ISSUES AND CHALLENGES IN THE NEW GENERATION CUSTOMER RELATIONSHIP MANAGEMENT (CRM): COPING WITH UNRELIABLE DATA

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Abstract

In today's competitive business climate, providing high quality of customer service is more crucial and challenging than ever. The number of customer inquiries is increasing year over year and as a result modern businesses are hard-pressed to meet the demand for high quality service while simultaneously containing costs. Customers expect an access to service on a 24 hour by 7 day a week basis with a consistent quality across multiple channels like voice, email and self-service to get a personalized experience. Modern Enterprises have invested billions of dollars in implementing traditional Customer Relationship Management (CRM) systems to serve customers better. Over the past decade, they also added multiple touch points of Customer Relationship Management (CRM) systems such as call centers, websites, email systems and interactive kiosks to serve customers across various sales, service and support processes. These technological enhancements created an explosion of customer data, application databases and data warehouses. Yet, the promised comprehensive 360° view of every customer remains elusive for most enterprises and calls for implementing the new generation customer relationship management (CRM) techniques. The present research articles focuses on the new generation Customer Relationship Management (CRM) issues and challenges lying ahead in the global business scenario.

Keywords: Customer Relationship Management (CRM), Business Intelligence (BI), Computer Telephony Integration (CTI), Return on Investment (ROI), Business Intelligence and Data Warehousing (BI/DW) and Extract-Transform- Load (ETL).

New generation customer relationship management (CRM) is emerging as one of the significant technology investments made by companies that are aiming to increase sales productivity and superior customer service (Meagher, 2002). Many enterprises in the present global competitive scenario realize the imperative to build a customer data foundation of high reliability and accuracy (Rigby&Schefter, 2002). Companies typically try several traditional approaches to address the data reliability problems such as standardizing on one application suite, creating customer master data repositories and data cleansing tools. There is an increasing body of research indicating that, companies find it difficult to provide an accurate and reliable customer data foundation by using the traditional customer relationship management (CRM) approaches and therefore switch over to the new generation of customer relationship management (CRM) tools (Robinson (2000), Sterne (2000) and Trepper,2000). This new generation customer relationship management (CRM) technology provides easy-to-use and highly customizable tools for managing sales, marketing campaigns, time management, teamwork, tracking orders and maintenance contracts. Research reveals that the probable global investments in customer relationship management (CRM) market will cross 500 billion US$ by 2010 (De et al 2001).Table I indicates the estimated investments in billions of US$ and the growth rate in customer relationship management (CRM) investments from the forecasts made by different research groups. Table II displays the list of the major customer relationship management (CRM) vendors of different usage categories in 2003.

Global Companies and New Generation Customer Relationship Management (CRM)

Table I - Estimated CRM Market Size

Research Groups	1997	1998	1999	2000	2001	2002	2003	2004	2005	Growth Rate
Aberdeen Group	1.12	1.59	12.24	3.15	4.45	6.27	8.85	12.47	17.59	41%
AMR Research	1.20	1.98	3.27	5.40	7.90	11.50	16.80	26.54	41.94	58%
Forrester Research	.87	1.07	1.31	1.61	1.98	2.44	3.00	3.69	4.54	23%
IDC 1	1.2	1.8	9.8	4.0	5.0	6.0	7.0	10.5	13.5	65%
IDC2	1.5	1.9	10	5.0	5.5	7.0	7.5	11.0	14.0	68%
Yankee Group	1.2	1.8	6.0	6.0	6.5	9.0	11.5	14.5	16.5	78%

Source: De Wulf, K., Oderkerken, G&Iacobucci, D. (2001)" Investments in consumer relationships: A cross-country and cross industry exploration." Journal of Marketing, Vol 65

There is an increasing body of research revealing that the new generation customer relationship management (CRM) tools offer reliable customer service solutions and therefore many global companies such as SAP, Oracle, Southwest Airlines, Genesys Telecommunications Laboratories and Terrasoft are

making efforts to implement them to serve the customers better (Coles&Gokey, 2002). The following new generation customer relationship management (CRM) interventions were made by some global companies in 2003.

• German company SAP announced in 2003 that it is contemplating for the acquisition of TomorrowNow(a service provider to more than 100 companies that use programs from SAP, PeopleSoft , JD Edwards and various other companies) to increase its customer base. This is done to grab PeopleSoft clients as reaction to its rival Oracle. American ERP giant Oracle, announced its plan to purchase PeopleSoft. SAP offers maintenance and support for PeopleSoft and JDE solutions through Tomorrow Now and will initially provide administration for clients who are already the clients of SAP. The company reassured former PeopleSoft customers that the company would support and enhance the products of PeopleSoft with its newly bought new generation customer relationship management (CRM) systems with an investment of $10.5 billion, till 2013.

• Oracle announced in 2003 that it will introduce the new generation customer relationship management (CRM) systems at its headquarters with more than 17,000 employees joining by Webcast and phone with 24 hours support and services which are available in 27 languages and in more than 90 countries. Oracle will use PeopleSoft's technical support talent to back its commitment to provide world-class support to PeopleSoft and J.D. Edwards software users. The combined organizations will consist of more than 6,000 support staff in 16 global support centers.

• Business Objects, a provider of Business Intelligence (BI) solutions, announced in 2004 that Southwest Airlines will use several new generation customer relationship management (CRM) products in the Business Objects suite including Web Intelligence, Dashboard & Performance Manager and Business Objects Analytics.

• Business Objects Company cited above will also provide Southwest airlines with a comprehensive integrated platform that delivers strong capabilities in reporting, analysis, web-based Business Intelligence (BI), and performance management. Business Objects will enable Southwest to disseminate information globally, thereby increasing effective decision-making.

• Genesys Telecommunications Laboratories, a subsidiary of Alcatel, announced in 2003, that it has signed a global reseller agreement with PeopleSoft Inc. The agreement is aimed at providing enterprises worldwide operations with next generation service capabilities. These capabilities blend computer telephony integration (CTI) and customer relationship management (CRM) to provide an insight into the company operations and help managers make real-time adjustments based upon business policies.

• Terrasoft released the light version of its popular Terrasoft customer relationship management (CRM) suite for software companies with a new brand. Terrasoft CRM SPE is a new generation customer database application that enables the company to build the customer-centric software brand by providing best sales and customer support experience.

How to maximize the Return on Investment (ROI)?

Maximizing the Return on Investments (ROI) is one of the major challenges before the new generation customer relationship management (CRM) implementers as it involves a huge investment. Maximizing the return on customer relationship management (CRM) investment requires the creation of comprehensive customer profile from various data sources like customer, financial, product line, and external data sources. Once integrated, these profiles provide the ability to drive meaningful business action in and across the operational systems. For instance, an address change in the call center may suddenly trigger a retention program in the marketing system and an address update in the CRM delivery system. It is against this background the Collaborative Commerce (C-Commerce) becomes important while integrating the various data bases (Rengasamy, 2004). It is also observed that, companies lack this fundamental ability to unite accurate and reliable customer data with business processes in their daily business operations.

Enterprises cannot achieve the long-term return on investment (ROI) from their customer-facing applications unless these systems drive customer intimacy on an individual basis. Customer intimacy, or 1:1 relationship management, requires that the customer-facing employees understand each customer uniquely, and not just as a part of an aggregated group. This includes specific customer preferences, transactions and activities within the full context of the business process. Research reveals that, customer relationship management (CRM) investments will not be able to deliver the promised economic results unless they have the power to enable marketing teams to drive campaigns based on individual customer preferences (Dowling, 2002).

In this context, consolidating critical information about the customer in the master reference store and then using that data as the source of reliability across all applications within the enterprise is the only way to address this problem. However, companies require the ability to build, maintain and extend the data over time, by using an evolutionary approach to integrate the data in to various systems. With a practical and affordable approach, companies can rearrange the customer reference data within all applications, and can maximize the return on their investments (ROI) in Customer Relationship Management Systems (CRMS).

Coping With the Unreliable Data: Issues and Challenges

As companies attempt to implement Return on Investment (ROI)-enhancing projects that bring customer data into operational systems and business processes in real-time, they encounter a fundamental problem of unreliable customer data (Buttle, 2000 and Helms, 2001). One major reason for data unreliability is that it stems from an inaccurate and inconsistent customer reference data which is duplicated across the various Information Technology (IT) systems within an enterprise.

As a result, sales representatives, call center agents and other customer-facing employees lack a common understanding of the customer's history within the business. Opportunities to drive new revenues and increase profitability are lost when sales and market-CRM technology implementations are facing such latent customer data accuracy problems.

Customer Data Integration: The Foundational Problem

Most companies deploy multiple applications such as Enterprise Resource Planning (ERP), Order Management, Sales Force Automation, Call Center Management and various other tools to automate and manage their business processes. Most of these applications store and manage a set of customer data elements needed by these applications. For example, the Order Management application usually stores and manages customer related information such as customer name, division name, contact details, bill-to-address and ship-to-address. Similarly, the Sales Force Automation application contains customer contact details as well as information about the customer's organization including web site address and corporate address. As a result, the same customer data is often duplicated across multiple applications.

Current Approaches to the Reference Data

Dealing with the customer reference data is one of the challenges before enterprises which are contemplating to implement new generation customer relationship management (CRM) techniques. Customer data may be represented in different applications in different ways. For example, applications may have different customer codification schemes for zip codes so that one application uses a 5+4 numeric digit ZIP code, while another application uses a 6 character ZIP code to accommodate international addresses. In addition, the data may be erroneous in some systems due to operator input error or obsolescence. To establish a reliable foundation of customer data, these errors require correction and if not addressed properly, they may cause conflicts and overlaps in the basic data. Sometimes this customer data between applications may display many syntax and semantic differences.

It is observed that, custom programming is required to reconcile such differences while consolidating data sources (Winer, 2001). However, over a period of time, such custom code fails to keep pace with the application's update. Any change in the data in one system generally does not propagate properly into other systems without new programming. As a result, quality of the data about the customer across various applications deteriorates over a period of time.

Opportunity Costs of Unreliable Data

The problems described above exist due to the core foundational problems in the Information Technology (IT) infrastructures of the companies which do not have single, reliable "System of Record" for representing customers within the enterprise. Hence, the customer information is usually distributed over multiple systems, with large amounts of duplication, high degree of inconsistency and inaccuracy.

Organizations find it difficult to gain a comprehensive and consolidated 360° view of their customers with such inconsistency in the data about the same customer across various applications. Sometimes, organizations may use an inaccurate data to plan and manage customer activities including sales calls, marketing campaigns and service responses, leading to increased expenses and loss of business opportunities. Sometimes, triggering actions in other applications based on such inconsistent information risks poor decisions regarding customer marketing and other interactions.

These issues cannot be addressed unless one handles the core foundation problem of ensuring consistency and reliability of the key customer data within an enterprise. As a result, many of today's Information Technology (IT) organizations urgently seek a solution that ensures that the customer data is accurate across applications. Before comparing various solutions in the market, many customer relationship management (CRM) experts recommend understanding of the customer data within the enterprise.

Importance of the New Generation Customer Relationship Management (CRM)

There is an increasing body of research evidence stating that the traditional customer relationship management (CRM) techniques face application problems while updating the customer database due to the reliability and consistency problems as cited above (Brown, 2001, Rust, et al 2000 and Reinartz &Kumar ,2002).

It is against this background that the studies on new generation customer relationship management (CRM) methods are gaining importance and therefore many global companies like SAP, Oracle, Southwest Airlines, Genesys Telecommunications Laboratories and Terrasoft are making efforts to implement these systems (Bell et al). New generation customer relationship management (CRM) methods focus on addressing the gaps and deficiencies quoted above while handling the data warehousing issues faced by companies. These methods ensure consistent and reliable customer data for an enterprise. With the new approach known as Custom Master Data Repository with Extract-Transform- Load (ETL), companies try to gain a single and consistent view of their customers by building a customer data repository. They use batch-intensive processes to extract, load, cleanse and consolidate customer data from multiple source applications. These ETL-based master data repositories ensure the accuracy and consistency of customer reference data in large enterprises which have global operations. The major aspects of new generation customer relationship management (CRM) are as following.

• Provide modeling tools to create a customer reference data model and an ability to map various attributes within the data model to source configurable data rather than custom programming.

• Enable extensions of the customer reference data efficiently and update external and back office sources without programming.

• Support an easy drag-and-drop approach to configure rules for data cleansing and matching.

• Deliver a visual framework that captures the factors of data source reliability through time-based functions, data decay algorithms and validation rules. This provides an ability to assess the trustworthiness of information from multiple sources dynamically.

• Offer a capability to auto-merge records, at the cell level, based on the user determined rules and offer potential matches for manual merge through exception handling process.

MAKING NEW GENERATION CRM MORE EFFECTIVE-SUGGESTIONS

New generation customer relationship management (CRM) has reached a new level of maturity, both as a discipline and a technology market. According to a Gartner survey demand for BI/DW, which is an integral part of new generation CRM is stronger than ever in 2004. Most enterprises already have a BI/DW infrastructure in place and are now taking the lessons they've learned from previous efforts to remedy problem areas. At the same time, many enterprises are also moving towards the next steps in the evolution of BI/DW. In this research paper the following suggestions are made to make the tools of new generation CRM more effective.

1. Focussing on Data Quality Service

Very few enterprises set out to remedy data quality problems and focus on other issues. Firstly, poor data quality costs them money in terms of lost productivity, faulty business decisions, and an inability to achieve results from expensive investments in enterprise applications. Secondly, poor data quality can make regulatory compliance extremely difficult. Many companies have cleaned up their customer data to enable CRM-related initiatives. However, their focus has now turned into other areas of the business, such as supply chain and finance.META Group predicts that the market for data quality software and services will grow 20to 30 percent annually through 2007, supporting the observation that companies are committed to actually doing something about their data quality problems.

2. Educating the end user

Educating the end user is an important issue in the implementation of new generation CRM tools. All too often, enterprises still make the mistake of taking an "if you build it, they will come" attitude towards their BI/DW efforts. The greatest technical solution in the world is wasted, if end users are not educated about the data that's available to them and convinced of its accuracy and value. Many organizations feel that it's enough to provide basic training on BI tools for end users. However, in the words of Gartner, "it is more critical to train users on how to analyze the data." Gartner goes on to say that focusing only on BI tool training can triple the workload of the IT help desk and result in user disillusionment. A user, who is trained on the BI tool but does not know how to use it in the context of his or her BI/DW environment will not be able to get the analytical results he or she needs. This user may either turn to IT to do the work for them or give up CRM entirely. Lack of user adoption and perceived value of previous BI/DW efforts is leading more organizations to recognize the value of a complete education and training program for end users.

3. Standardisation and Consolidation of Infrastructure

Enterprises need to focus on the importance of the standardization of the infrastructure to implement new generation CRM tools on a continuous basis. Their interest has been particularly piqued in these lean economic times, while eliminating duplicate BI tools that may result in lower license costs and maintenance expenses. However, standardizing and consolidating a BI/DW infrastructure is far easier said than done. It involves political and organizational issues that are just as challenging as the technology issues.

4. Creation of Master Data Management within the Enterprise

Within every enterprise, there is a set of data that provides valuable information to identify and uniquely define core entities, such as customers, products and suppliers. This data is called master, or reference, data, and it's becoming a primary concern for more and more organizations. Master data management sounds like such a simple task but in reality it is one of the toughest challenges before enterprises. As with many things related to BI/DW seems like a simple task but can actually become very complicated. The proliferation of enterprise applications has resulted in master data being scattered across the enterprise. Different business domains may define and identify "customer" and "product" in different ways, and probably store their reference data in different databases.

The drive towards integrating and streamlining enterprise systems has made getting a handle on master data a priority. Vendors like Kalido and SAP are introducing tools to help with master data management, but any solution also needs to consider organizational issues, such as who "owns" the master data in question and who gets to define it.

5.Actionable Business intelligence

BI has a role to play in the operational functioning of the enterprise as well as the determination of its strategic direction. Enterprises should make efforts to use the insights gained from their data for more tactical decision-making purposes. For example, retail and manufacturing companies are interested in understanding how to use their supply chain information to make timely decisions. If they spot a problem in the supply chain, they want to know how they can act on that information in "real time" to make improvements. Defining business rules can help these companies develop step-by-step instructions for how to respond to the data they're getting from their supply chain and incorporate those instructions into their BI/DW systems.

Conclusion

The first generation customer relationship management (CRM) solutions have failed to yield the long run return on investment (ROI) by implementing traditional customer relationship management (CRM) systems. It is also observed that many global companies are unable to gain a comprehensive and consolidated 360° view of their customers with an inaccurate and inconsistent data. In this context, the new generation customer relationship management (CRM) methods are emerging as a major solution to the global companies by addressing the various gaps and deficiencies of the traditional customer relationship management (CRM) systems and ensure consistent and reliable customer data for an enterprise. Many global companies such as SAP, Oracle, Southwest Airlines, Genesys Telecommunications Laboratories and Terrasoft are making efforts to implement the new generation customer relationship management (CRM) systems to serve their customers better. Outstanding global companies are realizing the importance of the long run return on investment (ROI) aspect of the new generation customer relationship management (CRM) investments. In a nutshell, New-generation customer relationship management (CRM) incorporates customer analytics, business intelligence, and Internet

Table II. The Major CRM Vendors

Category	Vendor Company
Enterprise-wide-back-end office	SAP AG Oracle Corporation Baan Company(now Invensys plc) PeopleSoft,Inc
Front-end office	Siebel Systems Saratoga Systems (a division of PeopleSoft,Inc) Clarify (a division of Nortel Networks) Onyx Software Corporation
Web-based front end solution	Firstwave Upshot.com Rubric
Adhere to Microsoft Standards	Remedy Corporation Onyx Software Corporation
Midsize Player	Interact Commerce Corporation Sales Automation Group
Contact Management	Symantec Corporation Multiactive Software Inc

Source: Robinson, Robin (2000) "Customer Relationship Management (CRM) Redefined: What Global Companies are doing?" Computerworld, February 28.p.67.

search, and takes its place at the heart of the modern enterprise. Henceforth, global companies will invest more on new generation customer relationship management (CRM) tools and may drift away from traditional customer relationship management (CRM) investments.

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