Leveraging Customer Data Integration for Effective E-CRM Analytics

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INTRODUCTION

A holistic view of the customer is a desirable resource in many organizations today. The findings from a recent DMG Consulting study confirm this reality—possessing integrated customer information is a critical success factor in 11 of the 12 business challenges facing organizations (Kharbanda & Dasgupta, 2001). To achieve a single customer view in today's marketplace often characterized by increasing global competition, shrinking product lifecycles, and decreasing customer loyalty, companies are considering customer analytical technologies to uncover previously unknown and valuable insights. These insights strengthen customer relationships through greater responsiveness and customization, thereby boosting customer loyalty. Many organizations now believe one of the fundamental instruments for creating competitive advantage is deploying information technology that supports and fosters one-to-one relationships with customers (Shoemaker, 2001). This type of customized service can be achieved through customer relationship management (CRM) and electronic CRM (e-CRM) technologies, which enable organizations to maximize their customer relationships and increase profits by leveraging people, processes, and technology for more effective acquisition, retention, and cross-selling/up-selling opportunities.

However, a holistic and integrated customer view remains elusive within most companies. Many businesses still struggle with a basic understanding of who their customers are, what they want, and what they contribute to or cost the company. This is due to the myriad of systems typically found in organizations that contain some form of customer data—CRM and database marketing, legacy and ERP (enterprise resource planning), customer service, order management, financial, call center, and sales force automation systems. In addition, integration complexity grows as organizations add external sources such as customer survey, demographic, credit, and lifestyle data. Integrating relevant data to enable a holistic view of the customer requires overcoming many obstacles, which typically encompass duplicate data, incompatible and conflicting definitions, and ownership/political battles.

BACKGROUND

The analyst firm Gartner refers to customer data integration (CDI) as the people, processes, and technologies required to create and maintain a unique, complete, and accurate customer profile and make it available to all operational systems (Shah, 2005). An effective CDI solution makes economic sense by treating the customer as a person rather than a disparate set of loosely related data sources and systems. It recognizes and analyzes how customer interactions affect every function of an organization, from sales and marketing to operations and support. As previously noted, this seemingly "simple" concept is difficult to achieve in organizations. A recent Meta Group study on customer data integration revealed that the greatest challenge in information management is integrating the wide variety of data sources required for extracting needed information (Kontzer, 2004).

To address this challenge and strengthen customer relationships, organizations are implementing organizational data mining (ODM) technologies, which are defined as technologies that leverage data mining tools to enhance the decision-making process by transforming data into valuable and actionable knowledge to gain a competitive advantage (Nemati & Barko, 2001). The growing interest in ODM and associated predictive technologies is confirmed in a recent IDC study by Henry Morris. After surveying 43 North American and European companies, Morris discovered that the median return on investment (ROI) for projects that incorporated predictive technolo-

gies was 145%, while the median ROI for projects that did not was only 89% (Stodder, 2005). This finding illustrates that predictive, customer-oriented ODM technologies such as CRM and e-CRM analytics can offer greater ROI and business value to organizations that adopt them.

CRM can be defined as the adoption, through the use of enabling technology, of customer-focused sales, marketing, and service processes (Forsyth, 2001). CRM is about deploying technology, services, and processes that connect an organization with its customers in the most reliable, efficient, and cost-effective manner while striving to create long-term, profitable relationships. CRM software provides functionality that enables a firm to make the customer the focal point of all organizational decisions. CRM technologies incorporate some of the best-in-class processes for features such as customer service, product configuration, field service, and customer analysis.

CRM has become a key process in the strengthening of customer loyalty and in helping businesses obtain greater profit from low-value customers. The manner in which companies interact with their customers has changed tremendously over the past few years. Customers no longer guarantee their loyal patronage, and this has resulted in organizations attempting to better understand them, predict their future needs, and decrease response times in fulfilling their demands. Customer retention is now widely viewed by organizations as a significant marketing strategy in creating a competitive advantage, and rightly so. Research suggests that as little as a 5% increase in retention can mean as much as a 95% boost in profit, and repeat customers generate over twice as much gross income as new customers (Winer, 2001). In addition, many business executives today have replaced their cost reduction strategies with a customer retention strategy—it costs approximately five to ten times more to acquire new customers than to retain established customers (Pan & Lee, 2003).

Similar to CRM, e-CRM can be defined as the process of acquiring a thorough understanding of an organization's online visitors and customers to create and maintain online loyalty. This loyalty must be built using the most efficient and cost-effective means, since consumers' online attention spans are short, and competing choices are great. E-CRM analytics is the process of analyzing and reporting online customer/visitor behavior patterns with the objective of acquiring and retaining customers through stronger customer relationships.

Prior research has shown that to understand online customers, a company must integrate its data from both online and off-line sources (Mena, 2001). In similar fashion, our study also demonstrates that a company cannot thoroughly understand its customers if it neglects integrating its customers' behavioral data from both the online and off-line channels. In order to have this complete customer viewpoint, it is imperative that organizations integrate data from each customer touch-point. To explore these issues further, we conducted a literature review to provide a foundation for our research. From our literature review, we developed an e-CRM framework and five propositions that demonstrate the importance of data integration in facilitating successful and valuable e-CRM analytics. The research details, findings, and their organizational implications are described below.

RESEARCH FOUNDATIONS AND FRAMEWORK

Past studies (Brancheau, Janz, & Wetherbe, 1996) have shown that data has been ranked as one of the top priorities for IT executives. With the emergence of Web technologies, the collection and storage of data, both internal and external to an organization, has increased dramatically. Internal data refers to data generated from systems within an organization, such as legacy and online transactional processing (OLTP) systems. External data refers to data that is not generated by systems within an organization, such as government census data, industry benchmark data, consumer psychographic data, and economic data. If this data is collected, integrated, and formatted properly, it can prove to be immensely beneficial to a firm in better understanding its customers (Rendlemen, 2001).

Technically, data integration can be defined as the standardization of data definitions and structures through the use of a common conceptual schema across a collection of data sources (Litwin, Mark, & Roussopoulos, 1990). This implies that data is accessible across functional areas, making data in different corporate databases available and consistent. For example, if a traditional 'bricks and mortar' company deploys a Web site and decides to integrate the Web data with its legacy systems, it has to consider various technological and design issues such as data requirements, data quality, data inconsistencies, synchronization, security, and so forth.

Even though data integration is such a complex task, organizations successfully tackling this issue have derived immense benefits from it. For example, Staples Inc. integrated all customer and sales data from their store, catalog, and online efforts into a common database (SAS Institute, 2001). Integrating all this information allows Staples' marketers to monitor and predict how customers migrate from one channel to another or how they utilize the channels to get what they need. Staples can identify what products are purchased at a store vs. their Staples Direct catalog or through their online store. This valuable infor-