

THE ANALOG ANALOGY

THE KEY TO ELECTRONIC COMMERCE

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INTRODUCTION

The Internet was born, and the world changed. Actually the world changed at least twice. First, a wondrous new thing called "electronic commerce" began to emerge, and with it came predictions of a brave new world order. There were predictions of mass dislocation, predictions that new digital currencies would emerge, predictions that governments would fall, and predictions that retail stores would disappear.



The second change occurred when reality set in, and people began to realize that a physical world analog needed to exist in order for an electronic business to be successful.

In this paper, we will argue that the second change, which we call "the analog analogy," is a fundamental requirement for the success of any player in the electronic commerce game. The first four years of electronic commerce have led us to formulate three requirements for business models that are likely to find success on the Internet. After discussing these three determinants of Internet business success, we will project forward from these determinants to identify two industry categories which we expect will prosper on the Internet, and two industry categories which we believe will do badly.

II. THE NATURE OF ELECTRONIC COMMERCE

First, we must be clear about what we mean by "electronic commerce." In 1994, the phrase was commonly used to describe basic enabling technologies, most particularly the safe movement of credit card numbers over the Internet. Four years later, multiple definitions of the phrase still abound -- perhaps as many definitions as there are players.

Our belief is that electronic commerce does not exist as a separate type of commerce. Rather, it is simply an additional channel of distribution which overlaps and coincides with all the other channels that a business has at its disposal -- in short, new technology in the service of "business as usual." Therefore, we define electronic commerce as "the use of personal computers by business or consumers in support of the purchase or sale of information, goods, or services."

There are those who will shop, enter payment and fulfillment information, and complete a transaction online. There are others who will shop, but not enter any additional information online. Instead, they will use a telephone to seek additional information or to complete a purchase through a toll-free operator. Others will shop online then go to a store and purchase the product with a full tactile experience and with a familiar, comfortable way to return the merchandise if necessary. The online environment is merely a transactional medium - a channel of information, marketing, and fulfillment processes -- augmenting normal business, not a stand alone industry.

There is, however, a great deal of money to be made (or lost) as buying patterns shift to utilize this new channel. The modalities of interaction are the frontiers for the world-change. The components of success include logistics, customer service, order taking, inventory access, delivery, reliability, new product introduction, back-office systems, and delivery systems, all at least partially electronic, and all leading to trust and branding. There is nothing fundamentally new here. There is just efficient business using powerful new tools, but in essence selling the same thing as before: a quality customer experience.

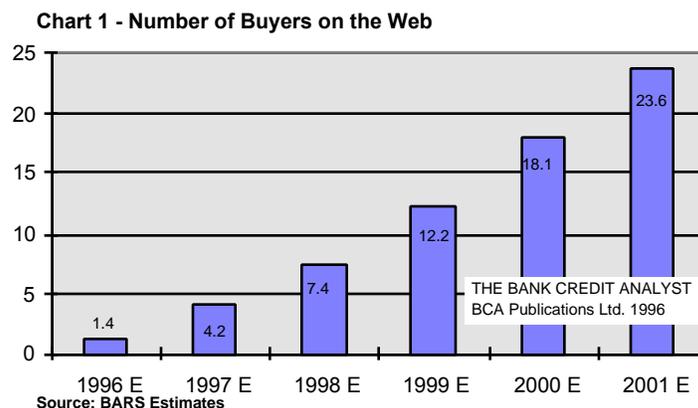
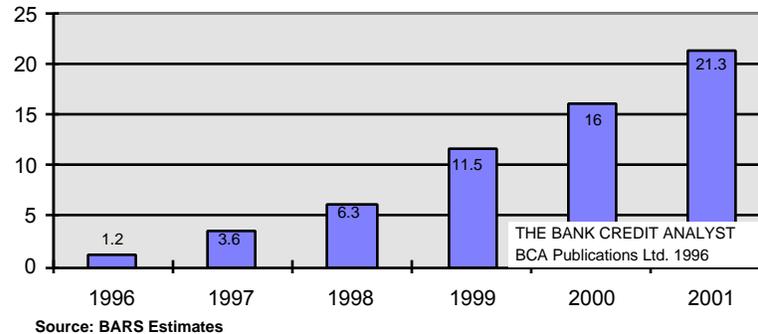


Chart 2 The Internet -- Projected E-tailing Revenue Growth (in Billions)



III. THE ANALOG ANALOGY: PREDICTING SUCCESS OR FAILURE IN ELECTRONIC COMMERCE

The basic idea of the analog analogy is that, in the absence of a genuinely new product, there must be a non-digital and non-Internet analogy in the real world for there to be practical success in the world of electronic commerce. The analog analogy predicts that three requirements be met in order to achieve success: real-world mirroring, invisible interfaces, and repeatability and loyalty. We will discuss each of these requirements in turn. All three requirements must be met for practical success in electronic commerce.

III. A. REAL-WORLD MIRRORING

The first and most important requirement for an electronic commerce success story is a product or service that mirrors a real-world activity with which people are already familiar. The earliest Internet success stories reflect this reality: an online book store, auction, music store, or car dealership is a straightforward analogy that consumers can understand.

The importance of mirroring helps explain the failure, to date, of the most ambitious plans to use the Internet to change the market for recorded music. Many people expected that the Internet would prove to be a fundamentally new medium for music, one where individuals would buy songs "bit-by-bit" instead of in physical form. In an apparent irony, the greatest success in selling music on the net has been in the sale of compact disks, delivered by truck to a physical address.

Conventional wisdom blames bandwidth, disk storage, or inadequate copy-prevention as the reasons for the failure of bit-by-bit music sales. We are skeptical of this explanation, however, and note that the real world's market for personalized recordings is only a small fraction of the market for pre-selected recording "packages." If the physical world market ever demonstrates a stronger demand for per-

sonalized recording - for example, if such uses of the minidisk prove to be a runaway success -- market forces will inevitably accelerate solutions to such other problems as bandwidth limitations. However, it appears that the majority of consumers simply prefer not to be bothered with the details of constructing highly-personalized musical packages, just as a busy driver will often prefer the musical selections of a radio station over a more personal selection of tapes or CD's.

A look at the items sold on the Internet over the past twelve months reinforces the need to mirror the real world:

Top Items Purchased Online in Past 12 Months *

<u>Item</u>	<u>Buyers (millions)</u>	<u>Percent</u>
Software	26.0	38.8
Books	13.0	19.4
Computers	10.1	15.1
Travels	7.5	11.2
Music	6.8	10.2
Food / Gifts	6.5	9.7
Clothing	6.2	9.2
Investments	4.2	6.3
Consumer Electronics	3.0	4.5
Auto / Accessories	2.3	3.5

* Source: Jun. 1998 ICONOCAST consensus estimate of seven research studies conducted in the past year.

In short, while the Internet is a medium so filled with possibilities that it invites rich invention and speculation, it is unlikely to change fundamental human preferences and behaviors. Therefore the business models most likely to succeed will be the ones that are most closely analogous with pre-Internet business models.

III. B. INVISIBLE INTERFACES

In order to approach ubiquity, electronic commerce needs to become ever more invisible in its mechanisms. The second requirement for success in electronic commerce is that the customer interface fade into the background, becoming essentially invisible to the end user. The interface must permit a customer to get what they want, where they want it, the way they want it, and when they want it. Ultimately, the customer interface should become as automatic as steering a car, requiring almost no conscious attention. Such interfaces are, for all practical purposes, invisible.

As user interface designers have known for many years [1], if you want to make a program's user interface seem less complicated -- that is, more invisible in its mechanisms -- you generally have to

make the program itself more complex. In the case of electronic commerce applications, such invisibility can conceal an impressively complex system, including industrial-strength, scaleable back-office and fulfillment systems. The illusion that the Internet can allow a business to be built "on the cheap" has been dissolved by the encounter with real-world logistics and customer service, in particular.

III. C. REPEATABILITY AND LOYALTY

The third determinant of success in electronic commerce requires that one's commercial interactions be a sufficiently meaningful positive experience to produce repeatable behavior that creates recurring revenue and customer loyalty. In the physical world, when a new mall opens in your neighborhood, people tend to "surf" the mall. They check out each store, its products, its location and walk through the entire facility. After a few visits, habits develop, and people pick their preferred stores, no longer looking at everything. Surfing the mall stops once one finds the stores of preference. That is the real world analogy.

One's first few visits to a new mall in the real world have a straightforward electronic analogy, which is "surfing" the net. Surfing the net is primarily a starting behavior for new users. After a few surfing visits to Internet locations, habits develop and people pick their preferred sites. This strongly parallels behavior in a shopping mall. We stroll, we look around, but we soon pick our favorite stores, the places we prefer to park, and the places we like to linger in to just "hang out." Habits develop and we minimize our surfing behavior. Of course, just as in the neighborhood mall, if a new store opens and is successful in getting our attention, we will surf over and check it out, and this too is an important analogy. Initially, surfing the net is really a "training wheels" behavior until preferred locations and habits set in. Getting our attention to visit a new location is an art that still requires good old fashioned brand marketing.

IV. WINNERS AND LOSERS IN ELECTRONIC COMMERCE

Since the majority of things that are bought and sold online are items that existed long before the Internet, the key question that emerges is, "Who wins and who loses in the wired world?" Here we will identify two categories each of winners and losers, but our list is not intended to be exhaustive.

IV. A. SOME WINNERS: LOGISTICS AND INTERFACE PROVIDERS

One of the most basic industries relevant to electronic commerce is the delivery of physical merchandise. DHL, FEDEX and their competitors have a major role in the value chain. The total number of disposable dollars for the items in most categories will not change as a result of the Internet. GNP growth, for example, will be determined by many factors, and the Internet is unlikely to play a major role in stimulating supply or demand for physical products or in creating more disposable dollars for consumers. (Here we deliberately ignore the obvious exception of the wealth created by the dramatic run-up in the price of Internet stocks, which is really a product of the financial markets rather than of the Internet itself.) However, although the Internet will not cause more dollars to be spent, it will cause

a reallocation of where and how those dollars will be spent. If the wired world is going to shift behavior so that we no longer need go in person to make a purchase, someone else needs to pick up our merchandise and deliver it to us -- the delivery companies, which are increasingly positioning themselves as general providers of out-sourced logistics.

Another category of winners will be the interface companies. An interface company is one that develops tools and links to interact with customers and satisfy their needs. Note that by "customers" we do not restrict our discussion only to consumers, but also consider business-to-business applications. Although many will focus on consumer interfaces, the winners will be those that solve and master customer interface problems wherever they occur. Some will do this in broad consumer-oriented ways, but other winners will emerge solving niche business-to-business interface issues. Customer interfaces and the back office engines to which they connect are the playing field from which a new breed of winner will emerge.

IV. B. SOME LOSERS: LEGACY TECHNOLOGIES AND LAGGARDS IN OUTSOURCING

The biggest losers in electronic commerce are likely to be those companies that are overly tied to legacy technologies. Legacy is defined here to be pre-existing computer systems that were designed to be closed systems rather than to work with open extensible networks. The five sites that generate the largest volume of online purchases -- Schwab, Auto-By-Tel, AOL, Dell, and Amazon.com -- share an interesting common characteristic: each of these companies either had no legacy issues to deal with or were able to develop systems that were not tied to their legacy systems.

Notably missing from the lists of successful online transaction processors are the credit card issuing institutions. These companies might otherwise seem naturally well-positioned for electronic commerce. They have excellent branding, contacting masses of consumers daily. Consumers use their credit cards and therefore physically touch the brands of these companies almost daily. These companies also send a written document, their monthly statement, to virtually every consumer in the world, which these consumers must also touch. However, these institutions also have extensive legacy networks that don't talk to each other. Massive technological restructuring would be necessary to solve legacy problems which have been complained about for years. These companies have not shown up on the Internet other than to market variants on their existing products, such as new credit cards. Their legacy systems can't talk to each other, let alone talk to Internet customers. In the case of Amazon, we watched with amusement as the analysts predicted the demise of the upstart electronic bookseller when the big superstores arrived. Amazon has continued to prosper, however, and its more likely competition is probably CDNow, which has also developed a wired ordering, distribution, customer service, and fulfillment system, without any legacy overhang. The recent move by Amazon into the CD business shows that they understand where their real competition is. They moved one vertical market segment away from their core business, rather than attempting to be all things at once. They developed an electronic methodology to sell a product -- really any product - that was already sold in the real world. They mirrored an analog analogy, developed a good customer interface, and made the experience sufficiently easy and price sensitive to make it repeatable. All three requirements were met. The logical next step was to use their non-legacy wired systems to enter another vertical market in which the established players were laden with legacy problems.

A second group of losers will be those who fail to grasp the importance of outsourcing and of the added value opportunities offered by the wired world. It is not a certainty that those who provide added value will win, but it is a virtual certainty that those who do fail to provide added value will lose. The companies adding the most value are defining themselves, doing what they do best, and outsourcing the rest. Amazon, for example, doesn't have its own search engine, but uses the Alta Vista engine, out-sourced from Digital.

Electronic customer service is difficult, and the necessary technologies have barely begun to evolve. Most companies do not really need to conceive, design, build, maintain, and enhance their own customer service technologies. If a company cannot buy electronic customer service, they will of course have to build it themselves. But they will almost always prefer outsourcing where it is an option, as it allows them to allocate scarce internal capital and time resources to their core business. Call centers and outbound bulk postal mail centers were originally operated internally, but today it is far more effective to out-source those functions.

The ability of a company to adapt to today's rate of change is now a fundamental competitive advantage. The more that can be out-sourced, the more a company will be able to respond quickly and efficiently to a changing business environment. Such rapid response to change is much harder for companies tied to legacy systems or tied to internal support of non-core technologies.

The hottest Internet stocks are not technology companies, but are rather companies using technology to give their customers a better experience. They are using technology to make analog business succeed -- in essence, they are non-Internet, non-digital businesses using scaleable Internet technology to increase value. Many of the component technologies can be bought off-the-shelf and linked together. The analog companies that win will be those that out-source critical cutting-edge technologies. The technology companies that win will be those that build components that can easily be utilized by the analog companies to permit the rapid addition of value.

V. THINGS TO WATCH FOR

The analog analogy suggests that the sales cycle in electronic commerce will be an interesting area to watch. In particular, an important question will be how to introduce new products. In the old world, companies used stores, trade shows, public relations, and advertising. In the wired world, without a store, how will people learn about new products? A science will eventually emerge, just as it has emerged in the direct marketing of bulk mail or of outbound telephone calls. No company will have the expertise to do all of this themselves - to design, implement, and innovate; to know all the discussion groups and chat rooms where a new product should be introduced; and to know how to handle the unique customer service demands of a product early in its life-cycle. Electronic introduction of new products will thus be another important function for out-sourcers.

Mistakes are certainly being made. Netscape beget Yahoo. In its need to generate short term revenues for Wall Street, Netscape sold the search button on its browser, not recognizing that this button was a key to the largest initial market for online advertising. In retrospect, the five million dollars that

Netscape thus earned seems insignificant given the multi-billion dollar valuations of Yahoo, Excite, Infoseek, and Lycos.

Then Yahoo beget Amazon, by initially avoiding the area of actual sales transactions. Yahoo saw its analog analogy as advertising, but followed the model of television advertising too closely. It failed to recognize that some advertising is tied directly to purchasing, such as reply cards in magazines or outdoor signs promoting roadside businesses. Now Amazon is apparently trying to avoid begetting an online superstore by positioning itself as a general facilitator of online purchase transactions, pursuing other vertical market segments rather than pigeonholing itself as a bookseller. As Amazon builds brand and trust in the wired world, consumers will buy much more than books from Amazon.

Consumers trust that they can continue to buy from a merchant like Amazon because they bought from them in the past with success. It did not matter what they bought, just that it worked and was a good experience. They are training consumers in their methodology so that they will feel no need to become familiar with any others. The next step is that these methodologies will develop into marketplace protocols. Technologies will be built to mimic the most successful methodologies, so that other companies can buy these mechanisms off-the-shelf. Success in the wired world requires that an analog analogy exist, but identifying the right analog analogy remains a challenging task.

Technology is important in making an analog business more efficient, competitive, and successful, but marketing and product development will inevitably carry the day. Marketers will be far more likely than technologists to correctly identify an analog analogy to exploit.

While good technology is a requirement of successful implementation, building a new electronic commerce business should start with the identification of a new analog analogy -- an area where the electronic analogy to an existing real-world business category has not previously been pursued. We believe that, with electronic commerce still in its infancy, there are still myriad such opportunities awaiting the savvy and stout-hearted entrepreneur.

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[1] Borenstein, Nathaniel S., "Programming As If People Mattered", Princeton University Press, 1991.