
eCommerce

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Introduction

The World Wide Web has had a larger impact on education than any other technology in the last ten years. New developments in the Web make it possible to have many types of learning technology available online, such as, simulations assessments and computer-based communication (CTI 1999).

The Internet has its beginnings in the military. An ancestor of the Internet was the ARPANET: a project funded by the Department of Defense (DOD) in 1969, both as an experiment in reliable networking and to link the DOD and military research contractors, including the large number of universities doing military-funded research (Levine, 1999). ARPA is short for Advanced Research Projects Administration. Although the ARPANET started out linking only four computers, by the 1980's the net had spanned the continent. The early Internet was comprised of interlinked networks that connected educational and research sites. These were funded by the National Science Foundation (NSF) along with the military. It was obvious by 1990 that the internet was here to stay, so the military and the NSF bowed out in favor of the commercially run networks that comprise today's Internet (Levine, 1999).

The Internet audience is growing by leaps and bounds. "... where it took 20 years for one million households to have a television. It took five years for one million households to have a computer; and it took only two years for one million households to have access to the Internet" (Keying In, 1999).

What is eCommerce?

Electronic commerce is the paperless exchange of business information using Electronic Data Interchange (EDI) and related technologies. Large businesses have been using EDI as a means to conduct business for quite some time now. EDI on private networks began in the 1960's, and banks have been using dedicated networks for electronic funds transfer for almost as long (Electronic Commerce, 1997). Along with retail, there are many types of eCommerce. Electronic mail (e-mail), computer bulletin boards, fax machines and electronic funds transfer are all considered parts of eCommerce. eCommerce includes much more than the transactions that center on purchasing goods and services. It also includes supporting transactions, such as customer service, sales support, etc.

As little as a few years ago, the internet had a reputation as a "digital attic, crammed full of sites" offering trivial items, that for most people would provide little or no interest. Today however, many businesses and individuals use the Internet to carry on commerce. eCommerce encompasses Web-only stores as well as more traditional bricks-and-mortar retailers that use this new technology as an additional marketing channel (Keying In, 1999).

Retail establishments sell nearly every type of product over the Internet. Software publishers view the Net as a convenient and inexpensive way to distribute products. (World Book, 1999). Today, the Internet is making its own way into the mainstream of commerce with new customers logging on everyday.

eCommerce Uses

For companies, online commerce is an effective and efficient way to conduct business. Organizations that have adapted use of the Internet as a way of conducting business have noted a decline in costs. The Internet has put companies of all sizes on a more even footing. Therefore, small companies can compete on a more level playing field with their much larger competitors. The Internet has made it possible for these small companies to achieve the same global exposure as their much larger counterparts.

Once a web site is up and running, it can work 24 hours a day taking orders, answering customer questions, fielding customer requests, etc. Product catalogs can be updated at any time on the web, thereby, reducing printing costs tremendously. Information regarding products can also be updated and made accessible to the public almost instantaneously.

Convenience is one of the most important features of eCommerce. Where else can one sit around at 3 o'clock in the morning and compare prices on virtually anything one might want to purchase. There are sites such as CompareNet and Bottom Dollar that are devoted solely to providing product reviews, price comparisons and features on a vast array of items. J. D. Powers and Associates estimate that 25% of new car buyers use the Internet to access data about new cars in order to negotiate a better price at the dealership.

eCommerce Facts

Approximately 27 million transactions are made everyday on the Internet. It is estimated that there are 300,000 sites all over the world that sell goods and services, but that estimate is most likely very low. Internet commerce for the year of 1998 in the U.S totaled around \$102 billion with \$7.8 billion in revenue being generated by households alone. According to Forrester Research, revenue generated by online sales could generate \$3.2 trillion by the year 2003. Zona Research, Inc., estimates that 75% of eCommerce revenue will be from business-to-business transactions and that 23-25% will be from consumer activity. The chart below shows online sales by category for the year 1997 and projected online sales for the year 2002. (In millions)

Online Sales
(Dollars in millions)

Category	1997	2002*
*Travel	\$911	\$11,699
PC Hardware	\$986	\$6,434
Grocery	\$63	\$3,529
Software	\$85	\$2,379
Books	\$152	\$3,661
Apparel and Accessories	\$103	\$2,844
Ticketing	\$52	\$1,810
Specialty Gifts	\$100	\$1,357
Music	\$37	\$1,591
Videos	\$15	\$575
Toys	\$2	\$555
Consumer Electronics	\$15	\$792
Health and Beauty	\$2	\$1,183
Other	\$485	\$2,689

*Projected
Source: Wall Street Journal, December 7, 1998

The following table shows business-to-business commerce on the Internet compared with total business-to-business commerce in the following areas:

Business-to-Business Comparison with Projections

(dollars in billions)

Industry		1997	2000*	2003*
Computing Electronics	Total Revenue	\$477.80	\$693.10	\$1,005.40
	Internet Revenue	\$8.70	\$121.40	\$395.30
	Internet as a % of Total	1.80%	17.50%	39.30%
Motor Vehicles	Total Revenue	\$915.90	\$1,150.50	\$1,445.30
	Internet Revenue	\$1.50	\$22.70	\$212.90
	Internet as a % of Total	0.20%	2.00%	14.70%
Petrochemicals	Total Revenue	\$987.30	\$1,142.90	\$1,323.00
	Internet Revenue	\$2.10	\$22.60	\$178.30
	Internet as a % of Total	0.20%	2.00%	13.50%
Utilities	Total Revenue	\$490.20	\$567.50	\$656.90
	Internet Revenue	\$3.20	\$32.20	\$169.50
	Internet as a % of Total	0.70%	5.70%	25.80%
Paper Office Products	Total Revenue	\$826.70	\$981.80	\$1,166.00
	Internet Revenue	\$0.60	\$6.40	\$65.20
	Internet as a % of Total	0.10%	0.70%	5.60%
Shipping Warehousing	Total Revenue	\$312.60	\$334.70	\$358.30
	Internet Revenue	\$0.50	\$6.80	\$61.60
	Internet as a % of Total	0.20%	2.00%	17.20%
Food Agriculture	Total Revenue	\$1,489.60	\$1,627.70	\$1,778.60
	Internet Revenue	\$0.10	\$6.30	\$53.60
	Internet as a % of Total	0.00%	0.40%	3.00%
Other	Total Revenue	\$4,411.90	\$5,314.40	\$6,412.90
	Internet Revenue	\$2.00	\$32.70	\$194.40
	Internet as a % of Total	0.00%	0.60%	3.00%
Total	Total Revenue	\$9,911.90	\$11,812.60	\$14,146.50
	Internet Revenue	\$18.60	\$251.10	\$1,330.90
	Internet as a % of Total	0.20%	2.10%	9.40%

*Projected
Source: Wall Street Journal December 7, 1998

eCommerce Types

eCommerce shows up in many shapes and sizes. There are retail web sites, where a consumer can purchase anything from hats to saws. The retailers can use the Internet as a powerful tool in their business. Not only can a business sell to a consumer; businesses can track their supply and manufacturing process. Trucking companies, air freight companies, railroad companies, etc., have set up web sites to track the goods being shipped. This has reduced costs for these companies and made it easier for their customers to track the progress of items being sent.

High tech is another area booming with eCommerce. Companies like Dell Computer receive about 14% of their revenue from online sales. Other companies like Compaq see a limit to Internet sales growth. They feel that online sales for them will not ever exceed 30% of all orders due to the fact some customers have very specific needs that can't be handled over the Internet.

Financial services offer a wide variety of financial instruments on the web. A person can borrow money for a house, purchase insurance, trade stocks, pay bills, open a bank account and many other options. Some people will never feel comfortable however, sending money with the click of a mouse. Money is a funny commodity, and some consumers will never apply for a mortgage on the Internet. This is not to say that the Internet can't be a valuable tool for the financial world.

Future of eCommerce

The Internet has the chance to be an opportunity and/or a problem. There have been about 90,000 businesses come on-line in the past four years. About 40% of traditional retailers have opened up shop on the Internet as well. The hope is that when shop is set up on the Internet, costs will be low in comparison to a traditional retailer.

Companies like Borders Books feel they have to compete with other online competitors like Amazon, a totally online e-tailor. Even Amazon is beginning to open up distribution centers to house inventory. To make up some of the costs, Amazon is becoming an online landlord. They are charging other online e-tailors to be featured on Amazon.

Borders Books opened up a web site in May 1998. They were not excited about going on-line, but they felt they had no choice but to enter the electronic fray. They feel their foray into the Internet will show a \$10 million loss for the current year and \$20 million loss next year. Stock for the company fell 38% when this information was released to the public (Lost in Cyberspace, 1999). Investors seem to have a bigger problem with already established companies rather than their Internet startup counterparts. Other companies share Borders' belief that in order to stay competitive, they have no choice but to go on-line.

What makes going on-line so expensive? When Borders went on-line, they spent \$15 million to build a distribution center to ship on-line orders. Distribution costs total about 15% of web sales (Lost in Cyberspace, 1999). Borders had to

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The largest problem for Internet companies is marketing costs. Marketing costs for on-line transactions make up 70% of the operating expenses. Marketing costs are only 18% of the operating expenses for the in-store transaction. Internet companies are spending vast amounts on marketing costs due to the fact that brand loyalty is still a major stumbling block. CDNow spent \$18.1 million on sales and marketing in its first quarter this year, a staggering 79% of its \$23 million in sales (St. Louis Post Dispatch, 1999).

Implications and Activities

In general, Business Education deals a great amount with how to be smart about what we do, how to exercise reasonable caution, how to research what we do, and how to gather information before making a decision (Keying In, 1999).

eCommerce is going to play a large part in Business Education. Students need to learn to think from a risk based perspective and how to evaluate those risks in order to determine how much risk to take against the benefits gained (Keying In, 1999). Since eCommerce depends on web page development, the opportunity exists for many interdisciplinary, school-based projects. The school's home page could be developed and maintained by business education students. The multi-media class could offer consulting to other students wishing to set up their own web page.

eCommerce could possibly replace the "school store." An on-line catalogue could be available for student shoppers who would place an order and then pick it up.

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attract on-line customers. This was accomplished by paying fees to other sites to refer customers to their site. This is comparable to paying rent for your space and can total up to about 65% of the Internet sales for a company. Going on-line does not mean that you will attract all new customers. By going on-line, customers could find that shopping your store on-line is cheaper than purchasing an item in the store. On-line transactions like these decrease the profits for the company as well as lower sales.

The next table shows the difference between an on-line sale and an in-store sale and will illustrate the decreased profits and sales from on-line transactions.

Online and In-store Cost and Profit Comparison

	Superstore	On-line
Average Sale	\$100.00	\$100.00
(Discount)	(\$10.00)	(\$20.00)
Shipping and Handling	\$0.00	\$11.00
Sales Tax	\$7.00	\$0.00
Customer Pays	\$97.00	\$91.00
Cost of Sales	\$67.41	\$57.60
Shipping and Handling	\$2.88	\$9.90
Gross Profit	\$26.71	\$23.50
Operating Expenses		
Rent	\$0.96	\$4.55
Labor and Store	\$10.75	\$0.00
Web Site Development	\$0.00	\$2.90
Marketing	\$2.50	\$17.29
Total	\$14.21	\$24.74
Operating Profit per Order	\$12.50	(\$1.24)
	Lost in Cyberspace March 8, 1999	

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The information processing class could put eCommerce tutorials on-line with links to other eCommerce information.

There are a lot of ideas for Internet classroom activities that students and teachers could work on to help familiarize students with the Internet and its possibilities. Students could prepare price comparisons of items found on the web. Using any search engine, students could find items on the Internet. Guidelines would be supplied to the student such as, what would be purchased, how and where the item would be used, the highest price that could be paid, and the quantity needed. The assignment would require that students turn in the URL address, pricing structure for the item, including shipping charges, and a brief description of the item. An average price per item, including shipping charges would be included.

Students could identify the strengths and weaknesses of Internet sites, and develop their own ideas for an Internet retail site. In addition to identifying the strengths and weaknesses, students could evaluate eCommerce web-sites using specific criteria. Listed below are several key points that should be considered when visiting sites.

- Ease of use
- Animation/graphics
- Target audience
- Loading time for Web pages and graphics
- Customizations features
- Customer feedback
- Navigation features
- Interactivity
- Purchase options-credit cards, cybercash, etc. (Keying In, 1999)

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Students could design an eCommerce web-site according to accepted guidelines.

Conclusion

Only time will tell if eCommerce is the wave of the future or a fad that will disappear. Whatever the outcome, business teachers must be knowledgeable of and proficient in technology. Business teachers have proven over and over again that they are able to rise to the occasion and accept the technological challenges that face them, their students and their community.

Interesting Sites for Students and Teachers

- www.1mall.com Online mall
- www.ebay.com online auction house
- www.amazon.com The original on-line bookstore
- www.etoys.com Web toy store
- www.borders.com Online bookstore
- www.goodyear.com perfect fit tire selection
- www.barbie.com Customized dolls
- www.kraftfoods.com Virtual Kitchen
- www.bluefly.com Discount clothing
- www.landsend.com Clothing retailer
- www.cybershop.com Gift finder and reminder service
- www.peapod.com Online grocery shopping
- www.eloan.com Online mortgages
- www.saturn.com Interactive pricing center
- www.dell.com Customized computers
- www.comparenet.com Unbiased product information
- www.firstunion.com electronic banking services
- www.bottomdollar.com Shopping Search Engine

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