

eBusiness

Electronic Commerce, commonly known as (electronic marketing) **e-commerce** or **eCommerce**, consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks. The amount of trade conducted electronically has grown extraordinarily with widespread Internet usage. The use of commerce is conducted in this way, spurring and drawing on innovations in electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web at least at some point in the transaction's lifecycle, although it can encompass a wider range of technologies such as e-mail as well.

A large percentage of electronic commerce is conducted entirely electronically for virtual items such as access to premium content on a website, but most electronic commerce involves the transportation of physical items in some way. Online retailers are sometimes known as e-tailers and online retail is sometimes known as **e-tail**. Almost all big retailers have electronic commerce presence on the World Wide Web.

Electronic commerce that is conducted between businesses is referred to as business-to-business or B2B. B2B can be open to all interested parties (e.g. commodity exchange) or limited to specific, pre-qualified participants (private electronic market). Electronic commerce that is conducted between businesses and consumers, on the other hand, is referred to as business-to-consumer or B2C. This is the type of electronic commerce conducted by companies such as Amazon.com.

Electronic commerce is generally considered to be the sales aspect of e-business. It also consists of the exchange of data to facilitate the financing and payment aspects of the business transactions.

History

Early development

The meaning of electronic commerce has changed over the last 30 years. Originally, electronic commerce meant the facilitation of commercial transactions electronically, using technology such as Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT). These were both introduced in the late 1970s, allowing businesses to send commercial documents like purchase orders or invoices electronically. The growth and acceptance of credit cards, automated teller machines (ATM) and telephone banking in the 1980s were also forms of electronic commerce. Another form of e-commerce was the airline reservation system typified by Sabre in the USA and Travicom in the UK. Online shopping was invented in the UK in 1979 by Michael Aldrich and during the 1980s it was used extensively particularly by auto manufacturers such as Ford, Peugeot-Talbot, General Motors and Nissan. From the 1990s onwards, electronic commerce would additionally include enterprise resource planning systems (ERP), data mining and data warehousing.

The earliest example of many-to-many electronic commerce in physical goods was the Boston Computer Exchange, a marketplace for used computers launched in 1982. The first online information marketplace, including online consulting, was likely the American Information Exchange, another pre-Internet online system introduced in 1991.

Until 1991, commercial enterprise on the Internet was strictly prohibited. Although the Internet became popular worldwide around 1994, it took about five years to introduce security protocols and DSL allowing continual connection to the Internet. And by the end of 2000, a lot of European and American

business companies offered their services through the World Wide Web. Since then people began to associate a word "ecommerce" with the ability of purchasing various goods through the Internet using secure protocols and electronic payment services.

Timeline

- 1990: Tim Berners-Lee writes the first web browser, WorldWideWeb, using a NeXT computer.
- 1992: J.H. Snider and Terra Ziporyn publish Future Shop: How New Technologies Will Change the Way We Shop and What We Buy. St. Martin's Press. ISBN 0312063598.
- 1994: Netscape releases the Navigator browser in October under the code name Mozilla. Pizza Hut offers pizza ordering on its Web page. The first online bank opens. Attempts to offer flower delivery and magazine subscriptions online. Adult materials also becomes commercially available, as do cars and bikes. Netscape 1.0 is introduced in late 1994 SSL encryption that made transactions secure.
- 1995: Jeff Bezos launches Amazon.com and the first commercial-free 24 hour, internet-only radio stations, Radio HK and NetRadio start broadcasting. Dell and Cisco begin to aggressively use Internet for commercial transactions. eBay is founded by computer programmer Pierre Omidyar as AuctionWeb.
- 1998: Electronic postal stamps can be purchased and downloaded for printing from the Web.
- 1999: Business.com sold for US \$7.5 million to eCompanies, which was purchased in 1997 for US \$149,000. The peer-to-peer filesharing software Napster launches. ATG Stores launches to sell decorative items for the home online.
- 2000: The dot-com bust.
- 2002: eBay acquires PayPal for \$1.5 billion. Niche retail companies CSN Stores and NetShops are founded with the concept of selling products through several targeted domains, rather than a central portal.
- 2003: Amazon.com posts first yearly profit.
- 2007: Business.com acquired by R.H. Donnelley for \$345 million^[3].
- 2008: US eCommerce and Online Retail sales projected to reach \$204 billion, an increase of 17 percent over 2007.

Business applications

Some common applications related to electronic commerce are the following:

- Email
- Enterprise content management
- Instant messaging
- Newsgroups

- Online shopping and order tracking
- Online banking
- Online office suites
- Domestic and international payment systems
- Shopping cart software
- Teleconferencing
- Electronic tickets

Government regulations

In the United States, some electronic commerce activities are regulated by the Federal Trade Commission (FTC). These activities include the use of commercial e-mails, online advertising and consumer privacy. The CAN-SPAM Act of 2003 establishes national standards for direct marketing over e-mail. The Federal Trade Commission Act regulates all forms of advertising, including online advertising, and states that advertising must be truthful and non-deceptive. Using its authority under Section 5 of the FTC Act, which prohibits unfair or deceptive practices, the FTC has brought a number of cases to enforce the promises in corporate privacy statements, including promises about the security of consumers' personal information. As result, any corporate privacy policy related to e-commerce activity may be subject to enforcement by the FTC.

The Ryan Haight Online Pharmacy Consumer Protection Act of 2008, which came into law in 2008, amends the Controlled Substances Act to address online pharmacies.

Forms

Contemporary electronic commerce involves everything from ordering "digital" content for immediate online consumption, to ordering conventional goods and services, to "meta" services to facilitate other types of electronic commerce.

On the consumer level, electronic commerce is mostly conducted on the World Wide Web. An individual can go online to purchase anything from books or groceries, to expensive items like real estate. Another example would be online banking, i.e. online bill payments, buying stocks, transferring funds from one account to another, and initiating wire payment to another country. All of these activities can be done with a few strokes of the keyboard.

On the institutional level, big corporations and financial institutions use the internet to exchange financial data to facilitate domestic and international business. Data integrity and security are very hot and pressing issues for electronic commerce today.

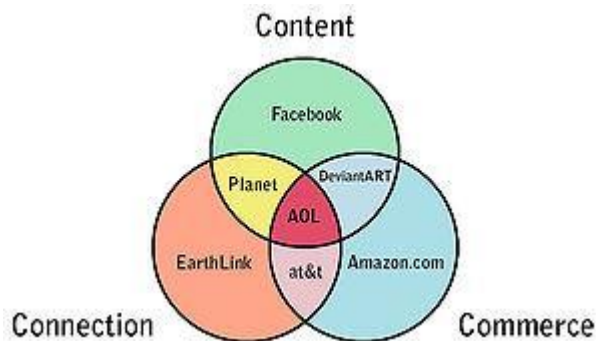
A **dot-com company**, or simply a **dot-com** (alternatively rendered **dot.com** or **dot com**), is a company that does most of its business on the Internet, usually through a website that uses the popular top-level domain, ".com" (in turn derived from the word "commercial").

While the term can refer to present-day companies, it is also used specifically to refer to companies with this business model that came into being during the late 1990s. Many such startups were formed to take advantage of the surplus of venture capital funding. Many were launched with very thin

business plans, sometimes with nothing more than an idea and a catchy name. The stated goal was often to "get big fast", i.e. to capture a majority share of whatever market was being entered. The exit strategy usually included an IPO and a large payoff for the founders. Others were existing companies that re-styled themselves as Internet companies, many of them legally changing their names to incorporate a *.com* suffix.

With the stock market crash around the year 2000 that ended the dot-com bubble, many failed and failing dot-com companies were referred to punningly as **dot-bombs**, **dot-cons** or **dot-gones**. Many of the surviving firms dropped the *.com* suffix from their names.

The three C's



Examples of companies divided over the Three C's.

Various different ways to do business and make money with the internet have been proposed. They are emphasized in the three C's, which stand for Commerce, Content and Connection. Commerce is about selling products over the internet, as Amazon.com does. Content refers to placing content on the internet, varying from news headlines to web-logs. Some examples are BBC News and Facebook. Lastly one can do business by supplying an internet connection, as with AOL, one of the largest internet service providers (ISP) in the US.

Some companies, like Google, Microsoft and AOL, offer all three of them, which gives them an advantage on their competitors. This combination should be a success formula according to some information specialists.

Electronic Business, commonly referred to as "**eBusiness**" or "**e-Business**", may be defined as the utilization of information and communication technologies (ICT) in support of all the activities of business. Commerce constitutes the exchange of products and services between businesses, groups and individuals and hence can be seen as one of the essential activities of any business. Hence, electronic commerce or eCommerce focuses on the use of ICT to enable the external activities and relationships of the business with individuals, groups and other businesses.

Louis Gerstner, the former CEO of IBM, in his book, *Who Says Elephants Can't Dance?* attributes the term "e-Business" to IBM's marketing and Internet teams in 1996.

Electronic business methods enable companies to link their internal and external data processing systems more efficiently and flexibly, to work more closely with suppliers and partners, and to better satisfy the needs and expectations of their customers.

In practice, e-business is more than just e-commerce. While e-business refers to more strategic focus with an emphasis on the functions that occur using electronic capabilities, e-commerce is a subset of an overall e-business strategy. E-commerce seeks to add revenue streams using the World Wide Web or the Internet to build and enhance relationships with clients and partners and to improve efficiency using the Empty Vessel strategy. Often, e-commerce involves the application of knowledge management systems.

E-business involves business processes spanning the entire value chain: electronic purchasing and supply chain management, processing orders electronically, handling customer service, and cooperating with business partners. Special technical standards for e-business facilitate the exchange of data between companies. E-business software solutions allow the integration of intra and inter firm business processes. E-business can be conducted using the Web, the Internet, intranets, extranets, or some combination of these.

Subsets

Applications can be divided into three categories:

1. Internal business systems:

- * customer relationship management
- * enterprise resource planning
- * document management systems
- * human resources management

2. Enterprise communication and collaboration:

- * VoIP
- * content management system
- * e-mail
- * voice mail
- * Web conferencing
- * Digital work flows (or business process management)

3. electronic commerce - business-to-business electronic commerce (B2B) or business-to-consumer electronic commerce (B2C):

- * internet shop
- * supply chain management
- * online marketing
- * offline marketing

Models

When organizations go online, they have to decide which e-business models best suit their goals. A business model is defined as the organization of product, service and information flows, and the source of revenues and benefits for suppliers and customers. The concept of e-business model is the same but used in the online presence. The following is a list of the currently most adopted e-business models such as:

- * E-shops
- * E-commerce
- * E-procurement
- * E-malls
- * E-auctions
- * Virtual Communities
- * Collaboration Platforms
- * Third-party Marketplaces
- * Value-chain Integrators
- * Value-chain Service Providers
- * Information Brokerage
- * Telecommunication

Classification by provider and consumer

Roughly dividing the world into providers/producers and consumers/clients one can classify e-businesses into the following categories:

- * business-to-business (B2B)
- * business-to-consumer (B2C)
- * business-to-employee (B2E)
- * business-to-government (B2G)
- * government-to-business (G2B)
- * government-to-government (G2G)

- * government-to-citizen (G2C)
- * consumer-to-consumer (C2C)
- * consumer-to-business (C2B)

Business-to-business (B2B) describes commerce transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer. Contrasting terms are business-to-consumer (B2C) and business-to-government (B2G).

The volume of B2B transactions is much higher than the volume of B2C transactions. The primary reason for this is that in a typical supply chain there will be many B2B transactions involving subcomponent or raw materials, and only one B2C transaction, specifically sale of the finished product to the end customer. For example, an automobile manufacturer makes several B2B transactions such as buying tires, glass for windshields, and rubber hoses for its vehicles. The final transaction, a finished vehicle sold to the consumer, is a single (B2C) transaction.

Consumer-to-consumer (C2C) (or *citizen-to-citizen*) **electronic commerce** involves the electronically-facilitated transactions between consumers through some third party. A common example is the online auction, in which a consumer posts an item for sale and other consumers bid to purchase it; the third party generally charges a flat fee or commission. The sites are only intermediaries, just there to match consumers. They do not have to check quality of the products being offered.

A **payment gateway** is an e-commerce application service provider service that authorizes payments for e-businesses, online retailers, bricks and clicks, or traditional brick and mortar. It is the equivalent of a physical point of sale terminal located in most retail outlets. Payment gateway protects credit cards details encrypting sensitive information, such as credit card numbers, to ensure that information passes securely between the customer and the merchant and also between merchant and payment processor.

How payment gateways work

A payment gateway facilitates the transfer of information between a payment portal (such as a website, mobile phone or IVR service) and the Front End Processor or acquiring bank. When a customer orders a product from a payment gateway enabled merchant, the payment gateway performs a variety of tasks to process the transaction:

- A customer places order on website by pressing the 'Submit Order' or equivalent button, or perhaps enters their card details using an automatic phone answering service.
- If the order is via a website, the customer's web browser encrypts the information to be sent between the browser and the merchant's webserver. This is done via SSL (Secure Socket Layer) encryption.
- The merchant then forwards the transaction details to their payment gateway. This is another SSL encrypted connection to the payment server hosted by the payment gateway.
- The payment gateway forwards the transaction information to the processor used by the merchant's acquiring bank.
- The processor forwards the transaction information to the card association (i.e., Visa/MasterCard)

- If an American Express or Discover Card was used, then the processor acts as the issuing bank and directly provides a response of approved or declined to the payment gateway.
- Otherwise, the card association routes the transaction to the correct card issuing bank.
- The credit card issuing bank receives the authorization request and sends a response back to the processor (via the same process as the request for authorization) with a response code. In addition to determining the fate of the payment, (i.e. approved or declined) the response code is used to define the reason why the transaction failed (such as insufficient funds, or bank link not available)
- The processor forwards the response to the payment gateway.
- The payment gateway receives the response, and forwards it on to the website (or whatever interface was used to process the payment) where it is interpreted and a relevant response then relayed back to the cardholder and the merchant.
- The entire process typically takes 2–3 seconds
- The merchant must then ship the product prior to being allowed to request to settle the transaction.
- The merchant submits all their approved authorizations, in a "batch", to their acquiring bank for settlement.
- The acquiring bank deposits the total of the approved funds in to the merchant's nominated account. This could be an account with the acquiring bank if the merchant does their banking with the same bank, or an account with another bank.
- The entire process from authorization to settlement to funding typically takes 3 days.

Many payment gateways also provide tools to automatically screen orders for fraud and calculate tax in real time prior to the authorization request being sent to the processor. Tools to detect fraud include geolocation, velocity pattern analysis, delivery address verification, computer finger printing technology, identity morphing detection, and basic AVS checks.

Security

- Since the customer is usually required to enter personal details, the entire communication of 'Submit Order' page (i.e. customer - payment gateway) is carried out through HTTPS protocol.
- To validate the request of the payment page result, signed request is often used - which is the result of the hash function in which the parameters of an application confirmed by a «secret word», known only to the merchant and payment gateway.
- To validate the request of the payment page result, sometimes IP of the requesting server has to be verified.