



**BUSINESS-TO-BUSINESS E-COMMERCE AND CUSTOMER
RELATIONSHIP MANAGEMENT: TRENDS AND ISSUES**

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Business-to-Business E-commerce and Customer Relationship Management: Trends and Issues

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Abstract

In today's digital economy, involving customers as partners in business relationships is a criterion of success. In the business-to-business marketplace, there are three areas in which corporations can enhance their focus on business customer relationships. These include relational marketing, supply chain management, and customer relationship management. In this paper, we describe how shifts are occurring in these three areas, and how information systems have evolved to play a critical role in supporting the changing focus on the customer business. This is especially important in the context of the current rapid deployment of industrial/vertical marketplaces. Finally, we highlight the difference in emphasis between traditional business and electronic business operations that is needed to support a shift to a customer-focused strategy.

1. Introduction

In an economy shaped by electronic commerce, customers are no longer passive buyers, but are becoming part of an enhanced network, where they co-create and extract business value as collaborators, co-developers, and competitors¹. This enhanced network includes the company, its suppliers, partners, and customers. The purpose and flow of communication among the network participants is to promote an active dialogue with customers and to shape their expectations, via access at multiple levels of the firm. As relationship building proceeds, supplier-customer relationships go through a life cycle that is closely related to building trust between the organizations. When organizations are not aware of each other, relationships do not exist and trust is irrelevant. When contact begins, building trust requires a continuing interaction, including a search for references from others, trial evaluation of products or services, credit checks, security evaluation, etc. This can build into a continuing relationship provided no negative indicators are encountered during the trust-building phase. Finally, a good business relationship is maintained in the long term when trust has been established and maintained, resulting in continuing interactions involving goods, services, and payments, and a growing interdependence between the organizations.

Building relationships and focusing on the customer requires information exchange, which has a fundamental effect on how markets develop and are structured. This depends upon the availability of systems to gather, store, analyze, and manipulate the information generated by customer transactions and supplier-customer interactions. There are three areas of supplier-customer interaction where there has been a shift towards more of a customer focus: relational marketing, supply chain management, and customer relationship management, as demonstrated by Figure 1. As indicated, these areas are all interrelated and can provide a mutual reinforcement of company goals.

¹ C.K. Prahalad and Venkatram Ramaswamy, "Co-opting Customer Competence", Harvard Business Review, (Jan.-Feb.2000), pp. 79-87.

The Shift to a Customer Focus in B2B E-Commerce

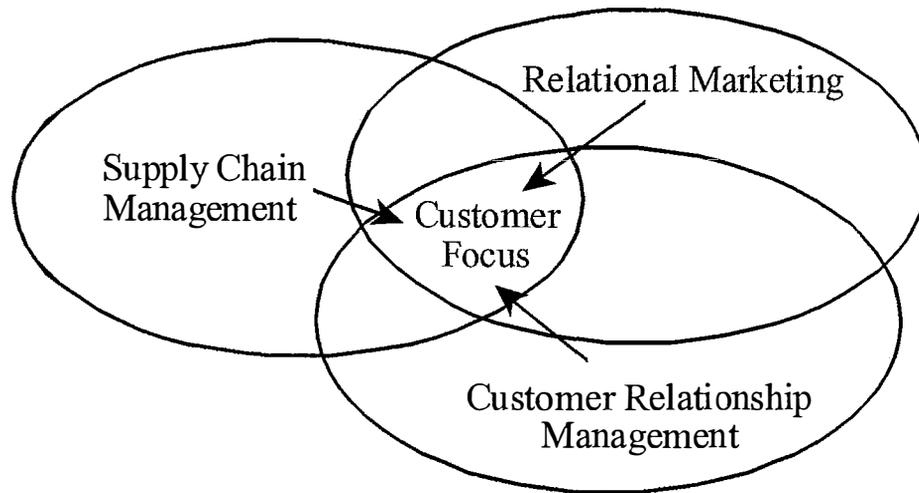


Figure 1.

In this paper, we describe the three areas where a more customer-focused shift has occurred through business-to-business (B2B) electronic commerce. Information systems that are evolving to support this shift include supply chain management (SCM) systems and customer relationship management (CRM) systems. During the current rapid growth of industry/vertical marketplaces, these systems are serving an integrative function. Finally, we summarize the changes necessary in the application of business principles to move towards a more customer-focused business.

2. Relational Marketing

Relational marketing includes relationships among companies and their suppliers, lateral partnerships among competitors, government, and non-profit organizations, internal partnerships with business units, employees, and functional departments, and buyer partnerships with intermediate and ultimate customers. Collectively, these represent complex arrays of relationships among organizations, operationalized through

information transfers. Developing long-term relationships involves genuine interactions between supplier and customer, and must be mutually active, adaptive, and continuous, if it is to be effective. The interaction relationship includes negotiation and joint planning, focuses on continuous value creation for all parties, and involves reciprocal rather than sequential interdependence. Maintaining interactive relationships includes activities such as regularly advising registered customers of new products, product updates, sales, and promotions via e-mail. In return, customers provide information on their requirements and problems, and the expectation is that they will receive a rapid response. Data that are useful in supporting long-term customer relationships can be gathered in many ways, particularly at each event of a supplier-customer contact. For example, initial sales contacts, contract negotiations and contracts, shipping schedules, shipping and service events that are all maintained in a central database can be used by sales, marketing, service, and supply chain support personnel.

To contrast typical short term approaches to long term approaches designed to build relationships, consider a supplier's Web sales site, which interfaces with customers as if it were a vending machine, concentrating on the immediate ordering, payment, and product shipment, with no more than the minimum information being collected. Relationship marketing in the same situation would automatically request information on customer demographics and other interests, and whether the customer would like to be contacted in the future about new products or product updates. In addition, the sales function encompasses product and information requests, surveys, complaints, and complaint resolutions. Customer data gathered during order fulfillment can also be useful for decision-making by supply chain managers.

Two classifications of relational marketing that are relevant to B2B marketing include interaction marketing and network marketing. *Interaction marketing* involves individuals across functions and levels in the firm. Studies have shown that the market orientation of a firm (the organization-wide generation of market intelligence, dissemination of the intelligence across departments, and organization-wide responsiveness to it) is an important determinant of the firm's performance in the

marketplace. Internal activities of this type (e.g. market situations, goods shipments, customer responses) can be supported through internal intranet functions that disseminate information, especially between marketing and supply chain operations. This assists in coordinating cross-functional group work. Internal systems also support interactions and exchange of information among product designers, customer service representatives, developers, and manufacturing partners, via e-mail, e-conferencing, groupware, and secure negotiation support systems.

Network marketing is the modern equivalent of industrial marketing. It refers basically to the longer-term relationships that exist between a business customer and its suppliers. A business network is a set of connected relationships, and these may emerge through interaction between managers at different levels of these firms. A business network is utilized by managers outside the marketing function, and typically takes on a more strategic role than other marketing classifications. Switching costs may be high due to the long-term commitments that may exist between suppliers and customers, and the cost of implementing specialized information systems links. However, these switching costs will decline as more companies join vertical marketplaces, due to their growing use of standardized systems. To foster successful relationships with customers by differentiating their product or service, industrial marketers concentrate on selling and supporting a “bundle of attributes” (both tangible and intangible) and not just a product or service. Strategic alliances may also be established between companies that have common marketing goals, thus sharing the cost of customer acquisition, communications and rewards, for mutual benefit such as market access, resource exchange, etc.

3. Supply Chain Management

Supply chain management (SCM) is the integrated administration of goods and services from the supply side, including the logistics and operations components of the value chain, through the transformation process and distribution channels to the customer. Modern vertical marketplaces support SCM by linking inventory, billing, and shipping to customers and suppliers, complementing marketing, sales, and service

processes that provide the supplier-customer interface (see Figure 2). Through the order fulfillment and after-sales service processes, supply chain management intersects with marketing and sales.

Information Systems in the B2B E- Commerce Marketplace

Systems: ERP = Enterprise Resource Planning, SCM = Supply Chain Management, CRM = Customer Relationship Management

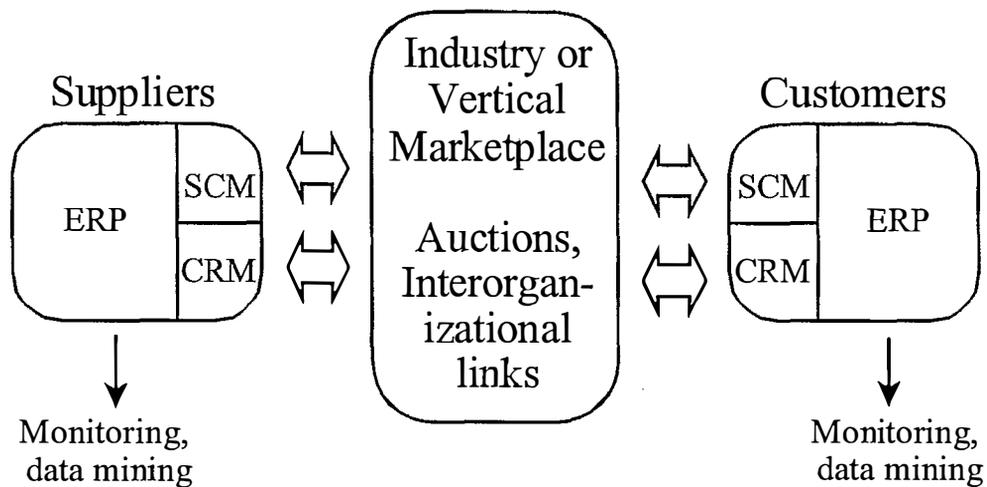


Figure 2.

How the supply chain is managed for a particular customer is determined by the customer's approach to procurement. The balance chosen by the customer between competitive and collaborative sourcing depends on the marketplace and on supplier capabilities. Competitive sourcing is appropriate if sourcing tends to be ad hoc, there is an over-supply in the marketplace, little real market differentiation among P/S, rapid evolution of innovation, and the customer is interested in testing supplier capabilities. This implies less relationship building and more attention to cost efficiencies. Collaborative sourcing is the best choice if supplier and customer have complementary capabilities and resources, access is needed to vital assets and unique innovation, and there are strong and enduring relationships, and common values and goals. Evidence of

free market competition includes spot buying, bidding and tendering. An example is OrderZone.com®, a Web business marketplace operated by the U.S. firm W.W. Grainger, supplying business needs such as office supplies, maintenance products, safety items, scientific equipment, electronic components, etc., where purchasing is through credit card or open accounts. Movement towards collaborative sourcing is indicated by preferred supplier lists, joint venturing, strategic alliances, and co-ownership. Good examples of collaborative sourcing are provided by the contract-manufacturing field, with companies such as Solectron and Celestica working closely with OEM alliance partners IBM, Hewlett-Packard, Sun, and others, to manufacture and supply equipment to their specifications. These involve more “pull” relationships where suppliers build to current needs of customers rather than “push” relationships where suppliers build stock in anticipation of demand.

Fulfillment can be supported by sophisticated systems providing, for example, access to shipment status at on-line company or delivery service databases (e.g. Fedex.com®), delivery via Internet of software products and information services (e.g. TopSoft.com®), access to secure transaction services while purchasing P/S, and performing on-line selection and/or customization (e.g. Cisco Connection OnLine®) with the help of software agents.

The after-sales service function also offers opportunities for collecting and disseminating customer information. Digital and human help can be combined with front-end support through auto-reply e-mail systems or Web systems for Frequently Asked Questions (FAQs) (e.g. Microsoft.com®). Data gathered within the service function includes complaints and resolutions, frequency of problems, problem types, time to resolve, and so on. This is useful information that helps the organization tailor responses to customers, and can be very useful in modifying future product designs. Services often include access to service functions (updates on product, service offerings), and software updates delivered and installed remotely.

4. Customer Relationship Management (CRM)

CRM is a customer-centric strategy that permeates the entire enterprise, and brings all customer-related data into one system that is readily accessible by employees who interface with customers. It encompasses consulting, systems integration, outsourcing, training, and support required to design, build and operate customer care processes and systems. CRM can help to develop a consistent view of a company by its customers. The objectives of a well-run CRM operation include:

- a seamless integration of all sales channels,
- a single source of information when interacting with the supplier,
- immediate response to telephone, Web, and e-mail communications,
- notifying customers of progress on order fulfillment, consistent pricing across all sales channels, and
- opportunities to cross-sell and up-sell across all sales channels.

CRM systems typically involve customer contact centres, sales force automation, marketing automation, and Web-based customer services such as FAQs and mass customization interfaces. They can play a significant role in the integrated services that vertical marketplaces provide, as shown in Figure 2.

There are three basic business processes in CRM: marketing, sales force automation, and customer service. Marketing can be improved by increased automation of some of the core marketing functions such as lead management (e.g. communicating across multiple distribution channels), campaign execution (e.g. linking directly with customers, and communicating with complementary business functions such as distribution), and analysis of marketing data as it becomes available (including profitability and effectiveness). Business intelligence can be gathered through CRM by capturing data at every point of customer contact. Using online data analysis tools, a company can use this information to help increase its competitiveness (see Figure 2).

Sales force automation (SFA) includes lead generation and tracking, order management and fulfillment, and integrating marketing and customer service functions.

Tools provided by SFA system vendors can be at the most elementary level, such as sales activity tools that involve minimal integration with enterprise systems, ranging to considerably more sophisticated enterprise management tools that manage sales operations all the way from the back office to sales, service, and support. Such tools include call centres, which provide a means for direct customer contact. Obviously, the integration of call centres with information systems is essential to provide operators with an integrated database of customer data.

Companies that want to increase revenue per transaction and transactions per customer need to integrate support and customer management into their cost of sales. As CRM is still in its early stages, return on investment (ROI) is difficult to estimate. Important attributes in measuring ROI include customer turnover and customer satisfaction. Properly implemented CRM systems allow the measurement of these attributes, leading to a better sense of what the company is doing right in the view of the customer. CRM applications are typically applied in B2C, but similar CRM functions are useful in B2B applications, although some of these functions are considerably more complex in a B2B environment (e.g. negotiating contracts and settling fulfillment terms). At the present time, CRM systems growth is very rapid, experiencing approximately 70% software package growth rate in 1999².

In addition to supporting customer sales and service through online representatives, CRM software offers self-service opportunities, which means customers are able to get advice, create profiles for themselves, request e-mail updates, browse catalogues, and shop among other things. Smaller to mid-size companies tend to use CRM to obtain information on the customer and share this information within the companies' various departments, while larger companies tend to use CRM to combine front-end operations with back-end enterprise resource planning systems (ERP). The objective of CRM is to present a single face to the customer, and to provide excellent service in the form of information and other feedback, such as product sales and support.

² IDC Corporation, at www.idc.com

It also provides, through integrated information systems within the company, the ability to involve people throughout the company in working with the customers. Hence, quality assurance, product design, and sales all have access to product data that help them serve the customer better. For CRM systems to be effective, they must be integrated with internal back-office systems, providing links to the company's ERP, supply chain, sales and marketing, and other legacy systems. Consequently, it is no surprise that ERP vendors (Peoplesoft, Oracle, SAP) provide CRM modules or has developed strategic partnerships (Siebel, etc.) with CRM vendors.

As an example³, W.W. Grainger, a large Web B2B supplier of MRO products, created a customer solutions call centre to handle upwards of 20,000 calls per day. The goal is to satisfy every client on the first call they place requesting service support. Callers use toll-free numbers to connect with customer service representatives (CSRs) assigned to their accounts. Customers can and do order through the Grainger Web site rather than by telephone. There are more than 100 CSRs, who can browse an ArialView® catalogue containing data on name, skill, department, and location of all their service expert employees who could help to handle a call. Employees are linked via transmitters they carry with them, so CSRs can immediately find a given technician.

5. Building a Customer Relationship Management Strategy

To build a successful customer relationship management strategy, the company's business model must evolve from a product-centric model to a customer-centric model. This requires everyone in the company to be a marketer, taking part in marketing the company's products when appropriate. In B2B marketing, managers up to the level of CEO can become involved in marketing products to major customers.

The great differentiator in CRM is not price, but delivering customer value. Perceived value leads to increased loyalty, sales, and customer retention. Since it costs much more to get new customers than to retain existing ones, customer retention efforts

³ Customer Service: W.W. Grainger Improves Service Quickly and Efficiently, CRMXchange Forum, Case Studies, <http://nt94.syn.net/cgi-bin/webx.dll> (July 2000)

are critical. Developing customer relationships is a continuous process, and not an occasional one. In industrial marketing, in fact, it was common and still is to keep customer support representatives at major customer sites to provide high quality customer service. Customer-centric companies must concentrate on improving value that customers perceive, through interactions that include e-mail, Web site FAQs, self-help applications, remote help centres for sales and after-sale support, and inbound and outbound call centres for telemarketing, technical support and service. This clearly puts customers in control. Companies that fail to provide good service will lose their customers, because competitors are easy to access. An example of an early adopter of customer relationship management was Cisco, a world leader in networking systems and components. They initially implemented a Web site to provide online technical support. This expanded to include an FAQ site to address common problems and questions. Cisco customers can now find solutions to a large proportion of their technical problems through its Web site without contacting a CSR. They can also configure and order their networking products and make purchases online (see Cisco Connection Online® at <http://www.cisco.com>).

Probably the most widely used CRM tool has been customer call centres, for handling service calls and for telemarketing. Web applications are growing in importance for B2B applications, and call centres will eventually become less important, except for backup service calls when the Web site does not provide the required customer information. Key success factors for call centres include:

- automatic monitoring and logging,
- direct links to common customer and product database,
- availability of experts to solve problems,
- scheduling call centre operations to provide high service levels, and
- managers who can schedule and manage call centre work without being distracted by call handling.

Now the call centre is becoming a multimedia contact centre – a focused point of customer contact – as toll-free numbers, fax, e-mail, online chat and other channels of communication proliferate.

6. Vertical or Industry Marketplaces

Electronic B2B company interactions have grown from simply handling transaction data to supporting all forms of information exchange, including procurement transactions, supply chain management, sourcing information, new product development, shared electronic mail, etc. These interactions are frequently handled through industry or vertical marketplaces that link multiple suppliers and customers (see Figure 2). Advanced extensions that support such supplier-customer functions include Web-based interfaces, integration with supplier catalogs and internal information systems, both direct and reverse auctions, and built-in business transaction rules based on purchase limits or negotiated contracts. Once contracts between suppliers and customers are in place, these allow end-users to order products and services on-line without intervention by the customer's purchasing department, including automatic fulfillment by the supplier organization, and payment via electronic funds transfer or purchasing cards. Tightly linked supplier-customer relationships, such as those between parts suppliers and automobile manufacturers, link suppliers to customer inventory and production forecast data, with supplier responsibility for automatic replenishment. These systems support suppliers and customers that wish to develop long term relationships for fulfillment services, or for short-term requirements that can be filled by reverse or direct auctions. The role of SCM and CRM systems in linking customers with suppliers is demonstrated in Figure 2. We show these systems in both customers and suppliers, because customers in turn are often suppliers to other customers.

Intermediaries that support electronic marketplaces include, but are not limited to: industry consortia of customers or suppliers, distributors, retailers, brokers, and financial institutions such as banks, etc. The intermediary typically controls catalogue content, aggregates supplier input, and provides additional functionality and standardized data access to buyers. Some systems, such as Marketsite®, AribaNet®, and Works.com®

support horizontal markets (for specific functions such as Maintenance, Repair and Operations - MRO purchasing). Vertical or industry marketplaces cover particular industries such as metals (Metalsite®), automotive (Covisint®), retail (GlobalNet Exchange®), tire and rubber (RubberNetwork®), life sciences (Chemdex®), and others.

7. Conclusions

It is clear that the emphasis on certain business principles has changed remarkably due to the implementation of e-business. The driving force behind these changes has largely been the need to focus on customer needs, with changes possible because of the availability of systems to gather and disseminate supporting information. This has had an impact on marketing, supply chain management, and customer relationship management. We have summarized some of the relevant changes in Table 1.

Change in Business Principle Emphasis

Principle	Traditional Business	e-Business
Key to success	Cost reduction	Customer relationships
Business focus	Product focused	Customer focused
Business operations	Rigid, functionality-oriented	Flexible, integrated service applications
Supply chain management	Production efficiency	Customer value creation
Product design	Mass production	Mass customization
Production mode	Push (build-to-stock)	Pull (build-to-order)
Role of customer	Passive	Active

Table 1.

Finally, a few concluding remarks to summarize our discussion:

- Relational marketing focuses on the enhancement of relationships with suppliers, customers, and business partners,
- In the digital economy, the focus in supply chain management has shifted from production-centric towards customer-centric, from push (build-to-stock) to pull (build-to-order).
- Competition is becoming less company vs. company and more supply chain vs. supply chain.
- With the availability of more advanced information technology, customers are becoming more sophisticated, more active, more demanding, and more powerful. Thus, excellent customer relationships are the key to business success.
- Customer relationship management should be adopted as a comprehensive corporate strategy to enable an organization to re-invent itself as a customer-centric organization. This works towards seamlessly integrating people, business processes and technology, and refocusing business activities around the customer.

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