

11.0 CRM Data Strategies: The Critical Role of Quality Customer Information

Customer information is the lifeblood of CRM. Therefore, the development and maintenance of consistent, high-quality customer data is critical to CRM success.

Unfortunately, many businesses do not devote proper focus to the importance of data quality and consistency. In fact, findings from a 2001 data management study conducted by PricewaterhouseCoopers reveal just how widespread data quality problems are in businesses worldwide. Based on a survey of 600 large and midsize businesses in the United States, Europe and Australia, the study's findings included the following:

- Seventy-five percent of the organizations surveyed admitted that defective data had a negative financial impact on their business. Fifty percent incurred extra costs to reconcile data.
- One-third had been forced to delay or scrap new systems — and a similar percentage had failed to bill or collect receivables — due to data problems.
- One survey respondent reported that data problems caused an \$8 million loss in a single fiscal year. Another reported that an incorrect unit of measure in its system led to the delivery of two containers that were bigger than the customer recipient's entire warehouse.

Many executives find the subject of data management to be boring or unglamorous, and pay only lip service to the need for the enterprise to focus on it — until they realize how much is really at stake. When a critical project cannot go live due to data quality problems — or when analysis reveals just how much it will cost to overcome institutionalized data quality and consistency problems — the negative impact of neglecting data management tasks becomes clear, and senior executives start to take notice.

More than money is at stake — the existence of poor data quality means analysis and key performance indicators used to guide the enterprise's strategy and inform its decisions are potentially flawed. Moreover, as businesses evolve toward greater integration of their systems and computer-based automation of decision making, the risks posed by poor data will only increase in the future.

When it comes to customer information, poor data quality can lead to problems that are no less critical. Everyone has his or her favorite stories of bad customer data — whether it's the database record listing a woman with 97 children or the one indicating that a man had been pregnant three times. But customer data quality is no joke — high-quality data is essential if enterprises are to successfully deploy and maintain increasingly integrated operational and analytical CRM systems, and maintain a meaningful set of customer metrics. Therefore, customer data consistency and quality are critical components to CRM success.

The analysis in this chapter provides guidance on how enterprises can enhance the quality and consistency of their customer data, and how data can be analyzed to reveal key insights that can be applied to increase the profitability of customer interactions. The analysis is framed by the following Key Issues:

- How can enterprises create and maintain a base of consistent, high-quality customer information?
- How can consistent, integrated customer interactions be enabled across multiple channels?
- How will enterprises evolve their analytical systems to reveal key customer insights?
- How can customer insights be profitably applied to inbound and outbound customer interactions?

11.1 Achieving the Goal of High-Quality Customer Data

Key Issue: How can enterprises create and maintain a base of consistent, high-quality customer information?

Strategic Planning Assumptions:

- *Enterprises will be unable to significantly reduce the heterogeneity of their application portfolios through 2005, thereby continuing to suffer the burden of distributed, redundant and inconsistent customer data (0.9 probability).*
- *Through 2006, CRM-wide integrated databases will remain unachievable. Successful implementations will be based on federated data models with layers of ownership and flexibility (0.8 probability).*

Achieving the level of integrated, consistent customer data necessary to support CRM initiatives does not come easily. Most large enterprises have an average of five to 10 operational sources containing customer data (see Figure 11-1).

Given that a single, integrated view of the customer is the cornerstone of CRM, a common pitfall is to attempt to achieve this view through a single, integrated database. For all but the simplest enterprises, however, such a universal database remains elusive — held out of reach by the intricacies of multiple lines of business, geographic diversity and a legacy application mix. Therefore, most enterprise CRM implementations will be forced to use customer information sourced from multiple data stores.

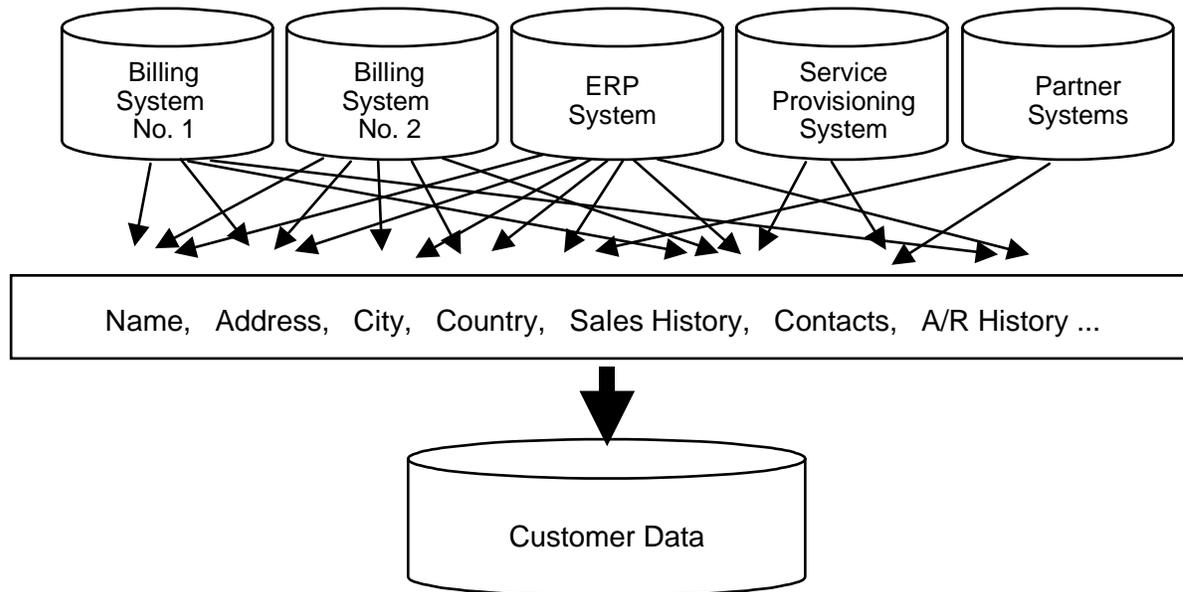
In this environment, identifying the most-appropriate operational sources from which customer data elements can be acquired involves significant analysis. Questions to be resolved include:

- Where does the data reside?
- What is its format?
- Where is there duplication?
- Does the overlapping data have incremental value?
- Which data sources are the most reliable?

Different semantics add to the complexity. For example, what is meant by terms such as “customer” or “account” in each data source, and are these meanings consistent from one source to the next? Businesspeople must understand and be able to reconcile semantic differences in their use of customer data. This is usually an arduous task — one that dwarfs the technical challenges of identifying where customer data is held or how to extract it.

Even when businesspeople agree on the semantics, enterprises typically find that these semantics are inconsistently implemented across their multiple, “stovepiped” operational systems. Accessing these heterogeneous databases requires special skills and technology to deal with the syntaxes of various database management systems. This is not easy if some of the operational sources are 15 to 30 years old, and the enterprise’s relevant skills are limited or defunct.

The reality of multiple stores of customer data poses another challenge, concerning the data models and

Figure 11-1: The Quality and Consistency Challenge in a Heterogeneous Data World

Source: Gartner

A/R accounts receivable
ERP enterprise resource planning

architecture that will be used. Given that customer information will usually reside in multiple major systems (such as core banking, telecom billing or airline reservation systems), this poses a choice between relinquishing control of the operational data architecture and data model to the CRM application vendor, or retaining in-house control of the data model and architecture.

Option 1 — letting the CRM suite vendor take over or “front end” the CRM data architecture — is the more common choice. Most enterprises elect to go with the data model provided as a fundamental part of the CRM vendor’s suite. This poses the challenges of:

- Introducing a new operational database with its own data model.
- Populating the new system with data.
- Integrating it with other significant systems and, where appropriate, enabling bidirectional, real-time data transfers between them.

Another challenge posed by this option is that the vendor-supplied system may duplicate some of the functionality and data elements contained in established, enterprise systems. This leads to hard decisions: Which functionality should be pulled out of established systems, or purchased from the vendor? If need be, can the enterprise live with duplicate functionality?

Option 2 — retaining enterprise control of the CRM data architecture — typically entails mapping the new CRM applications into established databases and interacting dynamically with them. This approach brings its own challenges, and is suitable only for large enterprises with the necessary skills and resources. A variation on this approach is to introduce a new operational data store (ODS), and to interface this ODS with the new CRM applications on one side and with established enterprise databases on the other.

Action Item: Determine the data required to support customer-facing business processes, and allocate the appropriate resources to resolve the semantic discrepancies caused by a fragmented data environment.

11.1.1 Data Ownership and Architecture Development

Tactical Guideline: *Maintaining customer data over time increases its value through completeness of information, history of changes, accuracy and integrity. Enterprises that implement front-office technology, policies and procedures for customer data maintenance by field personnel will see a 15 percent to 25 percent annual improvement in data quality.*

Enterprises must adapt the mind-set that a complete and high-quality view of the customer (from a data perspective) is a critical foundation for CRM success. This implies treating customer data as a valuable asset and allocating the time and resources required to maintain it at a high level of quality. Two steps are critical in this regard:

- Appointing data quality “stewards”
- Adopting an ongoing data quality program

The importance of assigning responsibility to data stewards is driven by the decentralization of decision making and increased use of packaged applications, both of which have been major factors driving the distribution of customer data across multiple applications. This distribution makes it extremely difficult for enterprises to maintain data consistency and quality. Although identifying a single owner for each data subject area is a popular idea, this approach often fails to work because many different business functions, people and applications are involved. Rarely is it possible to identify and maintain a single business function, person or application as the “master” for all subject area data.

Rather than struggling with attempts to assign ownership of complete data subject areas, we recommend that enterprises identify data stewards. A steward is responsible for the quality and consistency of a portion of a data subject area within the context of a single business function or process. Stewardship should be placed as close as possible to the initial point of data capture. For example, in a business that uses a field-based direct sales channel, the sales force would be the logical location for stewardship of customer contact data such as names, addresses and phone numbers.

In addition to stewardship, the development of an effective customer data architecture is critical to CRM success. Although the steps involved in developing such an architecture entail significant time and effort, they cannot be minimized — failure to stress the importance of the underlying data architecture will lead to limited success and major rework.

Avoiding this fate requires the adoption of an effective, ongoing data quality and management program. Gartner recommends that such a program incorporate the following four steps:

- Perform an inventory of all customer data (including location, syntax and semantics).
- Define the subset of customer data that will enable a meaningful, holistic customer view.
- Define a strategy and architecture for delivering this customer view, leveraging the appropriate tools and technologies.
- Devote adequate financial and human resources to customer data quality — both for the initial quality improvement project and for quality maintenance on an ongoing basis.

Action Items:

- Accept the reality of distributed customer data. Identify stewards to be responsible for the quality and consistency of key customer data.
- Create and maintain an ongoing data quality and management program, and sponsor it at the executive level.

11.2 Multichannel Data Consistency and Control

Key Issue: How can consistent, integrated customer interactions be enabled across multiple channels?

Tactical Guideline: Enterprises must start planning now for the evolution to a more-integrated CRM architecture, and for the integration of CRM applications with other enterprise applications.

Customers demand easy and convenient access via the channels of their choosing. Creating multiple touchpoints to serve the customer is central to meeting this demand. Unfortunately, the creation of multiple touchpoints also increases the potential for inconsistent interactions. Enterprises that request the same customer information several times, or that cannot reconcile the fact that the same customer has visited different touchpoints, will create dissatisfaction.

As discussed earlier, the creation of a single, universal customer database is unlikely to be feasible for most large enterprises due to the diversity of their application

portfolios and associated databases. However, an integrated, cross-functional, multichannel customer view is achievable, and is one of the major advantages offered by CRM application suites. To achieve this view, these suites often must be pragmatically integrated — using middleware and other application integration technologies — with multiple, additional application systems, each managing a portion of the overall “federated customer database.” Often, CRM applications must be integrated not only with major applications within the enterprise, such as enterprise resource planning and supply chain management suites, but with partner systems beyond the enterprise as well.

Most enterprise planners must accommodate the reality of a legacy system and application portfolio, in which integration has occurred on a point-to-point basis. Everyone is familiar with the problem of “spaghetti code” within an application program. However, a more macrocosmic problem lies in the “integration spaghetti” that links most programs and databases across and beyond enterprises. Such connections between application systems are difficult and costly to maintain. In addition, information trickles slowly through the enterprise, since more than 80 percent of integration today is done using batch file transfer. In some cases, the data is re-keyed from system to system.

An organized approach reduces the development effort needed to document and code interfaces between systems, reduces redundancy in integration technologies, and shortens the time it takes to add or change applications and their connections with other systems. A good analogy can be found in city planning, which concentrates on shared infrastructures such as roads, pipes and power lines. Where there is no application integration “city plan,” enterprises duplicate efforts and achieve suboptimal integration results.

Action Items:

- Strive to create an integrated, multichannel customer view of the enterprise, but be pragmatic about how to achieve the right perception at each touchpoint.
- Recognize and redress “integration spaghetti” in the enterprise to improve system robustness, reduce maintenance costs and enable the enterprise to respond with agility to changing business requirements.

11.3 Data Analysis and Customer Insight

Key Issue: How will enterprises evolve their analytical systems to reveal key customer insights?

Strategic Planning Assumption: *By 2004, only 20 percent of enterprises will use more than 50 percent of the customer data they collect to gain a competitive advantage (0.7 probability).*

Customer insight and understanding is created by analyzing customer and market data. The first steps are to determine:

- What customer-specific insight (for example, behavioral or value information) is needed to plan and optimize customer relationships?
- What customer strategic metrics (such as retention or profitability rates) are needed to measure success in meeting CRM strategy objectives?

The definition of the “customer” — and, hence, the insight and metrics required — will differ greatly between business-to-business (B2B) and business-to-consumer (B2C) transactions. In B2B, “customer” could apply to an enterprise and its employees. In B2C, the “customer” is usually an individual, but could also be a household.

The next step is to take an inventory of available data sources, determining where the necessary underlying data can be collected internally or where it can be obtained from external sources. By working backward from the business goal, it is possible to concentrate on the source of the right data, as opposed to collecting and analyzing irrelevant data simply because it is readily available. It will probably be necessary to impute certain data.

To create the analytical customer view, data must be extracted from disparate sources, transformed into a consistent and usable format and integrated with other data ready for loading into the target analytical data structures. Extraction, transformation and loading (ETL) tools can be used for these tasks. They are data-set-oriented, tend to be batch-based for bulk data transfer and have strong metadata support for transformations.

Beyond the collection of internal operational data, external data is also likely to be available to complete the gaps in

coverage and add to the overall customer view. This is particularly true in a B2B environment.

In assessing available customer data for analytical purposes, the sheer volume of this data is likely to pose a challenge. The growing integration of enterprise systems and the growth of automated channels (such as the Web) are increasing the amount of customer data available to enterprises faster than their capability to effectively use it (see Figure 11-2).

Unfortunately, most CRM vendors treat this as a technology problem. Their solution is to share customer data throughout the enterprise, which often results in information overload at the point of interaction. What enterprises need is the capability to create and share customer *understanding*. An estimate of customer profitability, loyalty or product preferences is far more valuable than a list of product purchases and customer service requests.

Easy-to-use tools to deeply analyze data are still relatively rare, and most enterprises have not redesigned their internal processes to take advantage of the potential that this data offers. This creates a serious gap between the

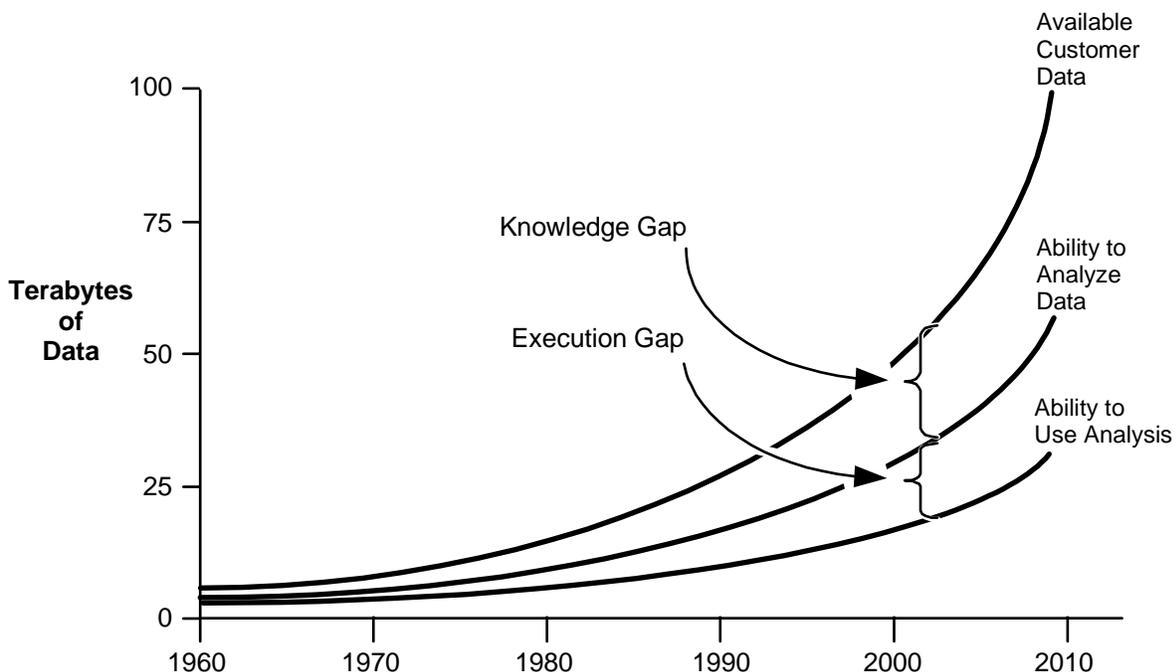
amount of data an enterprise has on its customers and the productive use to which this data is applied. Although this gap is often incorrectly viewed as an IT problem, it is really a business issue, because the enterprise's competitive advantage often relies on understanding a specific set of customers better than the competition does. The comparative size of the knowledge gap is what determines which enterprise has the superior customer understanding.

Action Item: Ensure that data efforts are driven by the enterprise's business needs for customer insight, not by the availability of information. Begin with the desired customer insight and work backward to understand what data must be collected to enable useful analysis to be performed.

11.3.1 Customer Data Capture and Categorization

Strategic Planning Assumption: Because 75 percent of the customer information held by most enterprises is inaccurate, out-of-date or ineffective for marketing purposes, 70 percent of enterprises will spend two to

Figure 11-2: The Data Volume Challenge



Source: Gartner

three times too much on hardware and software aspects of marketing solutions, and miss the need for key expenditures on data capture, cleansing and reconciliation (0.8 probability).

Enterprises must have three types of data to effectively manage their customer relationships: descriptive, behavioral and contextual (see Figure 11-3). The interactions among these information types must be understood to provide a coherent picture of the customer relationship.

- *Descriptive data* focuses on the customer, which could be an individual, a household, a business or some combination of the three. Demographic, lifestyle and psychographic data fit into this category. Much of this data comes from the enterprise's operational systems or from external data providers. It is readily available and, therefore, yields little competitive advantage.
- *Behavioral data* includes details on the transactions and interactions that comprise the relationship between the enterprise and its customers. Acquiring relationship data has proven to be the biggest challenge for many enterprises, because they must

strike a balance between collecting too much and too little. This data personalizes the customer/enterprise relationship.

- *Contextual data* is the least common type of information for an enterprise to have; however, an enterprise is unlikely to maintain strong customer relationships without an understanding of their context. Because contextual data is both diverse and unstructured, it is difficult to integrate with operational customer relationship systems.

Action Item: Within the enterprise's CRM solutions, include strategies for the capture and maintenance of all three types of customer data.

11.3.2 The Cost Impact of Data Quality

The use of data quality solutions such as customer data integration (CDI) can yield a significant return on investment (ROI). Many enterprises have done little research on calculating the ROI of implementing CDI solutions because so many items that make up such

Figure 11-3: Three Types of Customer Information

	Descriptive	Behavioral	Contextual
Purpose	Understand customer	Understand customer's behavior	Understand behavioral drivers
Examples	Contact, size, socioeconomic, demographics	Purchases, usage, communication, lifestyle	Satisfaction, events, competitor actions, attitudes
Sources	Operational systems, external data sources	Internal systems, loyalty schemes, external data sources	News feeds, employees, market research
Strengths	Readily available	Personalizes to company	Relevant to customer
Weaknesses	Low differentiation, data privacy	Data overload, system integration complexity	Difficult to gather and structure into system
Key to Success	Accuracy	Completeness	Creativity

Source: Gartner

calculations are “soft” metrics. These include the financial benefits of improved customer retention, customer acquisition and promotional efforts, and intangible cost savings enabled by increasing the efficiency of databases and processes. These elements contribute to the financial return on CDI investments, but are difficult to calculate and assign hard numbers to.

Listed below are some of the areas in which hard benefits (in terms of cost savings) and soft benefits (in terms of revenue enhancement) can be obtained from CDI. These areas are among those that should be examined for potential inclusion in a cost/benefit analysis demonstrating the financial benefits gained from CDI investments.

Hard benefits that can be gained from CDI include savings in the following cost areas:

- Data collection and integration
- Data quality management personnel
- Database and data warehouse processing
- Call handling on inbound inquiries
- Prospect solicitation
- List verification and net name processing
- Prospect derogation suppression
- Customer direct-mail expenses (such as “de-duping” and returned-mail costs)

Soft benefits that can be gained through CDI include revenue enhancement from:

- Better cross-selling and up-selling (facilitated by improved modeling and better customer targeting)
- Improved customer retention (achieved by reducing customer attrition and churn rates, targeting at-risk customers and taking preventive actions to avoid defections)
- Improved customer acquisition (including financial benefits accrued from the detection of additional prospects, higher conversion rates, improved application rejection and processing efficiency, and reuse of saved direct-marketing expenditures)

Action Item: Construct a cost model for calculating the true cost savings and revenue enhancement potential associated with the use of CDI.

11.3.3 Data Quality and Analytics Technology

Strategic Planning Assumption: *Through 2005, the capability to offer market analysis will be the single largest point of differentiation among CRM analytics vendors (0.7 probability).*

Two technology markets are key to the process of achieving high-quality customer information and insight:

- Data quality tools
- CRM analytics technology

The market for data quality tools continues to experience slow but steady growth. Partnerships between data quality vendors and vendors in other markets (such as ETL and application integration), and the advent of data quality service providers, are starting to raise the general awareness of data quality issues.

Selected CDI vendors and their products include:

- Acxiom's AbiliTec
- Harte-Hanks' Trillium
- Experian's Truvue
- Ascential Software's Integrity
- Group 1 Software's Code-1
- Firstlogic's Information Quality Suite
- SAS Institute's DataFlux
- Innovative Systems' i/Lytics

The core technology elements of a complete CDI product include four components: hygiene, linking, grouping and customer recognition.

- The *hygiene* component improves data quality through address standardization and correction. Clean, accurate address data facilitates more-accurate integration and is a critical component of effective customer communication.
- The *linking* component matches customer records as business needs dictate, including at the point of customer contact. Linking is the most prominent component of CDI. Its benefits include reduced duplication of undesired customer records, and the

identification of similar customer records within a database, across databases or across the enterprise.

- The *grouping* component can be used to define different views of a customer based on specific business rules, and to vary these views based on business application needs. Such views may be defined at individual, household, address or account levels. Grouping usually allows resident customer data, such as an account number, phone number or, as law permits, a social security number, to be used in conjunction with CDI linking routines to define unique business or situational views.
- The *customer recognition* component enables accurate recognition of customers based on identifying information, and the synchronization of internal customer keys and pointers on a continuous basis. Customer recognition includes data models, real-time recognition components, high-volume batch-processing components and associated interfaces.

Like CDI, the importance of analytics technology has grown steadily in importance in CRM initiatives, as enterprises seek improvements in effectiveness to complement the efficiency gains they hope to achieve from operational systems. There are several approaches to generating customer insight. The three most-common are:

- Building a solution with business intelligence and data-mining tools
- Using embedded analytical capabilities in point CRM applications
- Using an application as the basis of a complete analytic solution across CRM

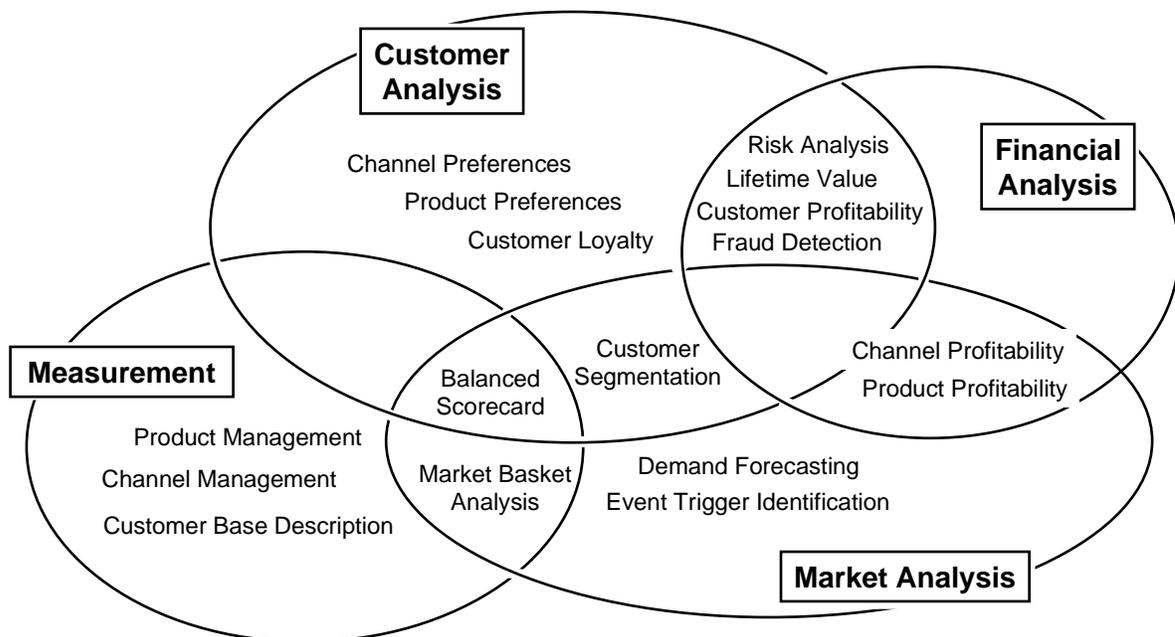
The third approach allows the greatest leverage for the creation, deployment and use of CRM-wide analysis, but it is the least mature of the three, with few vendors able to provide the required mix of CRM vision and analytic depth.

CRM analytics include many types of analysis, each of which supports the decisions of different user constituencies within the enterprise (see Figure 11-4). Different enterprises will have varying patterns of analytic requirements, based on the different business decisions that each enterprise makes.

For more information on customer analytics, see Chapter 12.0.

Action Item: Prioritize the analytic needs of your enterprise before beginning to evaluate the suitability of specific vendors to support the analytic processes required.

Figure 11-4: Categories of CRM Analytics



Source: Gartner

11.4 Applying Insights to Interactions

Key Issue: How can customer insights be profitably applied to inbound and outbound customer interactions?

Strategic Planning Assumption: Through 2005, despite continual improvements in customer segmentation and analysis, enterprises will experience declining success in their outbound marketing campaigns (0.6 probability).

Enterprises following customer-centric business strategies must ensure a smooth flow of customer information throughout the enterprise. This requires sharing not only customer data (such as transaction histories, customer complaints, demographics or corporate information) but also customer information (such as insights into the customer, current and potential profitability, loyalty and key decision drivers).

This sharing of customer information must occur in the context of a coherent organizational strategy, addressing issues such as:

- Which channels should the customer be using?
- What products should be sold to the customer?
- Does the enterprise need to increase the customer's satisfaction?

Only when an enterprise is capable of sharing all these elements of the customer relationship is it in a position to manage this relationship.

To achieve customer relationship optimization (CRO), enterprises must apply customer insight to planning and executing customer interactions. Enterprises interact with customers in three ways:

- *Campaign interactions*, traditionally enabled through proactive, outbound marketing campaigns.
- *Event-driven interactions*, in which customer events provide a signal that the customer is likely to be receptive to a particular offer.

- *Real-time interactions*, which leverage inbound contacts by the customer, but aim to make the contacts more effective by wrapping a targeted message around the tactical response provided to the customer.

The key to the successful implementation of a CRM business strategy is identifying which areas of the CRO value chain represent a competitive advantage for the enterprise, and where the enterprise is falling short. Once these areas have been identified, the enterprise is in a position to understand which projects are the most urgent, and can balance the conflicting imperatives that these projects present.

For more information on customer interactions and the CRO value chain, see Chapter 10.0.

Action Item: Identify and then rectify the weak links in your enterprise's CRO value chain. Ensure that your enterprise is leveraging all interactions with customers to optimize their value to the company.

11.5 Recommendations

- Take data quality and data management issues seriously. High-quality customer data is essential for enterprises to successfully deploy and maintain increasingly integrated operational and analytical CRM systems, and to maintain a meaningful set of CRM metrics. Failings in these areas will cost the enterprise money and reduce its competitiveness.
- Establish a business plan for sourcing, maintaining and leveraging customer information assets and establish ownership of the issue. Institute data administration policies and processes close to the point of data capture, and cleanse data using data quality tools and service providers. Create and maintain an ongoing data quality and management program, sponsored at an executive level.
- Accept the reality of distributed customer data. Determine the data required to support customer-facing business processes, and allocate resources to resolve the semantic discrepancies caused by a fragmented environment.

- Strive to create a consistent, integrated experience for customer interactions across multiple channels, and plan for the evolution to a more-integrated enterprise application architecture.
- Calculate the potential cost savings and revenue enhancements associated with improving the quality of customer data, and use this to build an ROI case for CDI investments. Consider analytical investments as well — prioritize the enterprise's data analytics requirements in advance of evaluating vendor capabilities to support these needs.
- To optimize customer relationships, apply customer insight to the planning and execution of customer interactions. Ensure that your enterprise is leveraging all interactions to optimize customer value, but take care to comply with privacy regulations and avoid offending customers' perception of privacy.

