

# Business To Business (B2B) Commerce

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## OVERVIEW

The recent buzz in industry and mainstream media about B2B commerce is enormous, and rightfully so. A Goldman Sachs report dated November 12, 1999 estimates that B2B revenue across all industries will reach \$1.5 trillion by 2004 in the United States alone. A more recent report from Forrester Research dated February, 2000 puts the figure at \$2.7 trillion, and the estimates continue to rise.

Despite these impressive sales projections, **B2C** or **business to consumer e-commerce** continues to monopolize most investor and consumer attention. B2C sites like Amazon and eToys typically generate revenue on high volumes of low dollar transactions from many customers.

In contrast, **B2B** commerce can be described as **businesses selling to other businesses through the Internet**. Traditional non-Internet B2B commerce involves businesses that are suppliers, distributors, vendors, and service providers for other businesses.

The revenue projections for B2B commerce result from the fact that B2B commerce usually involves high dollar transactions to a smaller set of customers. For example, while a single consumer can probably afford to buy only one or two computers online at the Dell website, a corporation can order hundreds of computers at a time. Revenue from a single B2B sales transaction thus could be in the hundreds of thousands, even millions of dollars.

There are some B2B transactions that a consumer would have no interest in participating in. Such examples would be an appliance manufacturer such as Maytag purchasing steel to build washing machines, or a long distance phone carrier such as Sprint purchasing millions of yards of fiber optic cable.

The Internet is the key factor in all these different types of B2B transactions, for it is revolutionizing how these businesses sell their products and services. Just as B2C commerce has offered online customers greater convenience, unprecedented selection and lower prices for consumer goods, B2B commerce has offered businesses more choices and lower costs for their business needs.

B2B commerce sites can currently be categorized into three business models: catalogs, exchanges, and auctions.

**Catalogs** are extensions of the tried and true B2C commerce model—the “portal” where customers come to the site and select from a list of products and services offered by various companies. These sites usually focus on a specific set of products or services—this enables smaller companies to sell online alongside larger competitors, and allows buyers to compare offerings from several competing companies at once.

**Exchanges** rely on the concept that businesses will trade their services in a virtual exchange, where buyers and sellers alike congregate. The site itself will charge a membership fee as well as a percentage commission on all business transactions.

**Auctions**, like their consumer cousins such as eBay.com, allow buyers to bid on specific sets of products and services offered by businesses. Auctions offer businesses an easy way to divest themselves of surplus inventory as well as generate continuous revenue like the Catalog and Exchange models.

A new extension of the B2B business model is the concept of **B2B2C** commerce. B2B2C involves **Internet-enabling and streamlining a business' entire value chain**, from its first supplier to the end product delivered to a consumer.

An example of this would be Ford Motor Company allowing consumers to option and buy a vehicle online. Procurement systems would then automatically select the lowest cost parts vendors for the specific vehicle through an exchange and route the parts to the nearest manufacturing plant. Shipping systems would access another exchange to select the most competitively priced trucking company to deliver the finished vehicle to the consumer's nearest Ford dealer.

The advantages of B2B commerce for businesses and ultimately consumers can be summarized as follows:

**Access to Greater Number of Vendors:** Before the Internet, many companies had to rely on local companies or word-of-mouth relationships to build their vendor and supplier networks. B2B commerce offers the possibility for companies to build relationships with companies across the country and the world.

**Level-Setting of Information and Prices for B2B Goods and Services:** When competing businesses are selling the same product side-by-side on the same website, buyers are less likely to be price-gouged due to ignorance of market pricing conventions. Sellers also gain the advantage of knowing what the competition is charging, allowing them to adapt their price structures accordingly.

**Streamlining the Back Office and the Supply Chain:** By actively seeking the lowest cost vendors and integrating with internal back end systems through the Internet, businesses will be empowered to slash overhead, lower inventory and associated costs, as well as respond more quickly to shifts in consumer demand.

## TECHNOLOGY

Many new technologies have been associated with B2B commerce, but none are more exciting than **EDI** and **XML**.

Both these technologies address the primary stumbling block which continues to hamper the progress of truly seamless B2B commerce integration: data exchange. For years, businesses of all sizes have attempted integration of various computer systems--inventory, accounting, procurement, and the like. The essential problem is that each system has its own proprietary data format that is unintelligible to other systems unless translators are used--just as a WordPerfect document cannot be read by Microsoft Word without the help of a translator.

As a result, businesses relied on in-house teams of programmers or outsourced systems integrators to build the software interfaces necessary for all its systems to talk to each other--an expensive and time consuming process.

In recent years, various standards for **Electronic Data Interchange**, or **EDI**, have evolved in certain, mostly public sector industries to allow groups of businesses (financial institutions and hospitals, for example) to exchange data rapidly between individual institutions. However, the limitation of EDI is that the standards rarely apply to exchanging data outside the industry consortium.

The technology that shows promise in conquering this challenge is **XML**, or the **eXtensible Markup Language**. XML is related to HTML, or Hypertext Markup Language, in which all web pages are written. Both languages are descended from SGML, or Simplified Graphical Markup Language. But here the similarities end.

HTML is a language designed to describe the presentation of data, and uses tags to do so. For example,

**<Bold>B2B Commerce is Exciting</Bold>**

tells any HTML compliant web browser to display "B2B Commerce is Exciting" in a bold font. HTML is limiting because only a finite number of tags can be interpreted by a web browser such as Internet Explorer or Netscape Navigator, and must be agreed upon by a standards consortium such as the World Wide Web Consortium or W3C.

On the other hand, XML is a language designed to describe data itself:

**<Artist>Vincent Van Gogh</Artist>**

Here, XML is defining a "Vincent Van Gogh" as part of the data category of Artist. As many of these data tags can be defined as the user wishes...there is no limit because no presentation of this data is implied at all. This is what gives XML its **extensibility**.

Presentation of the data for a web browser can be accomplished through stylesheet languages such as the **eXtensible Stylesheet Language** or **XSL**, which translates XML stored data into HTML for display in a web browser. By separating presentation and processing of data from the data itself, XML greatly increases the flexibility for exchanging and integrating data across the web.

Furthermore, groups of XML tags can be gathered into collections called **XML Schemas**. The true power of XML lies in the fact that if two systems have all their data defined with the same XML schema, they can exchange that data seamlessly. And if the XML Schemas are extended across all systems in a company's business chain, adaptability for future system changes increases a hundred fold compared to traditional system integration, thus speeding the time to market that is the hallmark of the internet economy.

## LINKS

[Goldman Sachs Reports on Worldwide B2B Commerce](#)

[General Information and Research Portal for B2B Commerce](#)

[Forrester Research Reports on B2B Commerce](#)

[Searchable Directory of B2B Sites](#)

[Ratings of B2B Sites](#)

[XML-EDI Standards Organization](#)

[Exchange for XML Schemas](#)

[World Wide Web Consortium--Ultimate Authority for XML Standards](#)

## RESOURCES

*The A to Z of EDI: And Its Role in E-Commerce.* Jilovec, Nahid, 29th Street Press, April 1998.

*B2B Exchanges: The Killer Application in the Business to Business Internet Revolution.* Sculley, Arthur B. and W. William A. Woods, ISI Publications Ltd., December 1999.

*Beginning XML.* WROX Author Team, WROX Press, June 2000.

*Designing XML Internet Applications.* Leventhal, Michael, David Lewis and Matthew Fuchs, Prentice Hall, May 1998.

*EDI Charting a Course to the Future: A Guide to Understanding and Using Electronic Data Interchange.* Crowley, Robert T., Research Triangle Consultants, June 1993.