

# eCRM in a Manufacturing Environment

**Aberdeen Leila Borders**

*University of New Orleans, USA*

**Wesley J. Johnston**

*Georgia State University, USA*

## INTRODUCTION

This article examines the issue of electronic customer relationship management (eCRM) in a manufacturing context. eCRM has been described as the fusion of a process, a strategy, and technology to blend sales, marketing, and service information to identify, attract, and build partnerships with customers (Bettis-Outland & Johnston, 2003; Jaworski & Jocz, 2002). Although some customers still pay a premium for face-to-face or voice-to-voice interaction in today's high-tech world, through external (e.g., advertising) and internal (e.g., word-of-mouth) influence, the diffusion of the use of eCRM to build and sustain customer loyalty as a firm's strategy is on the rise.

## BACKGROUND

Before the 1930s, the production era in which firms pushed to be the "provider" of products, whether customers needed, wanted, or could afford them, was prevalent. From the 1930s to the 1960s, the selling era dictated the commerce arena in which salespersons were encouraged to make sells, regardless of costs. The onset of the 1960s to the 1990s portrayed the infancy of the marketing era in which the marketing concept (or satisfaction of the customer) laid the historical foundation of eCRM. From the 1990s, the partnering era has predominated, and some functions previously performed by marketing have become absorbed into other functional areas, such as manufacturing. Today, value lies within customer relationships that are satisfying to both the customer and the company.

## VALUE OF ONLINE SPACE

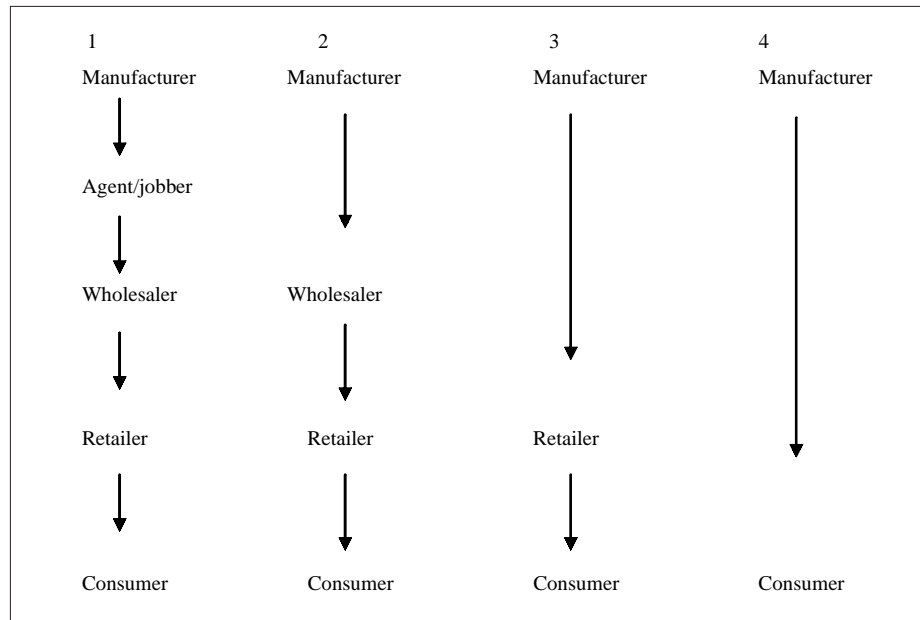
In reaching the maximization of value, businesses must define value, deliver it, and communicate it to customers. Value to the customer is his or her perception of the use of a product or service in relation to expectations. Drivers of value differ in physical (offline) and online places. Krishnamurthy (2003) viewed online operations as either

profit centers (sources of income) or loss centers (offered as service to consumers). The 4 Ps (product, price, place, and promotion) primarily drive physical places. Online, the 6 Cs are the drivers—commerce, content, communication, connectivity, community, and computing (Krishnamurthy, 2003). *Commerce* describes the selling of products from the manufacturing, distribution, and retail firms to customers. Included in this category are the large businesses buying from other businesses in electronic marketplaces. *Content* is applicable to the news publishers (e.g., CNN, *New York Times*, etc.), e-books, or companies using the Internet to educate their customers (e.g., Procter and Gamble at Crest.com). *Communication* involves Web-based seminars, Internet company meetings, and e-mail-based customer service. *Connectivity* refers to the interconnections that employees and users have through the use of the Internet or other knowledge management tools. *Community* is portrayed through special user groups. *Computing* is manifested through tools, such as mapping software, tracking software, and other portfolio management tools that empower customers. Manufacturers build online trust and commitment and potentially increase their value to customers by designing interactive Web sites (Merrilees, 2002). Integrating online operations with physical operations and leveraging company assets provides synergy between physical and online stores that is key to effective eCRM.

## DIGITALITY

Digitality refers to the proportion of a company's business that is online (Krishnamurthy, 2003). The digitality of a business lies between zero and one. A business that is completely online with no physical components has a digitality of one. An example is one in which all employees telecommute, digital products such as software are sold, and customers communicate directly with the company's Web site. Alternatively, businesses with no representation in the online space have a digitality of zero. Most manufacturing firms would have digitality close to zero, except those that have incorporated online activities, like Dell or Boeing.

Figure 1. Channel types



**MANUFACTURING PROCESSES**

Manufacturing processes are the most likely places for sources of innovation and are probably 10 years ahead of service or customer-facing processes (Dixon & Duffy, 1990). Although speed of production still reigns as important in manufacturing processes, the quality of the manufactured product, the flexibility to manufacture different types of products, reliable and predictable adherence to manufacturing timetables, and lowering of the cost and price of products must be matched against the marketing, engineering, and manufacturing capabilities for firms to become world-class competitors in the eCRM world (National Center for Manufacturing Services, 1990).

Typically, sales, manufacturing, and logistics are tightly woven. In coordinating manufacturing with sales, companies attempt to manufacture products and quantities to customer specifications and to minimize delays in delivery. This process has been described as the “lean production system” in automobile manufacturing (c.f. Davenport, 1993). In consumer foods, sales and manufacturing are driven to retail, wholesale, and distribution outlets by consumer demand. A common eCRM tool used is the salesperson’s handheld computer that assists with the aggregation of store-level data, enabling linkages to materials and inventory systems, logistics, and sales departments.

Equipment maintenance is another key area in which knowledge and information must be shared in a manufac-

turing environment to avoid downtime or scheduling and resource requirements conflicts. Radical changes, even lofty customer-initiated improvements, have to be phased in incrementally due to interfaces with legacy systems and logistical concerns in manufacturing arenas, regardless of the company’s eagerness to be customer responsive. Many companies innovating with eCRM to coordinate the procurement and delivery of goods, on the outbound logistics side, find it advantageous to use just-in-time delivery or electronic data interchange to shorten the order-to-delivery cycle (Borders, Johnston, & Rigdon, 2001). Finished goods customization, in some instances, is created only to fill customer orders and to ship goods to the customer, eliminating the need for warehousing. Customers with great bargaining power relative to their suppliers often initiate influence tactics that force suppliers to deliver on rapid, short terms (Borders, 2002).

**DISINTERMEDIATION**

In many cases, the Internet has become another sales channel with complementary features for bricks-and-mortar stores. The role of intermediaries is to facilitate buyer-seller transactions. Understanding disintermediation (the process of eliminating intermediates) requires familiarity with traditional business-to-business channels. Figure 1 illustrates business-to-business channels 1, 2, and 3.



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