

Ecommerce: Thou Shall Not Steal

Kenneth E. Kendall, Feature Editor

Some experts say that one of the advantages of ecommerce is that physical inventory and the casual consumer never meet, which reduces the amount of pilferage. Perhaps they have a point. However, in this column I'm not talking about petty theft—I'm talking about stealing the moniker.

The word ecommerce (née e-commerce or electronic commerce) is being taken away from us as this column is written. Ecommerce once stood for something broader. Now it stands for what I prefer to call e-tailing. Some people's conceptualization only includes what is bought or sold on the Web.

We can perhaps get a clue of the breadth of electronic commerce by exploring the definitions of electronic and commerce from *Microsoft Bookshop 2000* (*The American Heritage Dictionary of the English Language*, 1992)—after all, how can Microsoft be wrong?

e-lec-tron-ic *adjective*

1. Of, or relating to, electrons.
2. Of, relating to, based on, operated by, or otherwise involving the controlled conduction of electrons or other charge carriers, especially in a vacuum, gas, or semiconducting material.
3. Of, or relating to, electronics.

and

com-merce *noun*

1. *Abbr. com., comm.* The buying and selling of goods, especially on a large scale, as between cities or nations. See synonyms at business.
2. Intellectual exchange or social interaction.
3. Sexual intercourse.

Well . . . that made everything clearer, or did it?

My point here is that electronic commerce, ecommerce, or ebusiness should be researched in a broader sense. We should

not allow the popular magazine pundits to make e-tailing the heart and soul of ecommerce.

The following is a list of items we, as researchers, need to study to ensure that ecommerce is researched in a comprehensive and global manner. The list is admittedly only a beginning, but I offer it as a way to extend and launch your own ideas on ecommerce research.

Who will make the most use of ecommerce?

Currently about 85 percent of all revenues earned through the Web are collected by U.S. corporations, who represent more than 95 percent of the global value of Internet companies (Konrad, 2000). Although most of ecommerce now takes place in the U.S., some, including the research firm International Data Corporation, expect more people to be online in Europe than in the U.S. next year.

A great deal depends on the prevailing local culture. When I was a visiting research scholar at Cambridge a few years ago, I shopped in small stores in the neighborhood. I looked forward to friendships I made with the butcher, baker, and other merchants and patrons along the way. When I returned to the U.S., I picked up my previous pattern of purchasing a month's supply of provisions at an anonymous warehouse store whose employees turned over each time I visited the store.

Ecommerce on the Web is simply not suitable for all cultures. Shoppers in Finland may find Web-based grocery stores the answer to their prayers, but people in other countries may not comprehend how Web-based grocery shopping is advantageous or desirable (French chefs who prowl the Parisian fish markets daily at dawn for the best catch spring to mind.)

What will ecommerce be?

We hear about glorious sites like e-bay and priceline.com, but not ecommerce. Once



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again the commentators focus on B2C (business to consumer) ecommerce. The productivity gains in the country will occur as the advantages of B2B (business to business) becomes more evident. Distance learning can be classified as E2C (education to consumer), and when the government gets on board, we open up G2C, G2B, and even G2G possibilities.

A terrific example of the ecommerce paradigm appeared in the last issue of *Decision Line* (Westland, 2000). Professor Chris Westland, who made the Westland and Clark Electronic Commerce book online free as an ecommerce experiment, described another innovative ecommerce application. In the *Decision Line* column he introduced Global Electronic Commerce Central, an auction market for course support in teaching ecommerce.

Ecommerce is not limited to the buying and selling of goods and services. Ecommerce also means informing people of service or product characteristics prior to the sale and supporting goods and services after the sale. So electronic commerce could result in more informed and more satisfied consumers.

Where will ecommerce take place?

Although ecommerce commentators often assume that we will do all of our ecommerce transactions over the Web while sitting in front of a monitor and personal computer, the term electronic does not limit us to desktops connected by wires. As the Web becomes wireless, the possibilities are endless.

Ecommerce will take place on handheld devices like wireless phones and personal data assistants. Bluetooth (named for Harald Bluetooth, a tenth-century Viking king) is a project name for an international consortium composed of telecommunications and computing companies including Ericsson, IBM, Intel, Nokia, and Toshiba. The new technology this consortium is developing consists of a low-cost, low-power, radio-based, wireless link, and along with this the consortium hopes to define a global specification for wireless connectivity. The point is to develop standards so that devices of any type can communicate with one another.

Wireless devices can include items like personal scanners. Imagine taking a small

UPC scanner into the store. Based on price information it gathers electronically, the scanner can advise you whether or not to buy the merchandise in question. If you decide to purchase the product, the scanner can keep track of the total and help with budgeting.

If a person doesn't want to read the news on a monitor or carry a palm device to read while commuting, other alternatives will most likely be developed. For example, some lightweight, "rechargeable" paper has been developed by researchers at MIT in conjunction with E Ink Corp. It has the look and feel of paper, but the content changes when the reader is ready to move on to a new topic.

When will ecommerce take place?

In a traditional world, transactions take place when the buyer initiates a sales or transfer. The Web today is still pull-based. That is, a consumer seeks a price on an item or service. This can be described as e-tailing.

Ecommerce is a broader concept encompassing the ability to easily push goods and services to a person anywhere at any time. Push can remind, push can persuade, and push can evangelize.

Ecommerce can include the use of independent agents or bots, developed so that they eventually can roam around the Web, maybe even visit other computers, reside there for a period of time, and return with useful information. They can inform the consumer and also notify consumers when there are updates to software, viruses to protect against, and sales to shop. Push, of course, assumes that the consumer is tuned in.

Today we can send cookies to another computer and read those cookies at a later date, which speeds up business transactions. IBM has developed such an agent based on Java applets, and thus combined the two to form something called an "aglet" (*The Economist*, 1997).

Independent agents don't care if a Web site is flashy. The virtual learning agent, Mysimon.com, creates intelligent agents to collect information from any online store and doesn't notice whether the page is bright red or boring beige. And Priceline.com doesn't gaze at the photos of each hotel as it shops for a property that meets a traveler's expectations.

But there are dangers in creating an independent agent in our own image. We can establish profiles that express our preferences for aisle seats on an airline, but capturing our set of conflicting priorities and preferences is another matter. Still, Peter Cochrane from BT believes that one day we will create "soul catchers" that capture our preferences, priorities (prejudices?), and allow our personalities to exist even after we die. But human personalities change over time, and the independent agent needs to be allowed to evolve.

Why will ecommerce be preferred?

Until now, people have embraced ecommerce because (1) products and services can be obtained for a lower price, and (2) virtual shopping is easier than real shopping.

For ecommerce to stand the test of time, price and convenience are simply not sufficient. Quality or effectiveness goals will need to be incorporated as well. Consumers need to know that products and services in the ecommerce world are the same or better quality than products they can touch and feel.

Although we cannot initially set up an independent agent that can capture all of our preferences and priorities, it will be possible in the future to develop agents that learn and adapt. We call these agents "evolutionary agents" because they can observe the consumer for some time and then adapt according to his/her trends and subtleties.

By suffering the consequences of booking an unsatisfactory hotel room via an independent agent, we will learn the hard way the next time we tell an independent agent that "We want a cheap hotel room," when what we really mean is, "We want a decent hotel room at a reasonable price—not a flea bag." Independent agents look for what you want based on the information you enter, but evolutionary agents will look for patterns. Evolutionary agents will seek goods, services, and information *sans* representation, that is, without the underlying assumptions that tend to hold human thinking back. In effect, the evolutionary agents will provide not what the user wants, but what the user needs.

The call for quality and effectiveness in general will encourage the use of evolutionary agents, which attempt to deliver goods, services, and information the con-

sumer needs. A more complete discussion of the evolutionary agent appears in an earlier work on the future of artificial intelligence by Kendall (Kendall, 1996) and in a paper on pull and push technologies by Kendall & Kendall (Kendall & Kendall, 1999).

Concluding Remarks

The word "e-commerce" first appeared in the *New York Times* on April 24, 1997. Now e-commerce appears in every section of the paper and the *New York Times* has introduced a new section on e-commerce that will appear five times in the year 2000 (*INSIDE The New York Times*, 2000). Yet the researched definition of e-commerce seems to be getting progressively narrower with each passing day.

I strongly believe that as researchers we should aggressively pursue the goal of widening the scope of e-commerce research. It is our responsibility to explore the frontiers of e-commerce, rather than relegating our inquiries to Web-based e-tailing alone. Let us not allow the narrow-minded in our midst to steal the word "e-commerce" from our more expansive world.

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