

Competing in the Digital Age

by Associate Professor Vijay Gurbaxani

Information technology changes the way companies compete. As the IT industry introduces new technologies at an increasing rate, firms that learn how to exploit these technologies ahead of their rivals have the potential to gain significant competitive advantage. Having spent years studying how technological innovations occur and how they are adopted by individuals and companies, I am nevertheless amazed by the unprecedented rate at which information technologies are being embraced by companies today. This technology-based competition is going to dramatically alter the economic and societal landscapes.

Two years ago, the World Wide Web (the graphical portion of the Internet) was barely emerging. Today, virtually every large company and many small ones have a presence on the Web. In addition to getting information on virtually every imaginable topic, you can trade in equities via brokerage firms on the Internet, acquire a car, make travel arrangements including the purchase of airline tickets, buy a lottery ticket in Liechtenstein's Interlotto, and you can even peruse the Vatican's Web page in the language of your choice. While Pizza Hut has only sold a handful of pizzas over the Internet, Earrings by Lisa, a small company in Poway (a suburb of San Diego, California) has customers worldwide for its costume jewelry. Here on our campus, from a small room at the rear of the store, the UCI Bookstore is having tremendous success selling its wares over the Internet.

The economics of the Internet are substantially different than those of existing distribution systems. One important feature of the Internet is that it allows the creation of electronic communities—geographically dispersed sets of individuals that share a common interest. Consider a community of golfers. A golfer typically purchases equipment and accessories, schedules tee times at golf courses, reads about golf, takes golf lessons and goes on golfing vacations. Prior to the Internet, a golfer would use a different distribution channel for each of these activities. Today, golf sites on the Web allow a golfer to do all of the above from a single interface. By attracting people with like interests, these new community developers are able to make money by selling products and services, and through the

placement of advertisements by suppliers of these products and services.

Another impact of the Internet, as a channel to customers, is that it levels the playing field. Smaller players have similar access to customers as larger companies. Furthermore, since Internet-based vendors do not incur bricks and mortar costs, they often are able to charge prices that are lower than traditional channels, including superstores. With the increasing use of intelligent agents—software applications that can traverse the Web—that can search for the best deal, the Internet will foster tremendous price-based competition.

While the Internet and the World Wide Web receive media attention, many companies are developing proprietary software to compete more aggressively. Increasingly, firms are competing not just on the attributes of their core products and services, but through innovations in information technology. United Airlines promotes "E-ticket" in its advertising and is urging frequent flyers to use its United Connection software to make travel arrangements. In fact, United is now selling the information system underlying E-ticket to other airlines. Charles Schwab and Fidelity Investments both provide customers with proprietary software that allows them to manage their portfolios on-line. Federal Express provides customers with Powership software for shipping and tracking packages, and has also developed the software that allows customers to track packages over the Internet. These companies have enhanced the value proposition that they offer their customers through IT applications. It may surprise you to learn that these companies are in fact among the largest software producers and distributors in the world.

This month, a small firm, Spring Street Brewing Company, created a stir when it bypassed existing stock markets and developed an application on the Internet that allows buyers and sellers to trade in its stock. This technological solution allows the company to raise capital from outside investors at dramatically lower cost than can be done through the existing stock exchanges. Similarly, Southwest Airlines, unwilling to pay the high fees demanded by the established airline reservation systems previously viewed as the primary distribution channel for

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