. Proven processes are not consistently identified. Problems are addressed primarily through the general competence of staff combined with the heroics of some individuals. The organization is heavily reliant upon high quality people. This can result in problems in ramping up new staff, and in significant risk with personnel turn-over.

Despite the lack of process, these functional areas can produce products and services that work. However, this level identifies an unstable environment. Deliverables and initiatives frequently exceed budget or timelines or deliver a fraction of the intended value. In Level 1 maturity functional areas, staff tends to over-commit, then abandons process in times of crisis. Past successes are difficult to repeat (Ahern et al, 2004).

Process Areas Covered

Since this is the default level, there are no requirements.

Technology Characteristics

Technology tools support individuals but do not govern the flow of an entire process. Documents may be organized in shared folders but naming conventions are unclear and some key documents reside on private hard drives. Email is a filing system, not just communication. Contact management may exist but data tends to becomes stale and obsolete. Collaboration is unofficial. It relies on personal interaction. Information is pushed out as individuals deem necessary (e.g. email carbon copies) rather than centrally stored and retrieved as required. Common evidence includes frequent use of paper notes at workstations signifying that users don't feel they have the appropriate tools to track key information and to ensure issues don't fall through the cracks.

Building the CRM Foundation: A CRM Process Capability Framework

Exhibit 7A – The CRM Process Capability Framework

Levels		Key Process Areas	CRM Performance Characteristics
5	Optimizing, Adapting, and Innovating	1. Organizational Process Improvement, Deployment and Innovation 2. Causal Analysis & Resolution	The organization establishes quantitative process performance objectives and improves processes toward those objectives. Improvement occurs both through continuous incremental improvement, and through actively pursuing process innovation. The effects of processes improvements are continually being measured against the new objectives and processes are adapted to changing business factors. The scope of control metrics is sufficient to identify causes of process variations which, if solved, could yield significant measurable process performance improvement. This level depends on an empowered workforce that is aligned with business objectives in order to bring about the degree of agility, adaptability and innovation required. The firm enables people through shared learning, collaboration and knowledge-sharing tools.
4	Quantitatively Managed CRM	1. Organizational CRM Process Performance Standards and Measures 2. Quantitative Project Management	The firm has identified and selected sub-processes that contribute to process performance. Metrics are used, and quantitative metrics are implemented using statistical and other quantitative techniques. The scope of control metrics is sufficient to identify variations in individual processes. At this level Management is able to monitor process and service quality, recognize when it falls outside of established standards, and take appropriate action. The firm is able to adjust and adapt service according to customer needs or special circumstances without significant loss of service quality or deviation. Process performance is now quantitatively predictable.
3	Defined Organizational Standards and Processes	1. Organizational Environment for Integrated CRM Processes 2. Organizational CRM Process Focus 3. Organizational Process Asset Library 4. Organizational CRM Process Training 5. Customer Requirements Development 6. Product Research & Development 7. Internal Verification 8. Customer Validation 9. Integrated Project Management 10. Integrated CRM Teaming 11. Integrated Material & Human Resource Supply Management 12. Risk Management 13. Decision Analysis and Resolution	Organization has established CRM processes and standards for timing, quality, validation, risk, individual responsibilities, team hierarchy, suppliers, and decision evaluation. The organization invests in appropriate staff training on process and standards. Formal, standardized processes are consistently applied to establish customer requirements, to identify exceptions, resource requirements and scope. Risks are formally documented and measures are taken to mitigate risk. Hierarchy and communication lines for all stakeholders are understood. Authority and accountability are appropriate at each level. Quality assurance is validated both internally and by the customer before deliverable is considered finished. Exceptions are noted, reviewed with an appropriate level of management, and managed to resolution. Product/service offerings are developed or evolved based on feedback from customers. Marketing and sales communications make accurate claims for the capability and availability of the deliverable.
2	Repeatable Transactional Processes	1. Customer Requirements and Expectation Management 2. Customer Quality Assurance 3. Measurement and Analysis 4. Fulfillment or Project Planning 5. Fulfillment or Project Monitoring and Control 6. Material and Human Resource Supply Management 7. Configuration Management & Customization	An understanding of primary transactional processes exists (e.g. order taking through authorization through fulfillment and follow-up). Staff understand their role in the fulfillment of orders and assisting and following-up on the customer's initial implementation. Customer requirements are gathered at primary touch-points. Communications with clients that establish or clarify expectations are documented. Dependencies upon resources including suppliers is understood. Customer QA feedback is sought; problems are tracked by product, supplier and customer. Processes are commonly followed, even in crisis, and successes are repeatable in future cases.
1	Initial Ad Hoc Processes	Default starting level	Ad hoc approach often dependent on individual heroics; staff frequently manage by exceptions (emergencies). Some policy/procedural memos may be evident, typically for discrete tasks and special cases. Difficult for colleagues to "cover" when another is away; difficult ramp-up for new employees ("baptism by fire"). Customers claim their expectations were not met; staff complains the expectations were not realistic. Successes are case specific and the solution is not readily repeatable in future cases.

Source: author

7.2 CRM Level 2 – Repeatable Transactional CRM Processes

Performance Characteristics

At level 2, process is established at a tactical or project level. Some basic project management skills are employed and may even begin to track process cost, schedule and functionality. Functions and projects are performed according to their documented plan. Tactical successes are now repeated when similar issues are faced. Process discipline keeps staff from abandoning processes in times of crisis. Key milestone points are defined and management has visibility into status and service delivery at these key points. The functional area still faces a significant risk of exceeding cost and time expectations (Ahern et al, 2004).

Process Areas Covered

The following list covers Process Areas for this level as recommended by CMMI and adapted to CRM. Chapter 8 covers Practice Areas in detail.

1. Customer Requirements and Expectation Management
2. Customer Quality Assurance
3. CRM Performance Measurement and Analysis
4. Fulfillment or Project Planning
5. Fulfillment or Project Monitoring and Control
6. Material and Human Resource Supply Management
7. Configuration Management and Customization

Technology Characteristics

Workflow helps to track a discrete transaction through key processes. All key players in the process use the central tools. A centralized document management system exists with version control.

Supporting sales tools include tracking of the sales cycle by customer according to the formal account management plan and an aggregate "pipeline" of all sales by stage in the cycle, tracking of all requirements discussion in the centralized CRM database, proactive reminders and escalation of important tasks overdue, moderated (controlled) document management that holds approved templates for letters, product information, proposals, and contracts, customer requirements profiling, automated workflow for the Requirements Management process with validation points for required data, and document library of Requirements Management process and constituent forms. Busy call centres may require integration between phone system and CRM ("telephony" integration). Validating discrete order expectations requires controlled sales visibility/access into the ERP system for current inventory availability or ETA, for production turn-around times, to enter and update sales forecasts to inform inventory or production planning decisions, to enter quotes in an (ERP) environment that controls pricing and approved discounts, and for credit availability.

Customer support and interaction tools facilitate the tracking of all key "requirements" communications, including important call notes, emails, and documents in the centralized

CRM system. Help desk or related support technology should display SLA customer priority and commitments to support personnel. It should record requirements discrepancies in a database, by customer.

Marketing tools include targeted marketing capabilities, if applicable, with appropriate database segmentation capability, customer feedback databases, and customer feedback interfaces (e.g. website).

7.3 CRM Level 3 – Defined Organizational CRM Standards and Processes

Performance Characteristics

At level 3, the organization has established processes and standards for processes across the organization or business unit level. Tailoring guidelines accompany these standards. Individual functions inherit their process standards and their objectives from the standards and objectives of the firm. As any new functions or projects emerge, management ensures that approved master processes and standards are used to create tactical processes that align with business objectives.

The main difference between levels 2 and 3 is that the scope of standards and objectives exist at the organization level, not just the transactional level. This enables consistency across the functional areas and across the organization. Processes begin to provide qualitatively predictable outcomes (Ahern et al, 2004).

Process Areas Covered

The following list covers Process Areas for this level as recommended by CMMI and adapted to CRM. Chapter 8 covers Practice Areas in detail.

1. Organizational Environment for Integrated CRM Processes
2. Organizational CRM Process Focus
3. Organizational Process Asset Library
4. Organizational CRM Process Training
5. Customer Requirements Development
6. Product Research and Development
7. Internal Verification
8. Customer Validation
9. Integrated Project Management
10. Integrated CRM Teaming
11. Integrated Material and Human Resource Supply Management
12. Risk Management
13. Decision Analysis and Resolution

Technology Characteristics

Workflow is tracked holistically across discrete transactional processes in a centralized system. Users schedule their process-related activities according to established process

plans, and colleagues monitor and cover processes when a team member is overloaded or away. Escalation of key exceptions or overdue events is automatic, based upon established standards. Project management tools are centralized and commonly used when projects are involved and scope or other project risks are documented and communicated to stakeholders. Team collaboration is generally conducted or documented via a centralized system. Customer feedback is formally gathered in a central database, in a consistent manner that facilitates trend analysis. The results of programs and other major decisions are regularly reviewed (e.g. sales results from a marketing campaign).

Supporting CRM technology tools should include the ability to gather quality and customer satisfaction data at all key touch-points in the organization into a centralized database, to track an audit trail of all quality-related communications, and the analytical tools necessary to identify trends. Help desk or related support technology must feed interactions related to quality into the central CRM view of the customer for all departments. Service Level Agreement (SLA) standards or established best practices and baselines must be readily visible to support staff, and the "pipeline" of issues should be visible to supervisors and managers. It should include an integrated workflow system for managing customer service issues through resolution, with associated activities and automated monitoring of key timings at various stages with escalation of exceptions. It should record problem details by customer in a database, and solutions into a searchable knowledgebase. The CRM tools should include telephone system integration where required to ensure calls are logged, and document management with quality-related documentation such as technical bulletins, product information, or contracts with customers.

7.4 CRM Level 4 – Quantitatively Managed CRM Processes

Performance Characteristics

This level is about establishing precise operational control capabilities over process and service quality. The firm has identified and selected sub-processes that contribute to process performance. Metrics are used, and quantitative metrics are implemented using statistical and other quantitative techniques. The scope of control metrics is sufficient to identify variations in processes at the individual and organizational levels.

At this level, management is able to monitor process and service quality, recognize when it falls outside of established standards, and take appropriate action. The firm is able to adjust and adapt service according to customer needs or special circumstances, without significant loss of service quality or deviation. Process performance is now quantitatively predictable (Ahern et al, 2004).

Process Areas Covered

The following list covers Process Areas for this level as recommended by CMMI and adapted to CRM. Chapter 8 covers Practice Areas in detail.

1. Organizational CRM Process Performance Standards and Measures
2. Quantitative Project Management

Technology Characteristics

Supporting CRM technology tools should include databases for recording current data, historical data, derived data (e.g. summary calculations), and baseline standards. These require interfaces for gathering data from all relevant touch-points. Analytic, reporting, and "dashboard" tools help managers to actively monitor performance against the established baselines. Collaboration tools coordinate communication and evaluation of findings and to schedule follow-up action. Document management should also help to organize the files generated in the process.

7.5 CRM Level 5 – Optimizing, Adapting and Innovating

Performance Characteristics

At capability level 5, the firm is focusing on process improvement and taking action based on measurements of process performance itself. The organization establishes quantitative process performance objectives and improves processes toward those objectives. Improvement occurs both through continuous, incremental improvement, and through actively pursuing process innovation. The effects of process improvements are continually being measured against the new objectives and processes are adapted to changing business factors. The scope of control metrics is sufficient to identify causes of process variations which, if solved, could yield significant measurable process performance improvement (Ahern et al, 2004).

This level depends on an empowered workforce that is aligned with business objectives in order to bring about the degree of agility, adaptability and innovation required. The firm enables people through shared learning, collaboration, and knowledge-sharing tools.

Process Areas Covered

The following list covers Process Areas for this level as recommended by CMMI and adapted to CRM. Chapter 8 covers Practice Areas in detail.

1. Organizational Process Improvement, Deployment and Innovation
2. Causal Analysis and Resolution

Technology Characteristics

Level 5 is primarily a business leadership stage. As such, the technologies characteristics outlined in prior levels need to be aligned to support executive management's information and implementation requirements.

8.0 CRM PROCESS CAPABILITY FRAMEWORK: PROCESS AREAS AND REQUIREMENTS

This chapter provides a detailed description of each Process Area (PA) to be mastered at each level. Several PAs introduce a measurement requirement. Thus, specific metrics for use in a CRM context are identified in chapter 9. All PAs include the sub-practices that should be institutionalized, along with the Practice Implementation Indicator Descriptions (PIIDs) and lists of artifacts that should be evident if the practices are indeed institutionalized. The PIIDs and evidence form the targets of the Appraisal process described in chapter 10. Chapter 11 provides a roadmap for applying these components of the Framework.

8.1 CRM Level 1 – Ad Hoc Processes

Level 1 is the default level. As such, there are no process areas or recommendations for this level. Instead, an organization that finds Level 1 characteristics in their organization should look to Level 2 to identify gaps and pathways to improvement.

8.2 CRM Level 2 Process Areas for Repeatable Transactional Processes

The following are the Level 2 Process Areas recommended by CMMI, adapted to a CRM context if and as applicable.

8.2.1 Customer Requirements and Expectation Management

In some business scenarios such as consumer products, "requirements" may be as intangible as customer expectations developed about the class of products in general and the product brand specifically. Requirements management can entail market research and customer feedback. Agreement can come in understandable and honest instructions on product information.   Of course with complex, customizable or highly configurable products and services, requirements management is an active component. Not only is it critical to quality, it can also be critical to risk management.

In this key process discipline, employees follow processes established for discrete transactions to identify customer requirements, to manage changing customer expectations, to set expectations based on real capability, to recognize resource implications of meeting established customer requirements, and to identify inconsistencies between customer requirements and the deliverable (Ahern et al, 2004), Customer requirements management is institutionalized as a managed process.

CRM Applications by Functional Area

Marketing

Role

A firm can spend copious amounts of money to establish a brand image, only to be undermined in an instant by a deliverable that fails to meet their inflated expectations when applied in their environment (i.e. "fit"). Marketing has a responsibility in

requirements management to set realistic expectations for customers, and to inform product design decisions through market research.

Practice Implementation Indicators
At Level 2 capability, the Marketing function manages this discipline with organizational policies and process plans: for informing product design through market research; for accuracy and control of product claims in the context of the target audience ("fit"); for target marketing to suitable audiences using appropriate segmentation techniques; for monitoring and responding to customer feedback with respect to "fit" (Ahern et al, 2005).

Marketing monitors these processes for adherence to process and qualitative standards. Senior marketing managers are responsible for authorizing product claims, for reviewing target marketing segmentation, and for vetting the interpretation, scope and context of market research findings that inform product design. Additional evident artifacts for this discipline include customer feedback "fit" analyses, documented market research including application or environment assumptions, minutes of meetings to review process and standards against policy, change memos to respond to problems, authorizations of promotional claims and target marketing campaigns, training materials and completed training records for employees involved in the process (Ahern et al, 2005, PIIDs).

R&D
Role
Research and Development has a responsibility to consider customer applications of or environments for the product ("fit") in product design and documentation.

Practice Implementation Indicators
At Level 2 capability, the R&D function manages this discipline with organizational policies and process plans: for incorporating customer application and environment in design decisions; for developing and authorizing accurate product documentation that clearly states intended application or environment (Ahern et al, 2005).

R&D monitors these processes for adherence to process and to qualitative standards. Senior managers review and authorize final claims (e.g. product baselines and operating environments). Additional evident artifacts for this discipline include "document revision histories, authorizations, change request logs, minutes of meetings to review customer applications and environments input, training materials and completed training records for employees involved in the process" (Ahern et al, 2005, PIIDs).

Direct Sales and Account Management, Inside Sales, Order Taking
Role
In most cases, no group sets expectations more directly than the sales group, including claims of suitability and functionality, quality, delivery schedule, initial costs, total costs of ownership, and the firm's capability to support the customer at various stages. When claims are overstated, customer dissatisfaction can erode the firm's return on customer as a consequence.

Practice Implementation Indicators
At Level 2 capability the sales functions manage this discipline with organizational policies and process plans: for forming sales claims or promises; for validating product, price, availability, and ETA of deliverables; for order process, payment and credit terms; for management and/or peer review of sales proposals; for conducting a formal requirements gathering and analysis process for complex deliverables; for validating proposal parameters such as scope and timeline with stakeholders (such as "pre-sales consulting"); for identifying and scheduling other stakeholders (e.g. employees) in the process, including hierarchy of authority and communication; for identifying and disclosing known dependencies and assumptions; for documenting and managing change requests (Ahern et al, 2005, PIIDs).

Sales managers monitor these processes for adherence to process and to qualitative standards. Senior Sales managers are responsible for authorizing proposals and sales contracts, and for ensuring appropriate resources are available to properly conduct the process. Additional evident artifacts for this discipline include: a formal, documented account management plan across the sales cycle, with appropriate validation points; a complete requirements-gathering toolset (documents) including criteria, forms and completed checklists; revision history of these documents; a skills inventory of staff, that may be consulted during requirements management; authorizations; audit trail of sales cycle including all key communications; filed artifacts from customer requirements gathering; customer requirements analysis and reports with rationale; filed customer change request forms and logs; minutes from sales process review meetings; minutes from account requirements review meetings; training materials and completed training records for employees involved in the process (Ahern et al, 2005, PIIDs).

Customer Care, Technical Support and Engineering

Role
These support functions have a responsibility to inform the sales and marketing functions about real capabilities and limitations, and to co-develop and authorize service level commitments to customers. The concept of Service Level Agreements (SLA) is germane. Whether or not the firm formally signs an SLA, the customer does establish expectations of service level with respect to response time, resolution time, communication, employee knowledge and authority, and evident process.

Practice Implementation Indicators
At Level 2 capability the support functions manage this discipline with organizational policies and process plans: for setting internal Service Level standards including criteria such as customer priority, problem type and severity; for publishing service level standards externally; for approving customer Service Level Agreements; for determining internal resource levels required to satisfy customer requirements; for establishing service level commitments with customers based on an accurate assessment of internal resource levels and limitations; for visibility of Service Level commitments for any customer to support personnel; for training staff in domain knowledge relevant to customer requirements (Ahern et al, 2005, PIIDs).

Support managers monitor these processes for adherence to process and to qualitative standards. Senior support managers are responsible for authorizing customer service level commitments, if applicable, or internal standards and criteria for prioritizing customers and specific cases. Additional evident artifacts for this discipline include: a documented personnel and communication structure for the process of establishing and authorizing service level commitments with customers; published or contracted standard baseline timings, process and criteria for service level commitments; periodic or project-specific calculations of resource requirements for a proposed SLA; periodic calculations of service level capability with current resources and customer base; reviews of discrepancies between capability and committed requirements; communications audit trail for establishing commitments on specific projects, if applicable; SLA commitments displayed on customer record in support technology based on customer and case criteria; authorizations (Ahern et al, 2005, PIIDs).

Fulfillment, Project Management and Consulting

Special customer requirements should be formally tracked and managed as they affect the production and/or fulfillment of the product or service. Refer to the sales function above and ensure that relevant policies, processes and artifacts exist for managing the role of this functional area in the requirements management process, if applicable. If Project Management is a key part of the deliverable, refer to CMMI or the Project Management Maturity Model (Project Management Solutions, Inc., 1996) for more detail on the requirements management discipline, and to the CMMI Process Areas for Requirements Management and Project Management (Ahern et al, 2004, and Ahern et al 2005).

Point of Sale, Accounting and Records Management

Establishing customer expectations may depend on access to accurate pricing, inventory, production schedules, and expectations of ease of ordering, credit and payment terms. Refer to Sales function above and ensure that relevant policies, processes and artifacts exist for managing the role of this functional area in the requirements process, if applicable.

Legal, Compliance and Risk Management

Negotiating, managing and contracting deliverables in consideration of customer requirements is also about managing Risk, and in certain industries may be subject to compliance requirements. Refer to the functional areas above and ensure that relevant policies, processes and artifacts exist for managing risk and compliance in the requirements management process, if applicable.

Electronic Touch-points

Electronic touch-points, such as electronic brochures, web site content, online shopping and e-commerce systems, online account access, and online technical support, are all extensions of the functional areas above. Refer to each area and ensure that its electronic touch-points are covered by relevant policies, processes and artifacts thereof for managing expectations.

8.2.2 Customer Quality Assurance

In this process discipline, staff and management gather and act upon customer feedback on product and service quality. The firm monitors adherence of deliverables in accordance with customer requirements and expectations. Noncompliance issues are tracked and communicated, and resolution is communicated to the client and acted upon. Ultimately, the process is institutionalized as a managed process.

CRM Applications by Functional Area

All CRM and Supporting Functional Areas

Role

As discussed earlier in this paper, customer perception of quality is the sum of all of the visible cues, not just a tangible product. All functional areas have a responsibility to gather customer feedback on quality and customer satisfaction as they interact with the customer. They also have a responsibility to monitor and analyze that data, to identify discrepancies and trends, to formulate solutions and to act on them. R&D may require the most technical feedback to improve product design and deliverables. Sales and Marketing need to improve the accuracy of claims and commitments they make, and to improve their requirements management process based on feedback about quality. The supporting fulfillment and back office functions, such as accounting, need to ensure the accuracy of data that informs the expectation management process, such as pricing, availability and terms of sale. These functions must monitor customer feedback where it reflects upon those functions.

Practice Implementation Indicators

At Level 2 capability each functional area has organizational policies and process plans: for establishing qualitative service standards; for establishing customer satisfaction standards; for gathering customer feedback on quality and satisfaction; for monitoring customer feedback data relevant to their function whether in a direct or support capacity; for establishing and publishing a standard resolution process for quality discrepancies (such as warranty claims), with criteria; for maintaining resources to monitor and respond to quality issues; for publishing a quality management hierarchy with skill sets, communication lines, authority levels, and escalation paths and criteria; for training staff in quality standards and processes (Ahern et al, 2005, PIIDs).

Managers of each functional area also objectively evaluate product quality against its defined descriptions, specifications, standards, and the quality planning document. Internal history, strategic objectives and industry standards are all used for comparison. Problems are communicated to stakeholders and they are involved in problem resolution (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include customer satisfaction forms, non-compliance reports and completed forms, populated and updated quality feedback and customer satisfaction databases, analysis reports by product line and by customer segment, an organizational chart with quality assurance responsibilities clearly defined, quality checklists completed during fulfillment, audit trail of all communications pertaining to quality assurance, case tracking records with problem details,

knowledgebase of solutions, technical bulletins dispensed to customers to proactively address discovered problems, completed and logged change request forms for R&D, minutes from quality review meetings in each department, logs or documentation of any escalation occurring, status reports, training materials and completed training records for employees (Ahern et al, 2005, PIIDs).

8.2.3 Measurement and Analysis

This process discipline supplements all of the other Level 2 process areas, by going beyond just the establishment of organizational standards to incorporate active measurement and analysis. In this discipline the organization develops and sustains a measurement capability that provides the necessary management information to monitor and correct process performance and outputs. It also requires that measurement and management information align with business objectives. Ultimately, measurement and analysis processes are institutionalized as managed processes (Ahern et al, 2004).

Please refer to chapter 9 for detailed recommendations about metrics to implement in a Customer Relationship Management context.

CRM Applications by Functional Area
All CRM and Supporting Functional Areas
Role
Given that customer perception of quality is the sum of cues across functional areas, measurement and analysis are required in every functional area.

Practice Implementation Indicators
At Level 2 capability each functional area has organizational policies and process plans: for planning and performing customer quality assurance; for monitoring and controlling the process; for planning for, assigning and empowering adequate resources for measurement and analysis; for identifying and involving the relevant stakeholders; for training the participants.   Plans are detailed and include specific measurement objectives and specific methods for obtaining, storing, analyzing and reporting measurements to relevant stakeholders (Ahern et al, 2005, PIIDs).

Managers of each functional area establish and maintain their measurement objectives and identify their information needs. They also objectively evaluate their department's adherence to the measurement and analysis development process itself.   Additional evident for this discipline include:

> "documentation of business objectives for measures, documented information requirements with frequency, baseline measures with definitions, procedures for gathering, storing, analyzing and reporting data, an organizational chart with responsibilities for measurement and analysis, databases of quality data and applied measurements thereof, analysis results (graphs, reports) and conclusions, data gathering forms and interfaces, data analysis, and minutes of measurement review meetings with follow-up actions." (Ahern et al, 2005, PIIDs)

8.2.4 Fulfillment or Project Planning

"Supply chains matter," according to Peppers and Rogers (2005, p. 153). "If you try to implement a customer-centric initiative on top of a weak or poorly integrated supply chain, you'll merely provide your customers with a clearer view of your inadequate logistical capabilities."

Fulfillment may be as complex as project management in service delivery or as simple as stocking retail shelves. The production, distribution, retail or service delivery functional areas may or may not be visible to the customer, but they have an important impact on turn-around time, quality of deliverables and real cost. The wise firm recognizes its dependencies on these supporting functions to meet customer expectations, and it manages them. The firm plans the approach to fulfillment and sets standards for performance. It obtains commitment to these from the participants, which may include the customer. Parameters affecting fulfillment are identified. A complete workflow is established and maintained as the basis for the fulfillment process plan. Ultimately, the process is institutionalized as a managed process (Ahern et al, 2004).

CRM Applications by Functional Area
Quoting, Order taking and Accounting
Role
Order processing may be handled by an accounting order desk, retail, inside sales, direct sales, or electronic means such as online shopping and EDI. Interaction at the moment of ordering sets expectations with the customer regarding price, discounts, availability, options, terms and deadlines. The ordering process requires access to accurate information in a controlled process that can be used to set and adjust customer expectations accurately.

Practice Implementation Indicators
At Level 2 capability the Order functions manage this discipline with organizational policies and process plans: for processing orders; for validating order parameters; for handling terms, accounts and payment options; for identifying and addressing risk; for identifying and involving all stakeholders in the order fulfillment; for planning human resource levels; for training plans for order personnel. Senior managers are also responsible for ensuring that planning is conducted in accordance with planning policies and standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
    "a work breakdown structure (WBS) for order processing and validation;
    estimates of "typical" order processing effort; staffing plans and profiles;
    accounting and order entry with inventory, or point-of-sale, as applicable;
    training plans and completion reports; renegotiated budgets, schedules,
    requirements list, and stakeholder agreements; documented commitment by
    those implementing the plan; documented commitments by those responsible
    for providing resources; cost estimations, controls and rationale; credit
    management rules, criteria and procedures; approvals; forecasts that satisfy

inventory and production scheduling requirements; change request logs; audit trail of significant order changes or overrides." (Ahern et al, 2005, PIIDs)

Fulfillment, Project Management and Consulting
Role

Whether the nature of fulfillment is manufacturing, retail or service, the ability to fulfill depends on many variables. The assumption here is that these functions employ appropriate discipline for their discrete internal functions, such as manufacturing quality, which lie outside of the scope of this Framework. The CRM application is Fulfillment's supporting role to the front office CRM functions.

Fulfillment requires inputs from the CRM functions, such as sales forecasts, so that appropriate production schedules, inventory, and human resources will be ready to meet customer expectations. Fulfillment has a responsibility to stand ready to meet anticipated demand. It also has a responsibility for pricing, timing and quality that satisfies agreed-to customer requirements.

Practice Implementation Indicators

At Level 2 capability the Order functions manage this discipline with organizational policies and process plans: for fulfillment planning approach, standards, and reviews thereof; for estimating fulfillment parameters such as availability and dates; for a complete workflow plan with critical timings, dependencies, and stakeholders identified (which may include the customer); for quality management; for risk management; for cost budgeting and control; for materials resource planning; for human resource planning and training (Ahern et al, 2005, PIIDs).

Fulfillment managers are responsible for ensuring that planning is conducted in accordance with planning policies and standards. Additional evident artifacts for this discipline include:

> "a work breakdown structure (WBS) with revision history; task descriptions; work product descriptions; production cost estimates or budgets; lead times; inventory control; materials requirement planning (if applicable); current and historical sales forecasts that satisfy inventory and production scheduling requirements; staffing plans and profiles; list of critical facilities and equipment; estimates of labour, machinery, materials, and methods that will be required; estimating methods, models, rationale, tools, algorithms, and procedures with revision histories; use of validated models; use of models that are calibrated with historical data; required skills inventory; training plan and completion records; stakeholder involvement plan." (Ahern et al, 2005, PIIDs)

If the deliverable has a strong Project Management component, evident artifacts should also include:

> "documented project plans with revision history defining deliverables, dates, fees and dependencies; project lifecycle phases with milestones; scope estimates and re-negotiated estimates; documented assumptions, constraints, and rationales; change requests; minutes of meeting setting, reviewing,

modifying project parameters; approvals; interdependencies of project phases on other phases, projects, and stakeholders; records of stakeholder involvement; identified risks; knowledge and skills database and requirements; authorizations." (Ahern et al, 2005, PIIDs)

For more on Project Management, please refer to the Project Management Maturity Model (Project Management Solutions, Inc., 1996) and to the CMMI Process Areas for Project Management (Ahern et al, 2004, and Ahern et al 2005).

8.2.5 Fulfillment or Project Monitoring and Control

This process discipline supplements Fulfillment or Project Planning with the control mechanisms required to manage the process. This discipline provides management with an understanding of the status of fulfillment so that appropriate corrective actions can be taken when fulfillment performance deviates significantly from plan. Ultimately, the process is institutionalized as a managed process.

CRM Applications by Functional Area

Quoting, Order taking, Accounting, Fulfillment

Role

The firm monitors the ordering process against the standards and policies set internally. It monitors order fulfillment delays or exceptions to inform the customer, sales representative or relevant stakeholders. It monitors Fulfillment functions against plans and commitments. It monitors corrective action to ensure it is being executed when required and according to plan. It monitors outputs and quality versus plans and commitments (Ahern et al, 2004).

Practice Implementation Indicators

Fulfillment performance is managed with organizational policies and process plans: for monitoring planned fulfillment versus commitment; for monitoring actual fulfillment versus commitment; for monitoring risk such as credit; for monitoring stakeholder involvement; for reviewing exceptions versus commitment; for taking corrective action through closure for exceptions; for providing adequate resources and appropriate training; for monitoring and control. Senior managers are also responsible for ensuring that fulfillment monitoring and control is conducted in accordance with planning policies and standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

"records of fulfillment performance and deviations with respect to planned schedule, resource availability, cost and quality; status reports; minutes of meetings to review these factors; cost accounting plans; databases of fulfillment metrics, and reports and trends thereof; records of risk monitoring; stakeholder identification and engagement records; completed project status and milestone review documents; variance reports; records of issues requiring corrective action; audit trails of corrective action major activities; stakeholder risk communications; minutes of meetings to review metrics, address issues, engage stakeholders with action items; change requests; performance

indicators (baselines); revisions to fulfillment plans and work products (WBS, estimates, requirements, commitments, resources, processes, and risks) incorporating the corrective actions." (Ahern et al, 2005, PIIDs)

Project Management and Consulting

Role

The firm monitors the project work products, milestones, timelines, and budgets against the plan. It monitors stakeholder involvement against the plan. It periodically reviews outstanding work products. It collects and analyzes project issues, monitors risks, then determines and executes corrective actions through closure (Ahern et al, 2004).

Practice Implementation Indicators

Project Monitoring is conducted and reviewed in accordance with organizational policies and process plans: for planning and performing projects; for providing, training and empowering adequate resources to conduct project monitoring and control; for identifying and involving the relevant stakeholders; for monitoring and controlling this process against the planning document. Senior managers are also responsible for ensuring that project monitoring and control are conducted in accordance with planning policies and standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

> "documented major milestones; periodic comparisons of project performance results against estimates; status and milestone reports and/or minutes of status review meetings; project cost accounting; project presentation packages showing planned activities; documents, communications, and data employed to monitor project risk and update risk status (such as probability, priority and severity); records of stakeholder involvement; project team stakeholder review presentation materials; stakeholder issues and status; documented project review results; reviews of project monitoring measurements and analysis; documented milestone review results; documented analysis of issues needing corrective action; corrective action plans; audit trails of corrective actions taken; evidence that resources have been applied and schedules have been followed to implement the planned corrective actions on identified issues; indications that knowledge and skills of project personnel are monitored; authorizations; records of communications of project status to relevant stakeholders; records of issues, change requests, problem reports for work products and processes; corrective action effectiveness analysis; revision history for project plans and work products." (Ahern et al, 2005, PIIDs)

8.2.6 Material and Human Resource Supply Management

The quality, cost and timeliness of the customer deliverable is also dependent on inputs that supply the process. Supply may be materials, human resources, or even knowledge. In this discipline, the organization manages the impact of supply on customer deliverables. In practice the firm enters formal agreements with suppliers. The terms of agreement are satisfied by both parties. Ultimately, the process is institutionalized as a managed process (Ahern et al, 2004). Practitioners with heavy procurement and supply

chain requirements may wish to consult the supplier management and acquisition Practice Areas within Ahern et al, 2004 and Ahern et al, 2005 directly.

CRM Applications by Functional Area

Procurement, Human Resources

Role

These functions are directly responsible for establishing, maintaining, and satisfying standards and terms such that the organization can secure the necessary inputs to fulfill customer deliverables. They are responsible for many of the cost and timing variables of the deliverable.

Practice Implementation Indicators

At Level 2 capability this discipline is managed with organizational policies and process plans: for planning and performing the supplier agreement process; for determining the type or source of acquisitions; for evaluating and selecting suppliers based on their ability to meet specified criteria; for planning, monitoring and controlling the process; for reviewing supplier deliverables against agreed parameters before accepting supply; for meeting the organization's commitments according to agreement; for training and providing adequate resources to execute the process; for assigning responsibility and authority to perform, develop and implement the process; for identifying and involving the relevant stakeholders. Managers are also responsible for ensuring that supplier evaluation, selection and contracting are executed in accordance with policies and standards. Managers are responsible for ensuring that supplier deliverables are reviewed and for ensuring that both parties meet their commitments (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

> "list of acquisition types by product; make/buy analyses, if applicable; supplier selection criteria and rationale; evaluation criteria and evaluation results; list of candidate suppliers; preferred supplier list; documented formal supplier agreement with revision history; licensing agreement; procurement documentation; checklists or criteria for reviewing delivered supply; supplier progress reports and performance measures; reports of internal performance for the firm's responsibilities to the supplier; supplier activity action items tracked to closure; audits, corrective action requests, and plans to improve supplier performance; authorizations; closure or termination of supplier agreement; training reports; support and maintenance reports; vendor maintenance agreements." (Ahern et al, 2005, PIIDs)

Human Resource management is clearly an important discipline to supply, train and motivate the personnel that deliver customer service and supporting activities every day. The discipline permeates many of the Process Areas covered in this model. For greater depth on Human Resource management, refer to the People Capability Maturity Model which stems from the same CMMI source (Carnegie Mellon University, 2001).

8.2.7 Configuration Management and Customization

If the firm's deliverables are complex products or services that are highly tailored or configured, then the capability to implement and/or support this configuration is vital to customer quality. Please refer directly to the CMMI Configuration Management Process Area for detailed guidance.

8.3 CRM Level 3 Process Areas for Defined Organizational Standards and Processes

The following are the Level 3 Process Areas recommended by CMMI, adapted to a CRM context if and as applicable.

8.3.1 Organizational Environment for Integrated CRM Processes

In this discipline, the organization itself becomes CRM process-centric with the appropriate infrastructure and management objectives.

CRM Applications

Executive Management Team and Functional Area Managers

Role
Management provides an infrastructure that maximizes the productivity of people and affects the collaboration necessary for integrated processes. Management actively nurtures integrative and collaborative behaviour. Ultimately, the development and nurturing of the culture and supporting infrastructure are institutionalized as defined processes (Ahern et al, 2004).

Practice Implementation Indicators
At Level 3 capability, senior management has organizational level policies and process plans for establishing and maintaining: a shared vision for the organization, a work environment that supports and encourages process collaboration, leadership mechanisms and incentives that encourage collaborative and integrative behaviour at all levels, guidelines for incorporating life-work balance, identification of skills needed to support an integrated CRM process environment, and adequate resources, training, and authority assignment to support this environmental development. Senior managers objectively evaluate the performance of the environmental assessment and action planning process itself (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
> "the organization's shared vision; communication materials for shared vision (delivered); definition document for an integrated work environment; organizational guidelines for team/functional responsibilities; an integrated work structure chart; documented issue resolution process; demonstrations of components of the integrated work environment; employee training plans, materials and completed records; leadership training plans, materials and completed records; incentive plan aligned with integrative and collaborative

behaviours at all levels of the organization; records showing relevant incentives awarded across the organization." (Ahern et al, 2005, PIIDs)

8.3.2 Organizational CRM Process Focus

In this discipline, the firm actively supports a process-focused environment.

CRM Applications

Executive Management Team and Functional Area Managers

Role

Management assesses strengths and weaknesses of the organization's process capabilities periodically and as needed to identify improvement opportunities. Management then plans and implements improvement, deploys organizational process assets, and incorporates those experiences into the organizational process assets. Ultimately, this continuous assessment and improvement process is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators

At Level 3 capability, senior management has organizational level policies and process plans: for establishing and maintaining the description of the process needs and objectives for the organization; for appraising process capability strengths and weaknesses periodically and as needed; for identifying improvements and developing relevant action plans. Senior management also has organizational level responsibility: to implement those action plans across the organization; to deploy organizational process assets; for monitoring and controlling the process; to provide adequate resources and training for assessment and improvement; to identify and engage relevant stakeholders; to supplement the assets with lessons learned from this process itself. Senior managers also objectively evaluate their performance of the process assessment and action planning process itself (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

> "process needs and objectives documented with revisions; organizational process appraisal plans; relevant findings reports with proposed improvements; prioritized, approved action plans with revisions; improvement initiative status reports and results; a formal Process Asset Library with tools and documented methods; process "lessons learned" reports; process and product policies, standards, and guidelines with adequate detail; metrics and trend analyses before and after process improvement; appraisal briefings describing methods, purpose, etc.; results of stakeholder reviews of process action plans; documented infrastructure for process improvement with clearly defined roles and responsibilities including management, process owners, process group, action teams, and practitioners; implementation cost records including time; negotiated commitments among stakeholders, with revisions; identified issues from implementation; relevant training materials and completion records; lessons learned repository; collection of best practices." (Ahern et al, 2005, PIIDs)

8.3.3 Organizational Process Asset Library

In this discipline the firm establishes and maintains a usable set of organizational process assets. These process assets set forth standard processes and quality standards that are intended to be used as the foundation for lower level discrete or functional processes (Ahern et al, 2004).

CRM Applications

Executive Management Team and Functional Area Managers

Role

The process of authoring and maintaining an organization-wide process library is institutionalized as a defined process.

Practice Implementation Indicators

At Level 3 capability, senior management at the organization level have organizational policies and process plans for establishing and maintaining the organization's set of standard processes, the approved process lifecycle models, tailoring guidelines and criteria, and the organization's process asset library. This includes plans for monitoring and controlling the organizational process standards development process, for identifying stakeholders, for participant training plans, for providing adequate resources, and for delegating authority to carry out the process. Senior managers objectively evaluate their performance of the Organizational Process Definition process itself (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

> "the organization's library of standard processes with revision histories; process architectures describing interrelationships; collection of best practices; process tailoring guidelines and criteria with revisions; base lifecycle models with selection criteria, tailoring guidelines and revisions; a defined common set of measures; output quality standards; approvals; completed checklists for process compliance reviews; relevant measurement data; guidelines for tailoring measures related to products and processes with revisions; populated measurements repository with population and use policies and reviews thereof." (Ahern et al, 2005, PIIDs)

8.3.4 Organizational CRM Process Training

Creating a supportive process culture requires that the firm develop the skills and knowledge of people, so they can perform their roles effectively and efficiently.

CRM Applications

Executive Management Team and Functional Area Managers

Role

The firm develops its training capability and provides the training, as necessary. Ultimately, process training is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators

At Level 3 capability, senior management at the organization level have organizational policies and process plans for establishing and maintaining: the strategic training needs of the organization, training decision hierarchy or autonomy, training tactical plans, training capability, delivering training in accordance with objectives and tactical plans, training records, and assessing training effectiveness. Senior managers objectively evaluate their performance of the Organizational Process Training discipline itself (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

"documents of training needs; catalogues of training curriculum, courses, prerequisites, skills, schedules, funding, roles and responsibilities; skills matrix and employee skills inventory; organizational training tactical plan with revisions; training materials and supporting artifacts; analysis and revisions of training materials and resources; instructor certifications as applicable; completed training records; assessments of training program performance relative to organizational objectives; periodic reviews of training capability and resources; instructor evaluation forms; examinations; student feedback forms; revisions to materials, methods or curriculum resulting from feedback." (Ahern et al, 2005, PIIDs)

8.3.5 Customer Requirements Development

Level 3 Requirements Development incorporates a broader spectrum of stakeholders, while drilling deeper into analyzing, co-developing, and meeting requirements, than does the Level 2 Requirements Management discipline. Stakeholders expand to all of the mutual players including recognition of the firm's needs, even if they are competing needs, and other stakeholders that may be affected. Requirements Development is about iterative development and analysis of customer, product, and product-component requirements in complex deliverables.

CRM Applications by Functional Area

Sales, Consulting, Engineering, and Project Management

Role

In this Level 3 discipline, employees actively collect stakeholder needs, expectations, constraints, and functional requirements and translate these into customer requirements. The customer is an active participant. Project leaders analyze and validate requirements and develop a definition of required functionality in agreement with stakeholders. The process is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators

At Level 3 capability, the discipline is managed with organizational policies and process plans: for gathering stakeholder needs, expectations, constraints, and functional requirements for all phases of the product lifecycle; for transforming these into documented and defined customer requirements; for analyzing requirements to ensure that they are necessary and sufficient; for analyzing requirements to balance stakeholder needs and constraints; for validating these with stakeholders; for monitoring and

controlling the requirements development process; for providing, training and empowering appropriate resources to conduct the requirements development process. Management monitors the requirements development process for adherence to policy and plan (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
"artifacts from stakeholders indicating their needs, expectations, and constraints; consolidated findings report and subsequent balancing of conflicts; documented project lifecycle; conceptual solutions; mapping of customer needs to technical parameters; agreed-to summary of customer requirements; derived requirements; product requirements; product component requirements; operational concept, usage cases, timeline scenarios for the customer application; definitions of functionality in logical groupings; requirements analysis report indicating impact on cost, schedule, performance, functionality, quality factors, maintenance, expansion, or risk; assessment of related risks; analysis and rationale of cost versus performance tradeoffs; results of requirements validation process being conducted with stakeholders; agreement on techniques to demonstrate delivered functionality; approvals and agreements; results of design review meetings; integration test plans; definition of environment in which the product will operate; definitions of time-critical functions; identified variables that influence cost, schedule, functionality, risk or performance; risk mitigation plans." (Ahern et al, 2005, PIIDs)

8.3.6 Product Research and Development

At Level 3, product design, development and implementation solutions are developed based on a standardized, planned approach. Design decisions are based on customer requirements and market research.

CRM Applications by Functional Area

Marketing, Research and Development, and Engineering

Role

In this Level 3 discipline, the marketing and research functions collect and analyze customer requirements from various internal data sources, and supplement data with market research. The development functions generate and select from alternative solutions based on this insight. They develop product designs and associated documentation. Ultimately, the Product Research and Development process is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators

At Level 3 capability the Sales functions manage this discipline with organizational policies and process plans: for the overall product development process; for developing detailed alternative solutions; for selecting solutions to further develop based on customer feedback and market research; for defining the intended application and environmental conditions; to document baseline conditions given those constraints; for selecting input resources that best satisfy production criteria; for implementing the design; for

monitoring and controlling the process; for providing, training and empowering participants. Management monitors the requirements development process for adherence to policy and plan, at least by qualitative standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
"lists of alternative solutions with selection criteria and rationale; intended operational concepts, scenarios, and environments; component selection decisions and rationale; documented mappings between requirements and product components; documented architecture, capabilities, component designs; documented design issues; make or buy analyses including criteria and rationale; factors analyses, such as functionality, available resources and skills, costs of acquiring versus developing internally, market research, competing or substitute products in existence, supplier capabilities; end-user training materials; user's manual, operator's manual, maintenance manual, installation manual; test plans, procedures, results, and acceptance criteria; site installation, training and maintenance records results of peer reviews, inspections and/or verifications performed; change requests." (Ahern et al, 2005, PIIDs)

8.3.7 Internal Verification

This Level 3 process area takes quality control to the next level: verify the specific customer deliverable before it is delivered. This can be applied whether the deliverable is a service, a complex product delivery, or as a periodic verification process in a volume production, distribution or retail establishment.

CRM Applications by Functional Area
Fulfillment, Project Management and Consulting
Role
In this Level 3 discipline, the fulfillment participants prepare for verification, conduct peer reviews on selected work products, and verify findings against the specified requirements. Ultimately, this process is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators
At Level 3 capability the internal verification process is founded upon established organizational policies and process plans for establishing and maintaining: a verification environment; the check points or work products to be verified; verification methods to be used for each; peer review responsibilities, resources, training and authority; approved analysis methods and tools for peer reviews; corrective actions; adherence to the process. Management objectively assesses the internal verification policies and plans for effectiveness and implements improvements as necessary (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
"identified requirements for the verification environment, including support equipment and tools and acquisition plans as necessary; lists of work products selected for verification; matrices tracing customer requirements to work

products to be verified; expected results and tolerances identified; documented verification methods and criteria for each; completed peer review schedules; completed peer review checklists; summary data and analysis reports from peer reviews; causal analysis of non-conformances; identified corrective actions; re-verification data and reports; trouble reports; method, criteria, and infrastructure change requests." (Ahern et al, 2005, PIIDs)

8.3.8 Customer Validation

Customers will naturally conduct their own validation. This Level 3 process area takes quality accountability and feedback to the next level by proactively engaging in validation with the client.

CRM Applications by Functional Area
Fulfillment, Project Management and Consulting
Role
In this Level 3 discipline, the fulfillment participants prepare for validation and then demonstrate that the product fulfills its intended use when placed in its intended environment. This process is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators
At Level 3 capability the customer validation process is founded upon established organizational policies and process plans: for establishing and maintaining a suitable validation environment; for selecting the products, functionalities and parameters to be validated; for establishing and maintaining and validation methods that will be used for each; for establishing and maintaining validation procedures and criteria; for communicating and resolving non-conformance issues; for identifying and engaging stakeholders; for providing, training and empowering the necessary resources to conduct validation. Management objectively evaluates, monitors and controls the validation process to ensure it is executed according to established standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
> "lists of products, components or functionalities to be validated; test and evaluation procedures for maintenance, training, and support; documented validation methods, criteria, tools and equipment necessary for each; validation resource plan; matrices mapping validation criteria to customer requirements and/or baselines; operational demonstration plan; non-conformance reports; causal analysis reports; documented issues and reviews of the validation process itself; procedure change requests." (Ahern et al, 2005, PIIDs)

8.3.9 Integrated Project Management

Consistent with the Level 3 objective of creating organization-wide processes, the Integrated Project Management discipline establishes the supporting infrastructure, systems and policies to integrate sub-projects across the enterprise in a consistent way.

The CMMI model provides greater detail for project-oriented delivery. Practitioners in a project delivery environment should explore the CMMI Process Areas for Project Management (Ahern et al, 2004, and Ahern et al 2005) and the Project Management Maturity Model (Project Management Solutions, Inc., 1996) for detailed guidance.

CRM Applications by Functional Area
Senior Management, Fulfillment, Project Management, and Consulting
Role
In this Level 3 discipline, senior management establishes and maintains a shared vision, standard project processes and quality standards, and tailoring guidelines for sub-project and constituent processes. Fulfillment participants tailor sub-projects and applied processes from these standards according to tailoring guidelines. They identify, engage and task all relevant stakeholders in the project through collaboration. They establish a shared vision for the project and a team structure for integrated teams that will carry out the objectives. Ultimately, the project integration process is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators
At Level 3 capability the project integration process is founded upon established organizational policies and process plans: for establishing and maintaining a defined integrated project management process; for planning and performing integrated project management; for identifying expectations, constraints, interfaces, and operational conditions applicable to a shared vision; for identifying and resolving issues with relevant stakeholders; for identifying, negotiating and tracking critical dependencies of the project and contingency planning; for determining, training, tasking and authorizing the integrated team participants; for integrating a given project plan with other affected projects; for managing, monitoring and controlling the project using the project plan; for using and contributing to the organizational process assets and measurement repository; for providing the necessary resources for integrated project management. Management objectively evaluates, monitors and controls the project integration process to ensure it is executed according to established standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
"organizational expectations and shared vision documented and delivered; standardized project plans, with templates; process tailoring document; organizational chart; process audit/review schedules with descriptions; individual project plans that follow templates and tailoring guidelines; operational conditions identified; documented project schedules, critical dependencies and constraints with status and revisions; defined processes per project; revision history of project estimates; identification and resolution of impacts of the project on other projects; risk assessment and risk mitigation plans and actions; stakeholder reviews and commitments to original plans, revisions, and elements; recognizable outputs from project execution; project metrics data and progress reports; process audits/review reports; documented corrective actions; best practices documentation; organizational project process asset library that is being populated and used; organizational metrics

database/repository; audit trail of scheduled and completed collaborative activities; evidence of escalation to managers as required; approvals; minutes of relevant meetings (both planning and case-specific)." (Ahern et al, 2005, PIIDs)

8.3.10 Integrated CRM Teaming

Consistent with the Level 3 objective of creating organization-wide processes, the Integrated CRM Teaming discipline establishes teams tasked with delivering and validating quality customer relationship activity.

CRM Applications by Functional Area

All CRM and Supporting Functional Areas

Role

In this Level 3 discipline, senior management establishes the organization-standard principles for integrated teaming. Fulfillment managers form and sustain integrated teams responsible for CRM service delivery. They establish and maintain a team composition that provides the knowledge and skills required to practice quality customer relationship management. They manage the team in accordance with the organizational standards. The integrated teaming process is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators

At Level 3 capability, the integrated teaming process is founded upon established organizational policies and process plans: for planning and performing integrated teaming; for monitoring and controlling the process; for establishing a team charter, with a shared vision that is aligned with organizational objectives and standards; for defining the tasks necessary to produce the desired CRM service; for identifying requisite knowledge and skills; for establishing and maintaining team operating procedures, roles, responsibilities; for providing, training and empowering team members; for identifying and engaging affected stakeholders; for collaborative interfaces between teams. Management objectively evaluates, monitors and controls the integrated teaming process to ensure it is executed according to established standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
> "documented team charter with shared vision defined; procedures tailored according to organizational standard process according to tailoring guidelines; team organizational charts with skills/disciplines, roles and responsibilities; definitions of assigned tasks and expected outputs; required and existing skills inventory; team training plans and completion records; budget for team; documented interfaces to other teams; team meeting minutes; personnel and resource requisitions and approvals; time records; audit trails of collaboration activities." (Ahern et al, 2005, PIIDs)

8.3.11 Integrated Material and Human Resource Supply Management

Level 3 supplier management goes beyond Level 2 establishment of standards to actively integrate suppliers and their capabilities and constraints into the firm's picture of

deliverable parameters. The result is greater accuracy and visibility of parameters that affect time and cost for the customer deliverable. The CMMI model provides additional details for Integrated Material and Human Resource Supply Management. Practitioners with heavy procurement and supply chain requirements may wish to consult the supplier management and acquisition Practice Areas within Ahern et al, 2004 and Ahern et al, 2005 directly.

CRM Applications by Functional Area

Fulfillment, Procurement, Human Resources, and Sales Forecasting

Role

In this Level 3 discipline, fulfillment area managers coordinate the firm's work with suppliers to ensure that commitments can be appropriately satisfied. The firm identifies alternative sources of supplies or human resources and evaluates them for fit. They actively manage supplier performance against agreement terms, while maintaining a co-operative project-supplier relationship. Ultimately, the process is institutionalized as a defined process (Ahern et al, 2004).

Practice Implementation Indicators

At Level 3 capability, the integrated teaming process is founded upon established organizational policies and process plans: for identifying and evaluating potential sources; for establishing supplier evaluation criteria with rationale; for evaluating selected supplier deliverables; for establishing terms for supplier agreements and revisions thereto, as appropriate, to reflect changing conditions; for providing resources, training and authority for supplier identification, evaluation, selection and management; for identifying and engaging affected stakeholders. Management objectively evaluates, monitors and controls the supplier integration process to ensure it is executed according to established standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

> "lists of potential suppliers; trade studies with relevant information on suppliers and sourcing; list of processes and supplier deliverables to be monitored; documented quality control process for supplier deliverables; reports on supplier activity and performance; minutes of supplier analysis meetings; minutes of technical interchange meeting; executed supplier agreements with revision histories; change requests for agreements." (Ahern et al, 2005, PIIDs)

8.3.12 Risk Management

This Process Area applies to all business in some capacity. From the CRM perspective, this runs from the risk of product returns, failed product or market development investments, customer turnover, negative publicity, liability damages, or regulatory violations, to actions from regulatory bodies. The objective of this process area is to identify potential problems before they occur, so that risk-handling activities may be planned and invoked as needed to mitigate adverse impacts. Practitioners in a heavily risk-managed environment may wish to explore the expanding Risk Management Process Area of the CMMI model directly (Carnegie Mellon University, 2007).

CRM Applications by Functional Area

All CRM and Supporting Functional Areas

Role

Anyone involved in potentially setting an expectation or fulfilling an element of the deliverable is involved in some degree of risk. As adapted from the CMMI PA description (Ahern et al, 2004), sales and marketing establish expectations that are accurate and clearly communicated, since this forms the customer's perceived benchmark. Order taking and Accounting must manage financial exposures to credit extension and mitigating loss on overdue or defunct account balances. They must also meet regulatory requirements in conducting the accounting, records management and financial reporting functions. R&D and the fulfillment functional areas may have roles in the quality, suitability, safety, regulatory compliance, and environmental impact of the deliverable, and the documented disclosure of these impacts.

Practice Implementation Indicators

At Level 3 capability, employees and managers prepare for risk management, identify and analyze risks, and determine the relative importance of each risk. They handle and mitigate risks to reduce adverse impacts on achieving objectives. Ultimately, the risk management process is institutionalized as a defined process (Ahern et al, 2005, PIIDs).

The risk management process is also founded upon established organizational policies and process plans: for establishing and maintaining the organizational risk management strategy; for determining and documenting risk sources, categories and priorities; for developing a risk mitigation plan for the most important risks, in accordance with the organizational risk management strategy; for monitoring and controlling risks and implementing risk mitigation strategies as appropriate; for defining parameters used to control the risk management effort itself; for providing, training and empowering the necessary resources to manage risk. Management objectively assesses, monitors and controls the risk management process to ensure it is executed according to established standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

> "organizational standard risk management and risk mitigation plan with tailoring guidelines; lists of internal and external risk sources with risk taxonomy or hierarchy; documented risk evaluation, categorization, and prioritization criteria; defined risk thresholds (baselines) to be monitored against; risk management tools or database; documented control and approval levels, monitoring and reassessment intervals; project-specific risk management plan; list of identified project risks with conditions, consequences, and priorities with revisions thereto; contingency plans; audit trail of risk monitoring and status updates with updated likelihood of occurrence and consequences; audit trail of risk mitigation and contingency activities; evidence of meetings with project stakeholders to review risk management strategy; structured risk disclosure statements; evidence that risks above thresholds have been caught in a timely manner; causal analyses for identified problems; lists of people responsible for tracking and addressing

each risk; reserve budget allocation for deployment of risk mitigation plans; general risk status reports, analyses, performance measures, and trends; revision history demonstrating updated risk-handling options and contingency actions, based on experience and covering newly-identified risks." (Ahern et al, 2005, PIIDs)

8.3.13 Decision Analysis and Resolution

This Level 3 discipline supplements all other disciplines with an active and formal process of evaluating decisions. This exercise helps an organization to better recognize gaps in management information, resources and the processes themselves. The organization can then take steps to close gaps, update standards and processes, and resolve root causes, such that better decisions result and the firm can avoid repetition of poor decisions.

CRM Applications by Functional Area
All CRM and Supporting Functional Areas
Role
Senior managers establish the decision evaluation process and relevant criteria to be evaluated. Managers apply the process when developing and selecting decisions.

Practice Implementation Indicators
Senior management establishes a formal evaluation process and criteria for generating and selecting among alternative decisions. Managers then develop and analyze possible decision alternatives using the established process and select the best alternative decision based on evaluation. Decisions are evaluated after implementation and resolution actions are chosen and implemented. Lessons learned are used to refine the criteria and decision selection process itself. Ultimately, this discipline is institutionalized as a defined process (Ahern et al, 2005, PIIDs).

The Decision Analysis and Resolution process is also founded upon established organizational policies and process plans: for establishing and maintaining guidelines for determining which issues are subject to a formal evaluation process; for establishing, maintaining and ranking the criteria for evaluating alternatives; for identifying alternative solutions; for evaluating alternative solutions using the established criteria and methods; for selecting solutions from among alternatives; for monitoring and controlling the process; for providing, training and empowering adequate resources to execute the process. Management objectively assesses, monitors and controls the decision analysis and resolution process to ensure it is executed according to established standards (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
"a guideline document specifying when to conduct a formal evaluation; evaluation criteria documented, grouped and ranked by importance; guidance document for preferred evaluation methods; evidence of alternative solutions evaluated and rationale for those selected in practice; evaluation methods selected for the decision; documented evaluation results with conclusions or

findings; rationale for the decision; completed criteria checklists by importance; decision evaluation schedules; documented risk assessments in practice; approvals; minutes of relevant meetings and memos." (Ahern et al, 2005, PIIDs)

8.4 CRM Level 4 Process Areas for Quantitatively Managed CRM

The following are the Level 4 Process Areas recommended by CMMI, adapted to a CRM context if and as required.

8.4.1 Organizational CRM Process Performance Standards and Measures

In this Level 4 discipline, the organization establishes quantitative process performance measures and standards to actively monitor and control process performance across the organization. Various CRM metrics are detailed in chapter 9.

CRM Applications

Executive Management Team and Functional Area Managers

Role
Senior management establishes and maintains quantitative parameters for the organization's set of standard processes and alignment with business objectives. Management gains an understanding of and visibility into the quantitative relationship between process performance and quality and performance business objectives (Ahern et al, 2004).

Practice Implementation Indicators
At Level 4 capability senior management establishes the performance models, metrics, baselines, and requisite data to quantitatively manage the organization's projects. Ultimately, the process of setting and implementing quantitative process performance measures at the organizational level is institutionalized as a defined process (Ahern et al, 2005, PIIDs).

Managers objectively evaluate their adherence to the quantitative planning and performance measurement discipline. The process is founded upon established organizational policies and process plans: for defining organizational process planning; for establishing and maintaining the organizational process performance process itself; for establishing and maintaining the applicable process performance model; for selecting from the organization's set of standard processes the processes or process elements to be included in performance analyses; for defining the metrics to be applied; for maintaining quantitative objectives for quality and process performance, based on business objectives; for maintaining the performance baseline metrics; for planning and performing the evaluation process; for monitoring and controlling the planning and evaluation process; for providing, training and empowering appropriate resources to manage the organizational performance process itself (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
> "documented process performance model; lists of selected processes or process elements; definitions of metrics; the organization's quantitative objectives for quality and process-performance levels; process performance baseline metrics; minutes of management meetings to select the metrics and applicable process elements to be measured and to establish baselines and objectives." (Ahern et al, 2005, PIIDs)

8.4.2 Quantitative Project Management

At Level 4, project management, not just constituent processes, becomes quantitatively managed to achieve the project's established quality and process-performance objectives.

CRM Applications

Executive Management Team and Functional Area Managers

Role
Senior management establishes and maintains quantitative parameters for the organization's set of standard processes and alignment with business objectives. Management gains an understanding of and visibility into the quantitative relationship between process performance and quality and performance business objectives (Ahern et al, 2004).

Practice Implementation Indicators
The Quantitative Project Management process is founded upon established organizational policies and process plans: for establishing and maintaining the organizational quantitative project management plan and standard processes; for establishing and maintaining the quality and process-performance objectives; for using historical stability and capability data to define the standard process base and sub-processes; for selecting the sub-processes that will be statistically managed; for monitoring project metrics against quantitative organizational standards; for identifying corrective action as appropriate; for selecting the measures and analytic techniques to be used; for understanding variation and causes; for recording statistical and quality management data in the organization's measurement repository; for providing, training and empowering adequate resources to conduct the quantitative project management process. Ultimately, this discipline is institutionalized as a defined process (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:
> "documented quality and performance objectives; sub-processes selected for statistical management; historical data used in the standards definition process; lists and definitions of measurement data that will be used to statistically manage the sub-processes; estimated probabilities of meeting objectives; status reports; results of statistical analyses; statistical process control charts for each sub-process; audit trails demonstrating that corrective actions were evaluated, selected and implemented in practice; populated and updated measurement repository; documentation of risks and evaluations thereof; approval; minutes of review meetings." (Ahern et al, 2005, PIIDs)

8.5 CRM Level 5 Process Areas for Optimizing, Adapting and Innovating

The following are the Level 5 Process Areas recommended by CMMI, adapted to a CRM context if and as required.

8.5.1 Organizational Process Improvement, Deployment and Innovation

CRM Applications

Executive Management Team and Functional Area Managers

Role

The management team with managers from all CRM and supporting functional areas identifies, selects and deploys incremental and innovative improvements that measurably improve the organization's customer relationship management capabilities. The management team evaluates and selects initiatives for their ability to support the business objectives for customer service quality and process performance (Ahern et al, 2005, PIIDs).

Practice Implementation Indicators

The Organizational Process Improvement, Deployment and Innovation process is founded upon established organizational policies and process plans: for defining the organizational optimization, adaptation and innovation process for CRM performance; for selecting the processes or process elements from the set of standard processes that are to be reviewed for opportunities; for collecting and analyzing improvement proposals; for identifying and analyzing innovative improvements that could increase the organization's quality and process performance; for identifying and engaging affected stakeholders; for investing in a pilot process to select improvements or innovations to implement; for deploying initiatives across the organization; for selecting proposals for deployment; for measuring the impacts of improvements and innovations; for providing, training and empowering adequate resources to conduct the innovation and deployment process (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

> "improvement proposals; results of proposal analyses; pilot activity reports; change requests; formal deployment plans with revisions, commitments and authorizations; action items for proposed improvements; audit trail of deployment activities; reports on deployment activities; updated training materials; risk analyses; impact assessments; deployment scorecard; populated and updated measurement data repository; analysis of measurement data; documented lessons learned; minutes for relevant meetings and decisions; cost tracking for deployment activities; minutes of senior management review of deployed process and technology improvements." (Ahern et al, 2005, PIIDs)

8.5.2 Causal Analysis and Resolution

CRM Applications

Executive Management Team and Functional Area Managers

Role

The management team and functional area managers actively identify causes of defects and other problems. They take action to prevent them from occurring in the future (Ahern et al, 2004).

Practice Implementation Indicators

Managers systematically determine and address root causes of defects and other problems. This discipline is institutionalized as a defined process (Ahern et al, 2005, PIIDs).

The Causal Analysis and Resolution process is also founded upon established organizational policies and process plans: for defining, planning and performing the causal analysis and resolution process; for selecting the defects and other problems for analysis; for performing causal analysis; for proposing solutions and corrective actions; for implementing approved proposals; for evaluating the impact of changes on process performance; for recording relevant data in the measurement repository; for providing, training and empowering adequate resources to conduct causal analysis and resolution (Ahern et al, 2005, PIIDs).

Additional evident artifacts for this discipline include:

"defect/problem data; data analysis results; causal analysis report; proposals for solutions and corrective actions; approvals thereof; audit trails and reports of completed corrective actions; measures of the outcomes of implemented solutions and corrective actions; updated knowledgebase incorporating solutions; updates to relevant process, standards or training documents in the organization's process asset library." (Ahern et al, 2005, PIIDs)

9.0 CRM PROCESS CAPABILITY FRAMEWORK: RECOMMENDED CRM METRICS

A recurring concept throughout the Process Areas is to establish standards of practice and then measure performance against those standards. CMMI does not specify metrics for CRM, but fortunately other sources do. What follows is not an exhaustive list, but it highlights some metrics that are valuable for their ability to continually inform management decisions, based on the value of customer relationships.

9.1 Customer Lifetime Value, Customer Equity and Return on Customer

Recall that the concept behind customer equity is to recognize – today – the future lifetime value of individual customers and changes to that value that result from customer relationship investments and changing conditions. The basic Customer Equity formula (Blattberg et al, 2001, pp. 23-24) simply stated is:

> CE = Weighted Forecast of Profit from First-Time Customers
>   - Cost of Acquiring
>   + Net Present Value of expected Future Profits of New Customers*
>   * (retention rate in each period x profit / discount rate, summed across future periods)
> OR
>   Returns on acquisition
>   + Returns on retention
>   + Returns on add-on selling
>   across the firm's entire customer portfolio, over time.

The basic Return on Customer formula (Peppers and Rogers, 2005, p. 6), a metric used to track customer equity changes over time, is simply stated as:

$$ROC = \frac{\text{(Cash flow from customers + change in Customer Equity) for period } i}{\text{Customer Equity at period } i - 1}$$

LTV calculations require prediction using the best information available. For methods to calculate LTV, please see the References section and consult Blattberg et al (2001), Gupta and Lehmann (2003), Kumar, Ramani, and Bohling (2006), Hogan et al (2002), and Bauer and Hammerschmidt (2005). To address some forms of prediction risk, please refer to Pfeifer, and Farris (2006) who incorporated degrees of elasticity in LTV calculations.

Of special note, Kumar et al (2006) described how to calculate LTV from published financial results. The ability to estimate the LTV achieved by competitors provides an important form of benchmarking (please refer to the article for details). Kumar et al suggest several additional uses for LTV: prioritizing customers, choosing marketing vehicles, identifying when to scale down marketing investments in a customer, identify variables that signal valuable and not-valuable customers, optimizing new product offerings, and even valuing companies.

9.2 Customer Acquisition Metrics

For those customers in the Acquired stages, Blattberg et al (2001, p. 57) recommended these metrics:

- Number of newly acquired customers vs. goals
- Acquisition rate (acquired vs. targeted)
- Cost of acquiring vs. projected retention and add-on revenues
- Total investments in new customers vs. other investments (capital equipment, product development, research)
- Ratio of acquisition cost to customer equity in the first period after acquisition
- Total new-customer investment as a percentage of sales and profits (compare period over period)
- The Net Present Value (Lifetime Value) of a new customer

Once a customer has established a buying history with the firm, begin to use customer-focused data (Blattberg et al, 2001, p. 58) to:

- Determine customer retention and defection rates
- Identify opportunities for add-on selling
- Understand and evaluate response rates of marketing programs
- Track and analyze customer buying patterns
- Measure the actual economic value of the customer
- Forecast and manage future customer behaviour
- Develop more effective customer-focused strategies

These metrics can be applied to measure sales and marketing activities beginning in Level 2 for new-customer acquisition, and for measuring and planning acquisition sales and marketing strategies beginning in Level 3. Exhibit 9A illustrates the Blattberg et al matrix for customer acquisition investment decisions.

Exhibit 9A – Customer Acquisition Investment Strategy Matrix

Retention Profit Potential		Short	Long
	High	Full Throttle Investment	Slingshot
	Low	Pay as you Go	Divest/ Restructure

Recovery Time of Acquisition Investment

Source: Blattberg, 2001, pp. 57-58

9.3 Customer Retention Metrics

Toyota's Lexus franchise recognizes the importance of customer interaction data (Blattberg et al, 2001, p. 84). Lexus monitors all service activity between the dealer and the customer. A dealer's margins are dependent on the quality of customer interactions.

The result has been retention rates of about 75 percent for Toyota versus 50 percent for the U.S. automobile industry as a whole. As a minimum, Blattberg et al (2001, p. 87) recommended these summary-level retention metrics:
- Total number of current customers
- Number and percentage defected
- Duration-adjusted defection and detention rates

But, to match retention investments to the retention value of individual customers, Blattberg et al (2001, p. 82) stated that managers need to develop an in-depth understanding of customer behaviour:
- Identify changes in a customer's buying patterns over time
- Monitor their trends of purchases by product category
- Identify what other customers purchase in complementary categories
- Track how different customers respond to various promotions
- Use market research to determine their level of spend or available disposable income in the category

How do we monitor retention based on a specific customer's behaviour? Blattberg et al (2001, p. 86) recommended that the firm track several parameters of retention such as:
- Complaints and resolution times
- Promotions sent
- Fulfillment performance and delays
- Customer satisfaction results
- Billing history
- In the case of a channel partner (B2B), their sales and profits

A more accurate method to determine retention equity is an RFM model (Recency, Frequency, Monetary) to create a targeting strategy, as illustrated in Exhibit 9B. An RFM model tracks customers through their purchase histories and groups each into cells with similar purchase sizes, frequencies and timings. It then predicts future customer behaviour by cell.

Exhibit 9B – Sample RFM Model

		Recency (in Months)				
Frequency	**Monetary**	**0-6**	**7-12**	**13-18**	**19-24**	**25+**
1	<$50	First-Time Customers	Low Targeting Value			
1	>$50					
2	<$50	Early Repeat Customers	Non-Core Defectors			
2	>$50					
3	<$50					
3	>$50					
4	<$100	Core (High-Value) Customers	Core Defectors			
4	>$100					
5+	<$150					
5+	>$150					

Source: Blattberg et al, 2001, p. 18

These metrics can be applied to measure the performance of retention activities in Level 2, and for measuring general retention strategy performance beginning in Levels 3 and 4.

9.4 Add-on Selling Metrics

Blattberg et al (2001, p. 103) suggested that a firm must determine how many add-on offers it can economically afford to make per period, and compare that to the response rate for these offers. Response rate is determined by the value of product or service, how it fits with other products, the customer's affinity with the firm, cost of the offered product, and specific marketing communications targeted to the customer. They suggest the following metrics to determine the value of add-on selling to the firm:

- Sales quantity per offer
- How much it costs to make the offer
- The size of the customer universe
- Margins on the offered products
- Accounting Metrics for Add-on Selling:
    - Changes in sales from retained customers
    - Changes in profits from retained customers (compare to overall numbers)

They recommend using duration-adjusted calculations to account for new versus long-term customers.

Cross-buying (CB) analysis determines the likelihood of cross-buying between two products or services to identify add-on selling opportunities (Blattberg et al, 2001, pp. 121-122). First calculate the number of times that two products, i and j, are purchased together as a percentage of the firm's total purchases (Z_{ij}). Next calculate the total purchases of each product without the other (X_j x X_j). The cross-buying measure for these two products (CB_{ij}) is given by:

$$CB_{ij}=Z_{ij}/(X_j \times X_j)$$

If CB is significantly less than one, the products have below-average cross-buying. If CB is greater than one, then cross-buying occurs. A communication campaign to encourage buyers of one to buy the other would likely have a good response rate.

Collaborative Filtering is a related approach. If Customer A buys certain products in combination, then when Customer B buys one of those products, he is likely to buy the related product (Blattberg et al, 2001, p. 122). For this reason, when purchasing a book at Amazon.com, the website prompts with "Customers who purchased this book also purchased xyz book".

These metrics can be applied to measure cross-selling and up-selling activities beginning in Level 2, and for measuring the value of organizational strategies for add-on sales beginning in Levels 3 and 4.

9.5 A Management Accounting Approach to Customer Equity

A Customer Equity Balance Sheet

A customer equity "Balance Sheet" differs somewhat from a traditional balance sheet (Blattberg et al, 2001, pp. 161-168). It distinguishes between customers at different stages of the customer lifecycle, and it incorporates future cash flows from customers, based on projected retention rates and spending behaviour. It delineates four sources of value:

- New customers, for current period
- New customers, for future periods
- Retained customers, for current period
- Retained customers, for future periods

Future period numbers are the discounted future profits represented by retained customers from all customer cohorts. A cohort is a group of customers that entered the cycle in the same period. The sum of the four metrics is the customer equity for a firm's entire customer base.

A Customer Equity Flow Statement

A customer equity "Flow Statement" is a summary statement, compiled periodically, that indicates period over period *changes* in customer equity (Blattberg et al, 2001, pp. 168-171). It also indicates the source of gain or loss. It uses six categories:

- New customers, for current *and* future periods
- Retained customers, for current *and* future periods
- Non-retained customers, for current *and* future periods

These computations stem from retention rate dynamics and buying behaviour patterns (frequency, volume, or add-on buying). Retention is used to predict the number of customers in each period, and patterns to determine per-customer margins each period. Period-to-period comparisons drive the customer equity flow statement which contains (Blattberg et al, 2001, pp. 168-171):

- Gains/losses from new customers, for current and future periods
- Gains/losses from retained customers, for current period
- Expected gains/losses from retained customers, for future periods
- Expected lost profit from defecting customers, for current period
- Expected lost profit from defecting customers, for future periods

Implementing such management accounting perspectives helps to bridge the gap between accounting and marketing languages. It makes visible the longer-term repercussions of investments made today in customer relationship management. Using customer equity accounting statements can usher in a fresh new perspective that helps to align investments and resources in ways that help to maximize returns from customers. These metrics can be applied for quantitative analysis of organization-wide customer relationship management performance in Level 4 (please refer to section 8.4).

10.0 CRM PROCESS CAPABILITY FRAMEWORK: SELF-APPRAISAL METHODOLOGY

Understanding performance characteristics, specific practices, evident work products, and customer-centric performance metrics is only part of the puzzle. This chapter simplifies CMMI's defined appraisal process into a methodology for practitioners to conduct a self-appraisal of the CRM Process Capabilities of their firm.

CMMI has a complete appraisal methodology called SCAMPI[SM]. It is primarily designed for formal appraisals from certified Lead Appraisers. This does not apply to the CRM framework. However, by using SCAMPI[SM] as a reference framework and taking a simplified approach, it is possible to objectively and methodically analyze an organization's processes, to identify strengths and weaknesses, and to define improvement activities. Periodic appraisals then enable an organization to monitor progress. Practitioners may also wish to refer to the original method definition documents or to *SCAMPI Distilled* by Ahern et al (2005).

10.1 Prepare and Plan the Appraisal Project

Appraisal is a complex operation. Emphasis is placed on planning and preparation. The Preparation and Planning Phase includes five major steps as defined in Ahern et al (2005, pp. 56-71). Since the Framework will not be used for certified appraisals, the descriptions of each step have been summarized, simplified and adapted to this CRM Framework.

a) Analyze the Objectives of the Appraisal

First, the organization must determine the objectives and scope of the undertaking. To build a case, a gap or risk analysis identifying shortfalls and improvement pathways is appropriate. The scope can be constrained to a functional area or a specific level of capability (Ahern et al, 2005, pp. 56-62). Appraisal can also be used to monitor the progress of process improvement initiatives over time.

The firm should identify the desired outputs of the appraisal. Outputs should include a form of ratings for Process Areas (within scope) versus goals, with strengths and weaknesses identified. Practice-level characterizations are valuable, but a firm may also desire project-specific findings or ratings. Be cautious here. Project-specific findings undermine the confidentiality of the participants, thus jeopardizing the openness of interviews and skewing findings (Ahern et al, 2005, pp. 56-62).

b) Develop the Appraisal Plan

The plan should be developed in consultation with the senior sponsor(s) and approved before execution. It should include resources, cost, schedules, and overall logistics. The scope determines who will be participating and when. Any plan should consider constraints that are evident or foreseeable. Relevant constraints should include access to data, other programs competing for schedule at the same time, and the incentive of managers (Ahern et al, 2005, pp. 62-64).

Older appraisal methods relied on a labour-intensive process of "discovery" to identify evidence of process capability in practice. A better solution is a "verification" method where the functional areas are responsible for providing traces from the model's recommendations to evidence generated by the processes that they use.

Risks are another consideration. SCAMPI requires that the risks associated with the appraisal be identified and mitigated, and that the sponsor be kept informed. With lower maturity level organizations, there is a greater risk of time overruns, because the team must resort to more "discovery". Other risks include incorrect interpretations of the intended meanings of the model, application of the model in a new context, and risk to and within the organization if results are not those expected. The first line of mitigation is preparation with a good working knowledge of the status before conducting in-depth appraisal. Even negative findings of an appraisal should be carefully documented (Ahern et al, 2005, pp. 62-64).

c) Select and Prepare the Team

Select a team that includes appropriate levels of authority to access the data required, to ensure participation by staff, and to develop senior management buy-in. Prepare the team by mapping the model to the internal processes, to determine what is relevant and what is within the scope of the planned appraisal. Develop awareness of what artifacts are being generated and where they are located. Review the presence of and participant knowledge of objective evidence (Ahern et al, 2005, pp. 66-68).

d) Obtain and Analyze Initial Objective Evidence

The objective of this step is not to conduct the appraisal, but to determine what and where evidence is available. To gather the initial evidence, forms can be developed. The Practice Implementation Indicators in the CRM Process Capability Framework, and the CMMI PII description lists are valuable instruments. Ahern et al (2005, pp. 68-69) recommended questionnaires that elicit descriptive responses on how the practice is performed and that provide a context for the evidence sought. They suggest that the team could provide a short training class on the model at this stage and have someone available to answer questions.

After analysis of initial evidence, have the team document their estimations of consequences of what they observed and develop some recommendations. The team's expertise can be very valuable at this stage. It is particularly helpful when team members from outside of the organization can give fresh views to the organization (Ahern et al, 2005, pp. 68-69).

e) Prepare for Collection of Objective Evidence

With an informed perspective on the appraisal conditions, prepare for in-depth appraisal by identifying what will be collected, who will be interviewed, and who will review what information and in what manner. This should be updated as the appraisal progresses and the need is identified for additional artifacts or additional interviews for greater depth.

Finally, gather the team and conduct a readiness review. Review initial evidence for coverage and general effectiveness. Identify the confidence level that any missing evidence will be available on a timely basis. Consider if risks are mitigated and if the appraisal is likely to achieve its objectives. Now is the time to step back and modify plans, schedules or resources if serious problems exist. Update the sponsor on the risk status (Ahern et al, 2005, pp. 69-71).

10.2 Conduct the Appraisal

Now the team is prepared and has a better idea of the capability level of the organization and the work involved in analyzing the evidence. To ensure efficiency, the team should focus its investigation by deciding which things are obvious, and then concentrating on areas that need more attention. The Appraisal phase includes four major steps as defined in Ahern et al (2005, pp. 71-80). Since the Framework will not be used for certified appraisals, the descriptions that follow have been summarized, simplified and adapted to this CRM Framework.

a) Examine Objective Evidence

Determine if the evidence adequately answers the questions or proves good application of the practice. SCAMPI requires one direct artifact for each instance of a practice being performed. An additional form of evidence must also support the direct evidence, such as tools (e.g. forms), presentations, or demonstrations (e.g. technology).

When the evidence is reviewed in detail, sometimes the artifact proves inadequate. For instance, a simple signature on a memo can be evidence of "approval", but does it really show the intent of the signatory? The team must investigate further. Interviews are highly recommended. In fact, SCAMPI requires face-to-face affirmations that the practices claimed are actually occurring, to avoid a checklist mentality. A session with a tool user can be considerably more informative than screen shots and data dumps (Ahern et al, 2005, pp. 73-77).

b) Verify and Validate Objective Evidence

After the team has reached initial conclusions about the findings, the participants should be given an opportunity to validate. Individual mini-meetings with the major stakeholder managers are recommended. This is an important part of consensus building and it develops ownership in the stakeholders. Gather the facts, share viewpoints, identify and rank issues, check agreement on decisions, and make final decisions (Ahern et al, 2005, pp. 73-77).

c) Document Objective Evidence

All team members should take notes throughout the process. Although this can be time-consuming, it is far better than missing evidence that supports an important finding (Ahern et al, 2005, pp. 77-81).

d) Generate Appraisal Results

The team now completes its analysis and draws conclusions based on each instantiation of the Process Areas (PAs). Decide if the direct artifact is appropriate, if the indirect

artifacts or affirmations provide support, and if there are any significant weaknesses. Determine whether the goal has been achieved or requires improvement. Decide what Capability Level of Process Area is fully proven and what gaps exist between the current level and a higher level. Finally, document a report of the process, scope, approach, findings and recommendations (Ahern et al, 2005, pp. 77-81).

10.3 Presentation and Follow-up Activities

Once conclusions have been reached, validated and documented, it is time to present the findings and recommendations, to wrap up this instantiation of the appraisal process, and to plan the following steps identified by Ahern et al (2005, pp. 81-86). Since the Framework will not be used for certified appraisals, the descriptions of each step have been summarized, simplified and adapted to this CRM Framework.

a) Present the Findings

This presentation is intended for senior management stakeholders. Prepare the presentation at a summary level. Communicate past results, if applicable, and illustrate current status. Disclose problems. This may be a sensitive matter, but it is required for the validity and objectivity of the process, and it identifies opportunities for improvement (Ahern et al, 2005, pp. 82-84). Celebrate progress that has been achieved.

b) Next Actions

Some companies disband the appraisal team immediately after receiving the report, under the false assumption that no further effort is required. However, the process infrastructure needs maintenance as much as any other system. Otherwise, firms backslide, process discipline drops, and the benefits degrade or stop. To avoid this, the process improvement group must be clear on the long-term business case, the maintenance and support costs, and the benefits (Ahern et al, 2005, pp. 83-84).

c) Re-plan Data Collection

For future or continuous appraisal of process capability, update the data-gathering strategy. This can reduce or eliminate interviews in future appraisals (Ahern et al, 2005, p. 84).

d) Package and Archive

The team should document lessons learned, to improve future iterations of appraisal. Qualified feedback should also be recorded. Justifying artifacts should be archived. If only a few artifacts were required to satisfy a condition, then only those are required. Some team members may wish to keep certain notes. However, when that information identifies individuals, it runs a severe risk of undermining the anonymity, confidence and objectivity of participants. It is best to completely dispose of personal information. The objective of the appraisal is to identify improvement opportunities at the functional and organizational level, not the individual (Ahern et al, 2005, pp. 85-86).

11.0 APPLYING THE CRM PROCESS CAPABILITY FRAMEWORK

The level characterizations and technology recommendations of chapter 7, combined with the detailed practice requirements of chapter 8 and new customer value metrics in chapter 9, provide a framework for a firm to better execute and manage its customer relationship management competencies in daily operation. Chapter defined the recommended steps to conduct an objective appraisal of the firm's CRM process capabilities. We now have an understanding of CRM in terms of operational fundamentals that should be familiar to most managers. We have a framework that sets forth the specific disciplines that lead to improved quality of service, and a method for appraising that capability. How should CRM champions implement this knowledge in their own firms?

The general approach is to assess the current business context, create the "straw man" vision, build the proposal, and then prioritize, plan and act to transform the organization (Brown and Gulycz, 2002, pp. 17-22). Ahern et al (2005, p.121) outlined a continuous improvement cycle called IDEAL^{SM} for creating and deploying standardized processes that should be applied to building the case, and for selecting and implementing strategic improvements. The recommendations form a good foundation for applying the Framework:
1. Initiate
2. Diagnose
3. Establish
4. Act
5. Learn

11.1 Initiate

The CRM champion should make his or her interests known and have a general idea of the mind-set of senior management with respect to customer relationship management. Often this includes the team meeting discussions of various functional areas, strategy development sessions, reviews of emergency responses when things go wrong, and competitive analyses. The practitioner is expected to turn to the CRM Process Capability Framework when the firm requires a more comprehensive or formalized perspective to appraise and communicate the case. The practitioner should be developing a formal proposal for CRM improvement strategies. Early buy-in from a potential senior sponsor and/or the senior managers of major functional areas involved proves to be a tremendous asset throughout the process (Ahern et al, 2005, p.121).

11.2 Diagnose (Appraise)

Conduct a self-appraisal of CRM process capabilities, following the Appraisal guidelines in chapter 10. Tailor the level of detail and formality of approach to the needs of the target organization. Use the appraisal process to establish goals with stakeholders and to identify strengths and weaknesses. Next, conduct gap and risk analyses, and formulate potential strategies for improving CRM capabilities (Ahern et al, 2005, p.121).

11.3 Establish

Because any firm has limited resources, it needs to determine which investment path(s) to follow, and in what priority sequence. The answers will be case specific. The practitioner must therefore develop consensus among stakeholders, of general internal and external conditions that will impact on the organization's ability to achieve its business objectives. Proposed initiatives must be applicable to the unique orientation, market, business model and strategic priorities of the firm. Finally, the proposed CRM investments must be objectively rated in comparison to status quo and competing investment alternatives (Ahern et al, 2005, p.121).

Identify CRM Drivers based on the Nature of the Organization

Management's General Strategy

Porter identified three overarching, generic business strategies that influence the CRM drivers of a given firm: Cost Leader, Differentiation Leader, or Focus Leader (Kotler, 2002, p. 106).

A **Cost Leader** works hard to achieve the lowest production and distribution costs. It competes on cost to achieve large market share. A **Differentiation Leader** concentrates on achieving superior performance in an area that a large share of customers deem important. A firm differentiating on quality must use the best components and provide the best service to maintain a perception of quality. A **Focus Leader** specializes in mastering a narrow market segment. The firm gets to know their customer segment intimately and pursues either a Cost Leadership or Differentiation strategy within that segment. Generally, leading firms master a single strategy with moderate capability in the others. Firms that pursue all three at once generally do not maintain leadership (Kotler, 2002, p. 106).

Management's Market Orientation

To understand the firm's market orientation is to understand the primary objectives and perspective of managers who will be asked to sponsor a CRM initiative. The key CRM drivers will differ depending on the firm's market orientation.

The **Production Concept** is one of the oldest. It maintains that consumers will prefer products that are widely available and inexpensive. The main focus is product availability and low prices (Kotler, 2002, pp. 17-18). CRM drivers may lean toward more accurate sales forecasting to tightly manage production and lower inventory costs. Another driver may be the need to track the costs of support and sales interactions with individual customers.

The **Product Concept** focuses on product quality, performance, and innovation to gain favour with customers (Kotler, 2002, p. 18).. In such a firm, CRM drivers may lean toward more accurate identification of customer requirements to ensure product quality, to develop innovative new solutions, and to develop tighter management of service processes to ensure a high customer perception of quality

The **Selling Concept** holds that, if left alone, customers will not buy enough of the firm's products. The focus is on aggressive selling and promotion efforts (Kotler, 2002, pp. 18-19). The CRM drivers will certainly involve Sales Force Automation so that sales managers have the ability to monitor and control sales force activity, forecasts and performance versus quotas. Marketing drivers will involve transactional engines, such as communication blasts. Market research or analytics will focus on product buying patterns to identify customer buying gaps to chase. Customer service will likely be sales oriented and offer a good opportunity to gather more customer profile information for cross-selling and up-selling opportunities.

The **Marketing Concept** reverses the traditional "sell what you make" concepts to focus on "sense and respond" or "make what customers buy" capabilities (Kotler, 2002, pp. 19-25).. The CRM drivers will certainly lean toward marketing analytics that involve data gathered about customers at all touch-points, and supplemental market research data to identify customer needs and to fill them. This concept could benefit from the myriad CRM marketing concepts popularized today, such as target marketing. It may also involve tight integration of Research and Development with Marketing. Gathering input from sales, customer service and electronic touch-points will be a key driver

The **Customer Concept** moves from the general market and market segments to a capability of using customer interactions to finely identify their individual needs and then respond with tailored or customized product offerings and promotions (Kotler, 2002, p. 26). CRM concepts such as one-to-one marketing are the key drivers. In addition to the Marketing Concept drivers above, the firm also needs the capability to customize offerings, bringing about concepts such as Mass Customization (Peppers and Rogers, 1997). Levi Strauss exemplified this technique when they launched a website for customers to take their own individual body measurements and order custom-fitted blue jeans from the supplier.

The **Societal Marketing** concept may be the driver for not-for-profit, government, or any organization that differentiates through environmental or social responsibility (Kotler, 2002, pp. 26-27). An example of the latter could be coffee retailers that instituted Fair Trade purchasing policies in support of economically-depressed coffee producers. The CRM drivers here are to ensure that the organization has the ability to deliver its service or products efficiently and effectively, while preserving or enhancing societal well-being or environmental integrity. When such firms depend upon grants or budgets from other entities, CRM can play a strong role in enforcing accountability and in tracking activities to communicate value to grantors.

Identify CRM Drivers based on the Nature of the Service Encounter

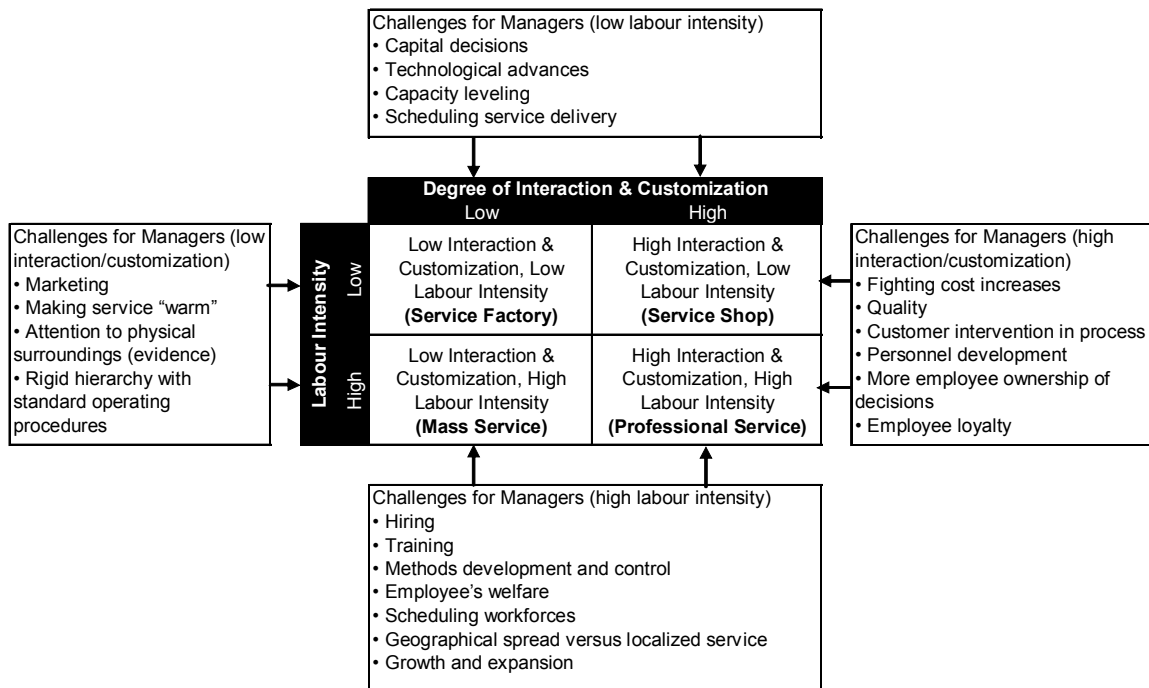**Nature of Customer Interaction with the Organization**
To identify priority CRM drivers, it is important to understand the nature of engagement with the customer for a given organization. Different business models have different degrees of engagement with the customer. Organizations also have differing degrees of

reliance upon staff (labour) in their deliverable. A consumer packaged-goods manufacturer will have little labour interaction with the bulk of their end customers, while a law firm will have a lot of direct, labour-intensive interaction.

Schmenner (Fitzsimmons and Fitzsimmons, ed., 2004, p. 20) created a service process matrix which classifies the organization along two dimensions: degree of interaction with the customer, and labour intensity. He went on to define the particular challenges raised by each dimension (Exhibit 11A). Managers will face a combination of these challenges, and therefore hold unique priorities, depending on where they lie in these dimensions.

Exhibit 11A – Management Challenges based on Service Dimensions

Challenges for Managers (low labour intensity)
• Capital decisions
• Technological advances
• Capacity leveling
• Scheduling service delivery

Degree of Interaction & Customization

		Low	High
Labour Intensity	Low	Low Interaction & Customization, Low Labour Intensity **(Service Factory)**	High Interaction & Customization, Low Labour Intensity **(Service Shop)**
	High	Low Interaction & Customization, High Labour Intensity **(Mass Service)**	High Interaction & Customization, High Labour Intensity **(Professional Service)**

Challenges for Managers (low interaction/customization)
• Marketing
• Making service "warm"
• Attention to physical surroundings (evidence)
• Rigid hierarchy with standard operating procedures

Challenges for Managers (high interaction/customization)
• Fighting cost increases
• Quality
• Customer intervention in process
• Personnel development
• More employee ownership of decisions
• Employee loyalty

Challenges for Managers (high labour intensity)
• Hiring
• Training
• Methods development and control
• Employee's welfare
• Scheduling workforces
• Geographical spread versus localized service
• Growth and expansion

Source: Schmenner in Fitzsimmons and Fitzsimmons, ed., 2004, p. 20

Low labour intensity generally implies that managers face capital decisions, often for automation and technological advances. The nature of labour in this context leans toward a focus on scheduling service delivery and leveling capacity. Accurately forecasting customer demand through more effective but still efficient customer interaction may be a priority CRM driver (Fitzsimmons and Fitzsimmons, 2004, p. 20).

Conversely, a business model with **high labour intensity** is focused on hiring, training, and retaining a capable workforce. Methods and controls are a higher priority because it is more difficult to control intensive engagements. Scheduling is a challenge so growth, expansion and geographical spread may occur in response to the need to place skilled human resources near the demand. Project management, collaboration and

communication tools, document management, metrics, control points, and validation are likely CRM drivers (Fitzsimmons and Fitzsimmons, 2004, p. 20).

Low degrees of interaction with customers and low variability of service deliverable lead a firm to focus on marketing to differentiate its business. Other priorities include the facilities or media of delivery themselves, and the challenge of making service "warm". Control comes from rigid hierarchy, with standard operating procedures. Rigid operational processes may already be implemented, at least at the tactical level. Organizational standards and procedures that can be adapted for new and evolving process requirements may be CRM drivers. Efficient communications, such as call centre solutions, affinity programs at point-of-sale and customer self-service technology, may be CRM drivers (Fitzsimmons and Fitzsimmons, 2004, p. 20).

High degrees of interaction impose a bevy of challenges, since individual employees have a high degree of ownership over customer-facing decisions and direct impact on perceived quality. Producing a deliverable when the customer is an active part of the equation poses unique challenges. Quality management is, understandably, a priority challenge. The focus leans toward developing and retaining capable employees and maintaining professionalism. Managers are constantly battling the potential for escalating costs.   Collaboration and communication tools, project management, documentation, metrics, control points, and validation are likely CRM drivers (Fitzsimmons and Fitzsimmons, 2004, p. 20).

Nature of Power in the Service Encounter

It is important to understand that management decisions involve a balancing act of competing interests. Fitzsimmons and Fitzsimmons (2004, p. 98) adapted a model for the service encounter that recognizes three major players for control in the encounter: the contact personnel, the customer, and the organization (Exhibit 11B).

Exhibit 11B – The Service Encounter Triad
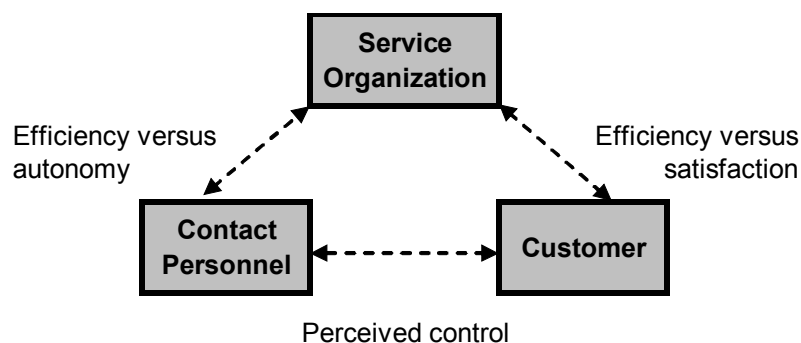
Source: Fitzsimmons and Fitzsimmons, 2004, p. 98

Between the customer and the individual contact person, there is somewhat of a struggle for control. Theoretically, customers, if given all of the power, would want the best of everything while paying nothing. Customers impose their interests to gain a better deal. The employee struggles to balance customer satisfaction and the risk of defection with the organization's demands for efficiency. Likewise, while the organization demands

efficiency, this interest runs contrary to the customer's interest for maximum value and satisfaction.

The balance of power differs by industry and business model. Customers dominate some service encounters such as self-service, personnel dominate in some encounters such as a legal team, and the organization dominates in others such as the setup and flow of a fast food restaurant. Fitzsimmons and Fitzsimmons (2004, p. 99) found that a balance of interests is necessary for an effective service encounter and economic viability.

The nature of power in the organization's service encounters influences the CRM drivers. Customer-dominated models may drive the need for more self-service CRM tools and a need to maximize risk or efficiency in supporting CRM tools. Firms with personnel-dominated encounters may lean toward collaboration tools and empowering people with information and the ability to respond to highly-customized customer needs. Encounters that are dominated by the organization, facilities or structure may employ more rigid process control in service and struggle to interact with customers in a warm way, while trying to capture customer data that helps them to respond to customer requirements (Fitzsimmons and Fitzsimmons, 2004, p. 99).

Engage Managers in Objective Strategy Selection

Because any firm has finite resources to invest, any initiative or strategy must compete for budget. The proposed CRM initiatives must be objectively compared, starting with developing consensus among stakeholders on the relative importance of market conditions and internal conditions. Competing strategies should also be compared for their ability to help the organization to achieve its business objectives by addressing threats and weaknesses or by capitalizing on opportunities and strengths.

David (2001) provided several strategic planning tools, such as External Factors Analyses (EFE) and Internal Factors Analyses (IFE), for quantitatively rating conditions affecting the ability of a firm to meet its strategic objectives. These tools are useful for engaging senior managers in recognizing the current state of affairs, and in framing the importance of customer relationships to the firm.

External Factors Evaluation (EFE) and Internal Factors Evaluation (IFE)

What external market, demographic, economic, innovation, and competitive opportunities and threats exist in the firm's market today? What strengths and weaknesses are internal to the organization or are within the control of the organization? The competitive landscape with respect to service quality is one external factor. Fitzsimmons and Fitzsimmons (2004, p. 42) posed several considerations. A firm raises entry barriers as it invests more in proprietary capability, quality, efficiency, and systems. The relative size and economies of scale of the firm versus competitors may also indicate whether the firm should focus on mastering a few differentiating CRM capabilities, or whether an entire firm-wide CRM capability will provide the most valuable competitive advantage. A firm with rapid sales growth may be satisfied with just sales force automation tools, while a firm facing fluctuation may be more interested in efficiency, forecasting, capacity

leveling or identifying new markets and new products to address fluctuation. Customer loyalty is another service competition factor in which CRM has an obvious role to play. CRM drivers may include better customer profiling, targeted products and promotions, and even purchasing behaviour profiling through affinity programs at point-of-sale.

Through round table discussions with key stakeholders, identify the top ten or so opportunities and threats, and the top ten strengths and weaknesses. Then list them in EFE and IFE matrices (Exhibits 11C and 11D). Through continued stakeholder round tables, assess a weight to each of these factors until all the factors add up to exactly 1.00. The matrix forces stakeholders to make balancing choices and achieve a degree of consensus on priorities and relative impacts. The Exhibits come from a real, not-for-profit industry association, which was evaluating alternative technology investments to improve their service value to members.

Exhibit 11C – Sample External Factors Evaluation (EFE) Matrix*

External Factors	Weight
Opportunities	
New Technology/Features in high demand	0.15
Low Cost Technologies	0.10
Cost Sharing with other Business Units	0.05
New Value-added Service required by market	0.05
Threats	
Reliability/Risk of current system	0.25
Obsolescence, depreciation of current system	0.15
External Support Costs escalating	0.15
Strong competitive alternatives systems	0.05
Lack of ownership rights	0.05
	1.00

* The key factors for this decision are bolded.   Concept source: David, 2001; Content source: author

Exhibit 11D – Sample Internal Factors Evaluation (IFE) Matrix*

Internal Factors	Weight
Strengths	
Focus on core service delivery, not technology	0.15
Increase Member value-add	0.10
Business Model moving toward education, away from technology	0.05
Viewed as a Leader in the market	0.05
Weaknesses	
Cost of Delivery are escalating	0.15
Capital Costs must be controlled	0.15
Dependency upon external experts	0.15
Limited Staffing	0.10
System Migration would be difficult	0.10
	1.00

* The key factors for this decision are bolded.   Concept source: David, 2001; Content source: author

Rating Alternative Investments - The Quantitative Strategic Planning Matrix (QSPM)

With this understanding of internal and external factors in hand, we can begin to formulate a quantitative model of the organization's unique conditions, in order to compare alternative CRM investments. David (2001) introduced a method called the Quantitative Strategic Planning Matrix (Exhibit 11E).

All factors are listed in a column with their weights in the next column. Each alternative investment initiative is listed in parallel columns, each with a cell for rating the degree to which that initiative addresses the specific factor, on a scale of 0 to 4. This is then multiplied by the weight of the factor to achieve a score for that strategy on that factor. All scores are summed for the strategy to produce an aggregate score across all factors. As alternative initiatives are mapped, the differences in scores are often quite clear.

What strategies should be compared? Note that Status Quo is always one of the options. Fortunately, the matrix can also compare how well status quo addresses the identified factors. Alternative initiatives must be an improvement over status quo to justify the risk of the investment. If you know in advance that the initiative will be competing for budget with other, non-CRM initiatives, these should be rated and compared as well.

The power of the QSPM is that it distills real world factors from purely subjective characterizations into quantitative priorities, from the stakeholders themselves. It develops a degree of ownership and consensus. The example in Exhibit 11E was adapted from a real QSPM for the same not-for-profit organization mentioned above. To quote perhaps the most negative stakeholder when presented with the QSPM results, "I don't particularly like the choice but while I would adjust some of the weightings, I can see it wouldn't change the relative score much. I guess the outsourcing option really is a better strategy than the buying option after all."

Do not make the mistake of conducting this exercise just once. Management should review, adjust, supplement and reprioritize conditions on a regular basis. As conditions change, so does the relative importance of any initiative. The QSPM is an excellent tool for monitoring conditions and adjusting investment priorities based on the new reality. The process becomes faster to execute as it is repeated.

A major benefit of the QSPM method is that it starts any strategic or investment decision aligned with business objectives and conditions from the outset, rather than trying to justify strategy alignment later.

Exhibit 11E – Sample Quantitative Strategic Planning Matrix*

	Weight	Status Quo		Buy		Outsource		Build	
		AS*	TAS*	AS*	TAS*	AS*	TAS*	AS*	TAS*
External Factors (from EFE)									
Opportunities									
New Technology/Features in high demand	0.15	2	0.30	2	0.30	4	0.60	4	0.60
Low Cost Technologies	0.10	1	0.10	1	0.10	3	0.30	3	0.30
Cost Sharing with other Business Units	0.05	2	0.10	2	0.10	1	0.05	3	0.15
New Value-added Service required by market	0.05	1	0.05	1	0.05	1	0.05	2	0.10
Threats									
Reliability/Risk of current system	0.25	1	0.25	1	0.25	3	0.75	3	0.75
Obsolescence, depreciation of current system	0.15	0	0.00	0	0.00	3	0.45	3	0.45
External Support Costs escalating	0.15	1	0.15	2	0.30	3	0.45	2	0.30
Strong competitive alternatives systems	0.05	1	0.05	1	0.05	1	0.05	2	0.10
Lack of ownership rights	0.05	1	0.05	2	0.10	0	0.00	4	0.20
	1.00								
Internal Factors (from IFE)									
Strengths									
Focus on core service delivery, not technology	0.15	2	0.30	0	0.00	4	0.60	3	0.45
Increase Member value-add	0.10	2	0.20	1	0.10	3	0.30	4	0.40
Business Model moving toward education, away from technology	0.05	2	0.10	1	0.05	4	0.20	3	0.15
Viewed as a Leader in the market	0.05	1	0.05	2	0.10	3	0.15	3	0.15
Weaknesses									
Cost of Delivery are escalating	0.15	2	0.30	2	0.30	1	0.15	2	0.30
Capital Costs must be controlled	0.15	1	0.15	1	0.15	4	0.60	2	0.30
Dependency upon external experts	0.15	1	0.15	2	0.30	1	0.15	3	0.45
Limited Staffing	0.10	3	0.30	1	0.10	4	0.40	0	0.00
System Migration would be difficult	0.10	1	0.10	1	0.10	1	0.10	1	0.10
	1.00		**2.70**		**2.45**		**5.35**		**5.25**

*AS= Attractiveness Score, TAS = Total Attractiveness Score

Concept source: David, 2001; Content source: author

* The key factors for this decision are bolded.

Jeff I. Pittaway, 2006-2007

11.4 Act

Take action to implement solutions. Pilot and test the solutions appropriately. Refine the solutions as warranted. Finally, implement the solutions "live" (Ahern et al, 2005, p.121).

11.5 Learn (and restart the Cycle)

Analyze and validate the results of the implementation. The Appraisal process should be conducted to determine if improvements are being practiced in daily operation. Also analyze and validate the CRM strategy creation and deployment process itself. Identify improvement and cycle to Initiate to propose new initiatives (Ahern et al, 2005, p.121).

11.6 Chapter Summary

To achieve CRM competency in daily operation and to sustain competitive advantage as a result requires a cycle of continuous improvement. The five levels and the defined Process Areas of the CRM Process Capability Framework lend themselves to specific or broad initiatives. The appraisal process is useful for identifying gaps and developing improvement strategies, but it should also be used on a periodic basis to monitor progress and prioritize new initiatives given a changing landscape.

12.0 ASSUMPTIONS AND LIMITATIONS

This study is concerned with proposing a generic approach that an organization may consult to determine its need for CRM and/or to build its own specific case for CRM investments. The definition of "CRM" used throughout assumes the broad definition of Strategic CRM, as stated in the introduction and chapter 4.

The CRM Process Capability Framework has been developed in its first, theoretical iteration. It has not been proven in practice. While CMMI has been used to develop other models, some critics question whether sufficient proof of benefits exists for CMMI. This issue is somewhat mitigated through the strategy development and selection exercises (chapter 11), that encourage the organization to pursue benefits it has identified in its unique environment. Please refer to Appendix A for a summary of benefits from CMMI case results.

The CRM Process Capability Framework is not necessarily intended for certification or reliable comparisons of one organization to another. This Framework does not currently qualify an organization for capability assessment by certified CMMI appraisers, nor would they necessarily recognize the translations of the CMMI model to CRM.

Some content may have been developed with assumptions about the target firm's business model, scale, and current process maturity levels. The "typical" firm used as a model while building this framework is a mid-market enterprise that sells services or products where service is important to customer perception, that employs enough staff and undertakes enough individual transactions in a year to warrant a systematic process, and that exists in a competitive market. This study does not specifically consider limited source (e.g. monopoly or patented innovations), government or not-for-profit business models. It does not specifically consider the differences between Business-to-Business (B2B) and Business-to-Consumer (B2C) models. The assumption in some cases was a B2B model. This study is not industry specific, although it identifies some of the variables that practitioners must consider in their own context.

Since the Framework has been built upon CMMI, which was designed for software engineering specifically, practitioners may find CRM disciplines that are not covered in the Process Areas of this model. The Framework is not specific in some important CRM disciplines such as affinity, one to one interaction, mass customization, or market research strategies for example. These specific skill sets need to be explored with expert materials on the specific subject matter.

Organizations utilizing this Framework are advised to seek value in the undertaking itself, as a means to more objectively assess their capabilities versus what is possible, to identify CRM drivers in their organization, and to prioritize CRM investments. Using the Framework to elicit discussion, to seek consensus, and to develop ownership in stakeholders has its own rewards. The specific application in organizations should emerge from an assessment of the conditions in which they find themselves. Thus, the outcome of applying this Framework should be unique from one organization to another.

13.0 CONCLUSIONS

This study demonstrated that traditional operations disciplines such as quality management can and should be applied to create competency in executing the firm's CRM strategy. A process-oriented approach to customer relationship management can help to coordinate the many functional areas that directly or indirectly meet or fail to meet customer expectations. Customer perceptions affect buying behaviour in both the short and long terms. The long term or lifetime value of the customer to the firm is a vital component of economic value. Indeed, this can be illustrated as a valuable asset, the value of which increases or decreases based on investments and activity in each period. In a very real sense, the capability of the firm to execute quality customer-oriented activities day to day creates or destroys economic value for shareholders. Measures of this value are now being used to value firms in mergers and acquisitions.

The process of creating this economic value involves a chain of various functional areas, supporting activities and supporting systems. There are many different stages in the customer lifecycle at which the firm influences customer buying behaviour that cannot operate effectively and efficiently in isolation. What differentiates one firm from another is how well and how efficiently it organizes across these functions. When a firm possesses resources and capabilities that rivals lack, it enjoys a competitive advantage. In fact, superior capability can produce sustainable competitive advantage because replicating a firm's distinctive capabilities is difficult. A firm's ability to manage linkages between elements of the value chain and coordinate activities across it is a source of superior capability.

This study demonstrated how an existing process-oriented quality management model can be applied to the CRM domain to help a firm build a solid foundation for CRM competency. The CRM Process Capability Framework defines characteristics of firms operating at each of five levels of capability maturity. It describes the sometimes confusing sets of CRM technology tools in the context of supporting integrated CRM capabilities. The Framework defines the specific practices and work products evident for each CRM capability level, which can be used to assess a firm's capabilities and to identify areas for improvement. The ability to manage CRM performance by metrics is interwoven throughout these disciplines, thus the Framework specifies some valuable metrics that elicit a customer-centric management culture. The Framework defines how practitioners can conduct an objective self-appraisal to build their initial case, and to measure progress over time. It also includes a continuous improvement cycle involving all constituents of the Framework.

By following the recommendations of the Framework, CRM champions should be able to communicate and develop CRM capability in terms that are familiar to any manager educated in operations, accounting or quality management. They should be able to objectively appraise capability today, define strategies for improvement, develop ownership in stakeholders, choose priorities for investments, implement them, and objectively measure progress over time.

Ultimately, when the organization improves process capability in Customer Relationship Management disciplines they raise the bar to competition by improving their ability to consistently meet commitments. It is a win-win situation for forward-thinking organizations, their shareholders and their customers alike.

14.0 RECOMMENDATIONS FOR THE FUTURE

The CRM Process Capability Framework is an early theoretical iteration. It can benefit from further research and development. It is expected to evolve as it is applied in various scenarios.

Further research should include investigation of "Practice Implementation Indicators" in organizations which excel at customer relationship management. Are the PIIDs presented herein evident in these organizations? Are other indicators present that are not covered in the model? Vertical iterations of the Framework should be developed for specific industries, channel models (B2B versus B2C), service versus product industries, and for cost leadership versus differentiator versus focus strategies. Research should also be conducted to identify some benchmarks against which an organization at a given level can rate their performance. This may entail further research into accounting metrics such as Customer Equity and Economic Value Add and how this can be calculated from published financial results.

Clinical research should be conducted with trial implementation of the CRM Process Capability Framework. Do customer service consistency, predictability, and other measures of quality improve as more of the Framework practices are institutionalized? Can the Framework be simplified for practical application in smaller organizations? If gaps emerge in the Framework's Process Areas, where certain CRM disciplines were not covered in CMMI, the Framework should be supplemented.

In building the CRM Process Capability Framework, we recognized the role of cultural change in achieving success. Thus, training, resource planning, remuneration and incentive structures must be aligned with the CRM strategy. The Framework should be supplemented with guidance for the Human Resource and Change Management implications of adopting a customer-centric culture.

CMMI has developed specific assessment templates for SCAMPI assessments. SEI has developed a certified training system to produce qualified experts that can conduct assessments with a degree of consistency from one firm to the next. The CRM Process Capability Framework differs from the root CMMI model, such that the ability to draw upon those resources for CRM is uncertain at this time. Further development of the CRM Process Capability Framework, in cooperation with CMMI, may help to restore those linkages. Ultimately, this could evolve into an official CRM CMM.

One drawback of CMMI is that there is no specific industry certification with which to reward an organization that has achieved a higher level. Before process quality models enjoy widespread adoption, history has shown that certification or awards must apply. Finding ways to relate CRM Process Capability to criteria for awards, such as the Malcolm Baldrige National Quality Award or J. D. Powers awards, could prove to be a strong catalyst. SEI is producing mappings from CMMI Process Areas into ISO 9001 certification requirements. Indeed, the CRM Process Capability Framework may reward an organization that is seeking ISO certification in their front office with a process where

the journey is as valuable as the final destination. This underscores its importance, ultimately, of becoming the CRM CMM.

Both CMMI and this Framework can benefit specifically from more clinical application and proof of benefits. Increased "clinical" application over time, of both models, should help establish a greater level of authority for the models. Ultimately, the CRM Process Capability Framework could be a catalyst for defining benchmarks of competency that are valuable to practitioners.

REFERENCES

SM CMM Integration, IDEAL, SCAMPI, and SEI are service marks of Carnegie Mellon University.
® Capability Maturity Model, Capability Maturity Modeling, CMM, and CMMI are registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.

Ahern, D., Armstrong, J., Clouse, A., Ferguson, J., Hayes, W., Nidiffer, K. (2005). CMMI® SCAMPI Distilled: Appraisals for Process Improvement. Addison-Wesley. Upper Saddle River, NJ.

Ahern, D., Clouse, A., Turner, R. (2004). CMMI® Distilled: A Practical Introduction to Integrated Process Improvement. (2nd Edition) Addison-Wesley. Upper Saddle River, NJ.

Anthes, G. (2004). "Quality Model Mania." Computerworld.com. March 08, 2004 <http://www.computerworld.com/developmenttopics/development/story/0,10801,90797,00.html>

Arsanjani, A., Holley, K. (2007). "Increase Flexibility with Service Integration Maturity." CRM Buyer. 10/20/05. <http://www.crmbuyer.com/story/46785.html>

Bach, J. (1994). The Immaturity of CMM. American Programmer. September 1994. <http://www.satisfice.com/articles/cmm.htm> retrieved 6/9/2004.

Bauer, H., Hammerschmidt, M. (2005). "Customer-based corporate valuation: Integrating the concepts of customer equity and shareholder value." Management Decision 43.3 (2005): 331-348. ABI/INFORM Global. ProQuest. 17 Dec. 2006 <http://www.proquest.com/>

Besanko, D., Dranove, D., Shanley, M., Schaefer, S. (2004). Economics of Strategy, (3rd Edition). John Wiley & Sons, Inc. Hoboken, NJ.

Blattberg, R., Getz , G., Thomas, J. (2001). Customer Equity: Building and Managing Relationships As Valuable Assets. Harvard Business School Press. Boston, MA.

Brown, S., Gulycz, M. (2002). Performance Driven CRM: How to make your Customer Relationship Management vision a reality. PwC Consulting. Etobicoke, ON.

Carnegie Mellon University (2001). Part One – The People Capability Maturity Model: Background, Concepts, Structure, and Usage. Carnegie Mellon Software Engineering Institute. Pittsburgh, PA.

Carnegie Mellon University (2001). Standard CMMI[SM] Appraisal Method for Process Improvement (SCAMPI[SM]), Version 1.1: Method Definition Document. Carnegie Mellon Software Engineering Institute. Pittsburgh, PA. <http://www.sei.cmu.edu/pub/documents/01.reports/pdf/01hb001.pdf>

Carnegie Mellon University (2006). Capability Maturity Model® Integration (CMMI®) Version 1.2 Overview, Carnegie Mellon Software Engineering Institute. Pittsburgh, PA.

Carnegie Mellon University (2007). Risk Management. Downloaded from the world wide web, April 5, 2007. <http://www.sei.cmu.edu/risk/main.html>

David, F. (2001). Strategic Management – Concepts and Cases (8th Edition). Prentice Hall. Upper Saddle River, NJ.

Fitzsimmons, J. Fitzsimmons, M., (2004). Service Management (4th Edition). McGraw-Hill/Irwin. New York, NY.

Gibson, D., Goldenson, D., Kost, K. (2006), Performance Results of CMM®-Based Process Improvement. Carnegie Mellon University. Pittsburgh, PA.

Goldenberg, B. (2003). CRM Automation. Pearson Education/Prentice Hall. Upper Saddle River, NJ.

Gupta, S., Lehmann, D. (2003). "Customers as assets." Journal of Interactive Marketing 17.1 (2003): 9-24. ABI/INFORM Global. ProQuest. 17 Dec. 2006 <http://www.proquest.com/>

Hogan, J., Lehmann, D., Merino, M., Srivastava, R., et al. (2002). "Linking customer assets to financial performance." Journal of Service Research : JSR 5.1 (2002): 26-38. ABI/INFORM Global. ProQuest. 17 Dec. 2006 <http://www.proquest.com/>

Kotler, P. (2002). Marketing Management. (11th Edition) Prentice Hall. Upper Saddle River, NJ.

Kumar, V., Ramani, G., Bohling, T. (2006). "Customer lifetime value approaches and best practice applications." Journal of Interactive Marketing 18.3 (2004): 60-72. ABI/INFORM Global. ProQuest. 17 Dec. 2006 <http://www.proquest.com/>

Mack, O., Mayo, M. C., Khare, A. (2005). "A strategic approach for successful CRM: A European perspective." Problems & Perspectives in Management. Issue 2, 2005; pp. 98-106.

MacMillan, I., MacGrath, R. G. (1997). "Discovering new points of differentiation." <u>Harvard Business Review</u>. July/August 1997. Boston, MA.

Naumann, E., & Shannon, P. (1992). "What is customer-driven marketing?" <u>Business Horizons</u>, 35(6), pp. 44 - 49.

Norton, D. (2003). "Introduction to Operations." In <u>Athabasca University Operations Management (OPMT-505) Study Guide</u>. (Eds.)

Paulzen, O., Perc, P. (2002). <u>A Maturity Model for Quality Improvement in Knowledge Management</u>. Frankfurt am Main, Germany. Johann Wolfgang Goethe-University, Institute of Information Systems.

Peppers, D., Rogers, M. (1997). <u>Enterprise One to One.</u> Currency/Doubleday/ Random House. New York, NY.

Peppers, D., Rogers, M. (2001). <u>One to One, B2B: Customer Development Strategies for the Business-to-Business world.</u> Currency/Doubleday/ Random House. New York, NY.

Peppers, D., Rogers, M. (2005). <u>Return on Customer: Creating Maximum Value from Your Scarcest Resource.</u> Currency/Doubleday/Random House. New York, NY.

Pfeifer, P., Farris, P. (2006). "The elasticity of customer value to retention: The duration of a customer relationship." <u>Journal of Interactive Marketing</u> 18.2 (2004): 20-31. <u>ABI/INFORM Global</u>. ProQuest. 12/17/2006 <http://www.proquest.com/>

Project Management Solutions, Inc. (1996). <u>What is the Project Management Maturity Model (PMMM)?</u> Downloaded from the world wide web, April 5, 2007. <http://www.pmsolutions.com/maturitymodel/whatismodel.htm>

Slack, N., Chambers, S., Johnston, R. (2001). <u>Operations Management</u>. (3rd Edition). Pearson Education Limited. Essex, England.

Turban, E., McLean, E., Wetherbe, J. (2002) <u>Information Technology for Management: Transforming Business in the Digital Economy (3rd Edition).</u> Von Hoffman Press, John Wiley and Sons, Inc.: USA

Wilkerson, T. (2005). "Reaching CRM's Destination: A Capability Maturity Model (Part 2)." <u>Destination CRM.com: Viewpoint</u>. Monday, August 01, 2005 <http://www.destinationcrm.com/articles/default.asp?ArticleID=5128>

Won, S. (2007). "Evolve or die: advice from the J.D. Power guy." <u>The Globe and Mail.</u> 03-13-2007. p. B9.

APPENDIX A – LITERATURE REVIEW, MODEL SELECTION

A1. Alternative Quality or Process Models Reviewed

CMMI is not the only process model being applied, especially in its original software engineering field. Gartner (Anthes, ed., 2004) positioned several along dimensions of specificity to IT versus abstraction (Exhibit A1).

Exhibit A1 – Gartner's Process Model Positioning
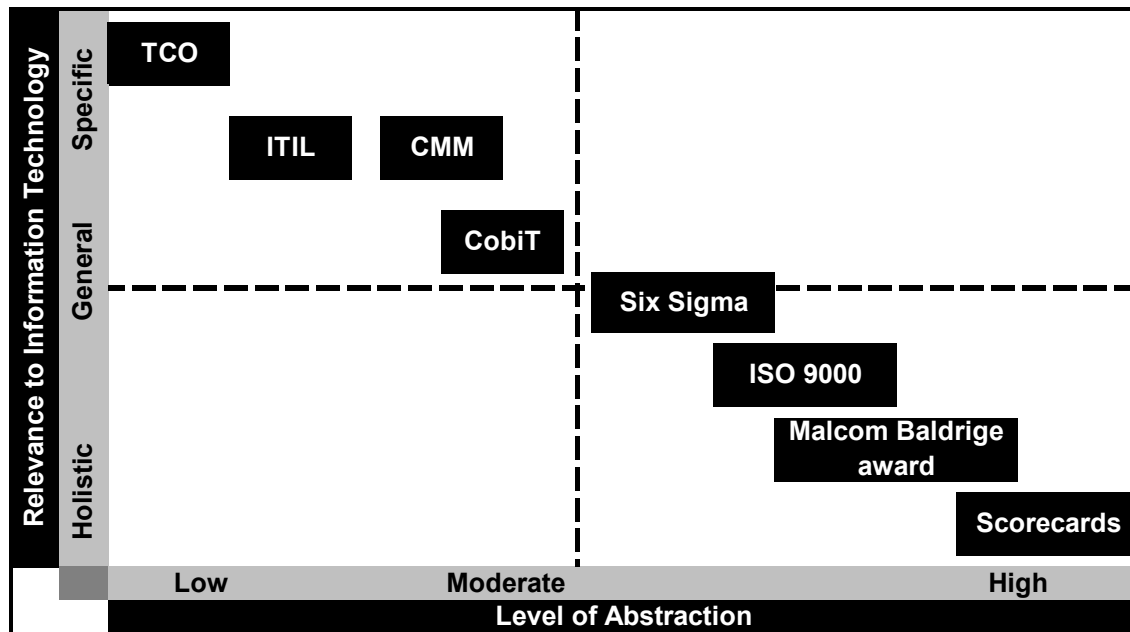
Source: Anthes, ed., 2004

The British government embarked on a similar project called ITIL, the Information Technology Infrastructure Library. ITIL has evolved into a more comprehensive suite for information technology (IT), and it has enjoyed wider adoption by staying focused on IT specifically. CMMI has also enjoyed a good degree of adoption. From 2002 to 2006, 54,000 people were trained in CMMI and 1500 Class A (formal) appraisals were conducted with 64 percent being non-U.S. organizations (Carnegie Mellon University, 2006). Because CMM has consciously evolved toward a more generic process model, it is the more natural foundation for customer relationship process applications.

The fundamental objective of the Six Sigma methodology is the implementation of a measurement-based strategy that focuses on process improvement and variation reduction, through the application to Six Sigma improvement projects. Six Sigma is more focused on a project team and CMMI is more focused on organizational processes. There is no single, governing body for Six Sigma (Ahern et al, 2005).

ISO 9000 is actually a family of standards (Ahern et al, 2005). Because ISO9001:2000 represents the process requirements, it is applicable to our Framework. The levels

provided by CMMI are more intuitive and more conducive to continuous improvement. However, Ahern et al (2005, pp. 28-29) noted that interest is developing in creating a single appraisal that could satisfy both. They provide a mapping of the major CMI areas traced to ISO 9001 in their book, *SCAMPI Distilled* (Ahern et al, 2005).

A criticism of many models is that they allow organizations to avoid a sharp focus on the bottom line until higher levels (Ahern et al, 2005). CMMI recognizes these issues to some extent by introducing Measurement and Analysis at Level 2, which makes it difficult to defer this important discipline.

Some work toward a generic process-centric Capability Maturity Model or process framework for CRM has already been undertaken. IBM has produced a comprehensive model called the Service Integration Maturity Model (SIMM) for organizations moving to a "Service Oriented Architecture (SOA)" (Arsanjani and Holley, 2007). Wilkerson (2005) published an article using the term "Customer Management Capability Maturity Model". The Wilkerson article lacks depth as a framework, particularly in assessment methodology. Both alternatives stem from proprietary interests and thus do not lend themselves very well to this sort of paper.

Some of the other quality models covered by Gartner were judged to be either too specific to IT or too abstract to provide a prescriptive framework that can be readily adapted to the customer relationship process.

A2. Critical Review of CMM and CMMI

The application of CMMI to CRM may not be immediately evident. CMM originally began in software engineering as a means for the U.S. defense department to assess or help develop the ability in their software suppliers to meet their promises. It has helped software engineering to evolve from a complex, chaotic environment to a well-oiled machine. Likewise, the myriad CRM services, the many role players, and the copious amounts of data involved in the front office across the customer lifecycle also represent a complex service delivery environment.

CMM has already been used as a foundation for disciplines beyond software engineering. The latest CMMI is more generic, reflecting its application in a broader spectrum of processes. It has been extended by various parties into Project Management (PMMM), Purchasing, Human Resource management (People CMM), risk management, knowledge management (Paulzen and Perc, 2002) and other applications.

A major criticism of CMMI is that SEI does not certify appraisals. Therefore, an external evaluator, such as a customer, cannot necessarily compare the CMMI appraisal results of one firm to another. The CMMI governing body, the Software Engineering Institute (SEI), has established the formal SCAMPI appraisal process for CMMI. This requires certified appraisers which are only accredited through SEI after a formal training process. While the lack of a strict, singular certification may have hampered adoption among firms seeking something akin to ISO 9000 certification, CMMI better lends itself to

reinterpretation and expansion by others into new disciplines such as CRM. As other discipline-specific CMM-based models have emerged, so have discipline-specific appraisal and certification processes.

Other criticisms exist for CMM. Paulzen and Perc (2002) believed the organization-wide approach to CMM is not as practical as prescriptions for specific functional areas. Bach (1994) criticized the lack of clear relationship between processes themselves and the CMM levels. These criticisms have largely been addressed as Key Process Areas in CMMI, the most recent iteration of CMM, in a deliberate attempt to allow CMMI practitioners to take smaller, continuous improvement steps in key areas with the greatest promise. Bach (1994) maintained that CMM lacked a theoretical basis and proven performance. He also pointed out that the CMM penchant for institutionalizing processes is not always a step forward. Instead, Bach asked "if institutionalization is useful, why not instead institutionalize a system for identifying and keeping key contributors in the organization, and leave processes up to them?" While Bach fails to provide a structured alternative, we accept that some organizations will continue to be successful despite a lack of institutionalized processes. In fact, CMMI Level 1 recognizes this, but also points out the reliance upon heroics and the consequent lack of stability.

A3. Benefits of CMM and CMMI – Case evidence

CMM has begun to publish case evidence supporting the CMM model, their assessment practices, and the results achieved by firms that have undertaken to evolve to the higher levels. CMMI is still a relatively young model. However, adoption is growing and evidence is emerging of the positive impact of adopting the CMMI approach to process assessment and improvement.

Organizations can and have achieved marked performance improvements, although more remains to be learned according to Gibson, Goldenson and Kost (2006). Their report tracked six performance categories: cost, schedule, productivity, product quality, customer satisfaction, and return on investment. They investigated numerous organizations of different natures. Exhibit A2 charts the results of their study.

Exhibit A2 - Performance Improvements over Time by Category

Performance Category	Median Improvement
Cost	0.34
Schedule	0.5
Productivity	0.61
Quality	0.48
Customer Satisfaction	0.14
Return on Investment	4.0 : 1

Source: Gibson, Goldenson and Kost, 2006

The specific R.O.I. numbers have limited meaning in the CRM context, because the respondent organizations were focused primarily on reducing cost and rework in software engineering. Customer satisfaction was clearly not as big a priority as schedule reduction

and productivity, for example. The opposite may be true of the CRM priorities of a growing sales organization. Still, the Gibson, Goldenson and Kost (2006) article illustrates that real, measurable and continuing benefit has inured to organizations that adopted the CMMI approach and went through the sometimes painful, sometimes expensive change. In fact, they state that "many of the organizations described in this report that have achieved improvements in product quality and customer satisfaction also have achieved higher productivity, cost performance, and schedule performance."

A4. Selecting CMMI

CMMI applies quality management disciplines to managing processes in a way that is applicable to developing and assessing process capability for customer relationship management practices.

Because of its somewhat generic nature, existing precedent of CMMI as a foundation for other disciplines, its flexible but objective approach to capability assessment, and the intuitive benefits of its levels, CMMI is the selected foundation for the Process Capability Framework for CRM. Given the preceding information, it forms a valid foundation on which to build this Framework.