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Doing Business in a Permeable World

The permeable organization taps into the speed, potential for collaboration, and organic scalability of the network economy. Designed to let customers directly interact with the company to tailor offerings for individual needs, all business activities and company strategies are transparent in the permeable organization. In contrast, customers of non-networked or non-permeable companies are not given this type of direct access and subsequently settle for standardized products that don't completely meet their needs at inflexible prices that may not be competitive.

The primary approach for doing business in a technology-driven economy is the I-Net, which, as we will demonstrate throughout this book, is the key to building and managing a permeable organization. The I-Net represents the apex of the network economy, where the operations of the company interact with the outside world made up of suppliers, partners, and customers through the Internet. Dot companies are designed for permeability at the outset and built from the ground up, and are the clearest representation of permeable businesses. Like their dot counterparts, bellwether firms such as Cisco Systems and Charles Schwab cast off their internally focused back-office IT systems, and replaced them with outwardly focused I-Nets. But, the question remains, What happens to those managers and their companies who don't recognize the new guideposts emerging in business? This question brings us back to the title of this book.

Until recently, the condition we know as vertigo was experienced by pilots, divers, and skiers who, in this state, lost sight of the reference points used to orient their movements; the horizon blends with the clouds; the snow blends with the sky; the fog blends with the sea. The illusions caused by disorientation are the most dangerous aspect of vertigo. Pilots experiencing vertigo have been known to blithely fly their airplanes into the ground at cruise speeds. The pilot may sense the plane is turning right when really it is on a straight course. He or she may feel the plane is gaining altitude when it is actually losing altitude. Instruments provide pilots with vital information when flying in low-visibility conditions, and they must rely on technology rather than their senses when experiencing dangerous conditions. If not, the pilot becomes victim to vertigo.

Now managers as high up as the CEO are vulnerable to vertigo—and the results are as catastrophic as those experienced by pilots. Some managers become confused and send their companies on dangerous headings. But others rely on their instruments to get reoriented and successfully steer their companies onto a new course. The purpose of this book is threefold:

1. To alert managers to the symptoms of dot vertigo (so named, since traditional firms are the first to be left disoriented by the business methods of flexible dot companies).
2. To offer a solution to managers who are in danger of suffering vertigo at the hands of networked or permeable companies.
3. To demonstrate how managers can build a permeable business through a supercharged network that is called the I-Net.

It is my belief that the I-Net will become critical to those companies striving to increase levels of innovation and market share while growing their profits and valuations. The next few chapters discuss why the I-Net is the instrument managers will use to do business in an increasingly permeable world, and which companies have successfully adopted its use. The increasing reliance on more powerful and interconnected networks and on the business models that such connectivity creates is a phenomenon that emerged with the advent of the dot company.

Dot companies pioneered a nimble business model by exploiting the Internet and the latest technologies. By using this explosive combination to their competitive advantage, dot companies engaged 50 million customers in less than four years; current numbers are reaching 200 million. Dot companies have triggered enormous industry restructuring, and while in the past 18 months we have seen these companies come and go, it is equally true that an industry is never the same once the dot company has made its indelible impression.

The Big Picture: Technology Is the Engine Driving the Economy

A lot of time has been wasted in the debate about the technology payoff. It is futile for management to engage in this debate. While many academics and industry pundits continue to conduct pseudoscientific research to show that the payoffs of technology are not real, the plain fact is that companies continue to invest in technology.

Today most companies are investing more than 50 percent of their capital expenditures in one form or another in technology. What's more, the technology industry is robust and growing voraciously. As shown in Figure 1.1, a U.S. Department of Commerce report estimates that the size of the IT industry in the United States is close to $1,400 billion.[1] As you read this book the actual number will probably be increasing, and the pattern of double-digit growth in this industry will take it well into the trillion-dollar level during the early part of this decade.

Second, the products and services that the technology industry is producing are driving the economy. Witness the pervasiveness of firms such as Cisco, Schwab, Amazon.com, Yahoo!, E*Trade, and the like in the consumers' consciousness. The Department of Commerce estimates that by 2006 half of the U.S. workforce will be employed by either companies in the IT industry or companies that are intensive users of IT. For most of the decade of the 1990s, the IT industry accounted for about 8 percent of the U.S. gross domestic product (GDP), but contributed on average 35 percent of the nation's real economic growth.

As IT continues to penetrate companies in every industry, it is becoming

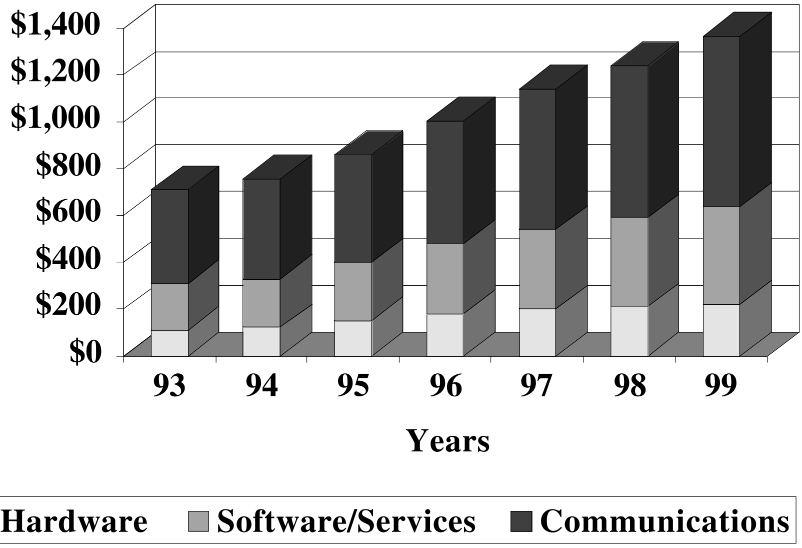

Figure 1.1 Size of U.S. IT Industry (in Billions of Dollars)
Source: Figure 1.1, "GPO Growth in All IT-Producing Industries," The Emerging Digital Economy II, Department of Commerce (June 1999): 17.

more difficult to determine whether a particular company in an industry is more a technology company than it is, say, a bank, a bookstore, or a drugstore. David Pottruck, CEO of Schwab, for instance, considers Schwab to be partially a technology company.

Measuring the Permeable Business

The pre-Internet age business model enabled companies to produce sustained, incremental revenue and earnings growth—what we in management describe as the "march to the northeast corner." Companies considered to be profit drivers accomplished this year after year. Ultimately, this business model led to a handful of large companies in an industry that controlled the majority of that industry's revenue. The companies with the highest revenues and largest industry market share commanded the highest market values.

The main characteristic of these pre-Internet or industrial age companies was control. The drive to control all the factors that influenced a market led to vertically integrated companies, which allowed their management to control raw materials all the way through the production process to distribution of the product.

The high-tech industry, a creation of the network age, spearheaded a different business model where the hallmarks of the company were speed and innovation. Control of too many diverse activities tended to get in the way of these attributes. So vanguard Internet age companies began a trend toward moving away from control and its vertical integration, using technology to virtually integrate the components of the business, connecting the prerequisite partners needed to win in an industry. Technologies—that include but are not limited to the Internet, Enterprise Resource Planning (ERP), and data mining—have enabled the integration and real-time coordination of all of the businesses' stakeholders, both internally and externally. Again, I cite Cisco as a wonderful example of this type of connectivity.

Network-age companies that have mastered virtual integration and melded business boundaries are recognized as having implemented a superior business model. These companies are able to extract value from the marketplace in a more efficient and less complex manner than large, vertically integrated companies. Thus, the market value in network economy companies is no longer correlated with having the highest revenues in the industry. The first company to demonstrate this new business model was Microsoft when its market value grew to rival IBM's market value in 1992 (see Figure 1.2); in 1995 Microsoft's market value broke away from IBM's, and for a time Microsoft had the highest market value in the world.

This shift demonstrates, in part, the impact technology solutions—both as a commercial product and as a business enabler—have had on those nascent companies that we now consider powerhouses. Figure 1.3 further demonstrates this shift by comparing the top 10 ranking for the market value of U.S. companies in 1970, 1980, and 2000. The rankings in 1970 and 1980 are much as you would expect: The list is dominated by a host of industrial companies including General Electric (GE) as well as a handful of oil companies. In 1990 the shift begins to materialize as we see Wal-Mart hitting the list, partially as a result of leveraging its logistic systems to replace Sears' market dominance. Testament to

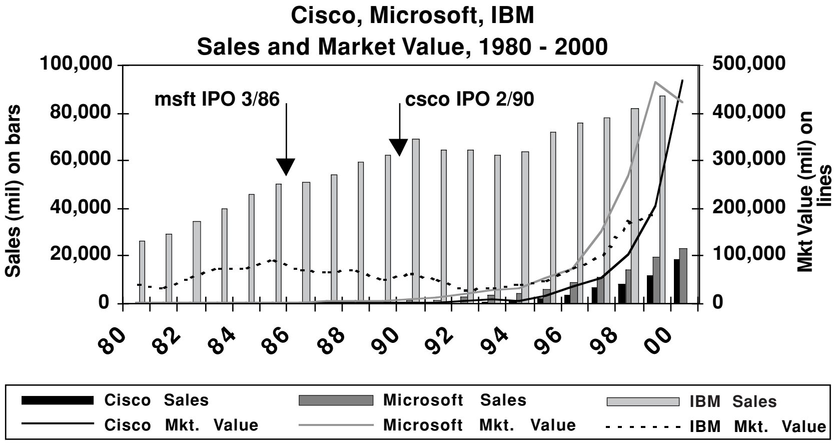

Figure 1.2 Sales and Market Value of Cisco, Microsoft, and IBM from 1980 to 2000
Data source: Compustat.

the power of speed and innovation, IBM falls from the list in 2000, and three other technology companies are included: Microsoft, Cisco, and Intel Corporation. Microsoft and Cisco, while having the first and third highest market values in 1999, also have the smallest revenues of these top 10 firms.

Interestingly, and in support of the practice of following economic patterns, three pharmaceutical companies join the list as we see IT-enabled breakthroughs in biochemistry and the mapping of the human genome. Biotech, pharmaceuticals, and chemical engineering firms continue to dominate the stock market and have become strong performers in an otherwise lackluster initial public offering (IPO) market. Finally, with consolidations in the financial services industry, particularly that of Citibank, Travelers Group, and Smith Barney, Citigroup comes onto the top 10 list. This series of mergers in the financial sector signaled an impressive era of merger and acquisition (M&A) activity that occurred industrywide.

Figure 1.4 further highlights the trajectory of the top 10 highest-valued companies in 2000, and their positions in 1990, 1980, and 1970. GE has sustained the most impressive performance by achieving number 1 in 2000, number 3 in 1990, number 7 in 1980, and number 5 in

Figure 1.3 Top 10 Market Value Companies in 2000 and Their Ranks in 1990, 1980, and 1970 (in Millions of Dollars)

		2000		1990		1980		1970	
Rank	*Company*	*Revenues*	*Mkt. Value*	*Revenues*	*Mkt. Value*	*Revenues*	*Mkt. Value*	*Revenues*	*Mkt. Value*
1	GE	110,832	472,401	57,766	50,095	4,959	13,883	8,727	8,525
2	Exxon	160,883	302,282	105,519	64,449	3,142	34,859	6,554	16,416
3	Cisco Systems	12,154	273,029	70	341	NA	NA	NA	NA
4	Wal-Mart	165,013	236,778	32,602	37,695	1,643	970	44	45
5	Microsoft	19,747	229,150	1,183	8,641	NA	NA	NA	NA
6	Vodafone	12,686	224,929	251	2,441	NA	16,328	NA	NA
7	Merck	32,714	218,060	7,672	34,781	2,734	6,334	748	3,607
8	Nokia	21,088	207,549	6,147	134	NA	NA	NA	NA
9	Intel	29,389	200,457	3,921	7,687	855	1,720	NA	NA
10	Pfizer	16,204	176,962	6,406	13,334	3,029	3,931	870	2,314

Data source: Compustat.
NA—Not available.

Figure 1.4 Changes in Top 10 Companies Ranked by Market Value from 1970 to 2000 (in Millions of Dollars)

	1970			1980		
Rank	*Company*	*Revenues*	*Mkt. Value*	*Company*	*Revenues*	*Mkt. Value*
1	GM	18,752	23,028	IBM	26,213	39,607
2	Exxon	16,554	16,416	Exxon	108,449	34,836
3	IBM	7,504	10,757	Amoco	27,832	23,436
4	Texaco	6,350	9,496	Mobil	59,510	17,163
5	GE	8,727	8,525	Chevron	42,919	17,020
6	DuPont	3,618	6,285	BP	49,368	15,436
7	Gulf Oil	5,396	5,631	GE	24,959	13,883
8	Mobil	7,261	4,762	GM	57,729	13,311
9	Chevron	4,188	4,624	Royal Dutch/ Shell	14,894	13,183
10	BP	4,062	3,950	Texaco	52,484	12,888

Note: Year 2000 data is actually 1999 fiscal year-end data for sales and 12/31/00 market value.
Data source: Compustat.

1970. The shooting star is Cisco, coming from 692 in 1990 and achieving number 2 in 1999. Microsoft has maintained a similar but less dramatic trajectory. Note also that in 1970 revenue and market value of companies show a high correlation, while in 2000, there is not a significant correlation between the two. Cisco has the third highest market value and ranks 290th in revenue; Vodafone is sixth in market value and 277th in revenue. Is this just dated market news? Perhaps some might construe it as such; certainly vertigo-inflicted managers would. However, the perceptive reader understands that these patterns signify those business attributes that create profit-driving companies that form the backbone of an ever-changing economy—the most important attribute being connectivity. Later in this book I'll examine how blue chip com-

1990			*2000*			*Revenue Rank*
Company	*Revenues*	*Mkt. Value*	*Company*	*Revenues*	*Mkt. Value*	*in 2000*
IBM	69,018	64,567	GE	110,832	472,401	9
Exxon	105,519	64,449	Exxon	160,883	302,282	4
GE	57,766	50,095	Cisco Systems	12,154	273,029	290
Philip Morris	44,323	47,932	Wal-Mart	165,013	236,778	2
Toyota	62,566	39,499	Microsoft	19,747	229,150	145
Bristol Myers Squibb	10,300	35,096	Vodafone	12,686	224,929	277
BP	58,990	34,581	Merck	32,714	218,060	72
AT&T	55,977	32,901	Nokia	21,088	207,549	133
Coca-Cola	10,236	31,073	Intel	29,389	200,457	83
Procter & Gamble	24,081	29,998	Pfizer	16,204	176,962	192

panies as well as first-generation dot companies countered competitors and pulled out of vertigo-induced dives by building webs of connectivity that supported and protected the firms.

In addition to market value, the revenue per employee figures for the top 10 in 2000 are all in the high numbers—over $300,000 per employee, with the exception of Wal-Mart, a company that is dependent on a large part-time workforce. Both market value and revenue per employee are telling indicators of an organization's achievements, whether it is dedicated solely to creating wealth or actively participating in shaping its industry. Permeable companies strive to do both. The next sections discuss in greater detail the importance of these two metrics.

Market Value

The U.S. stock market has been shown to be a relatively efficient processor of information about the future prospects of publicly traded companies. Theoretically, the market value of a company represents the collective judgment of the cash that investors think they will be able to realize from their investment in a company; it is the expectations that investors believe they will realize from the returns (profits generated) as a result of the viability of the company's business model and the execution of the business model by its management team. But, for the general business and investment population, market value represents a belief about a company's future.

Now more than ever, the market value of a company is completely dynamic, shifting as new information emerges. The past 18 months have shown us just how dynamic market value is—and how volatile the stock market has become. This volatility has served to weed out those companies that have not been able to increase their levels of performance or strengthen their firms as quickly as their competitors. While the rewards are high for those companies that survive and prosper despite the fluctuations, exactly which companies will reap these rewards remains uncertain. We have seen this uncertainty reflected in the devaluation of Nasdaq companies across the board, impacting even giants of the network age such as Amazon and Cisco. However, volatility only strengthens the argument for creating permeable, highly connected companies that can respond to fluctuations strategically and operationally on a daily basis. It also emphasizes the importance of our second network economy metric: revenue per employee.

Internet bellwether companies have returned the volley of market scrutiny by standing by their business model. Amazon's business approach has been the subject of much debate and analysts' attention, mostly due to the fact that Amazon continues to scale its business—that is, growing in operations and revenue—while maintaining poor earnings. That being said, Amazon is in business today because of its network. Forget about the stock price for a moment and look at the business. Ask yourself, operationally, how are these firms competing? What's their market reach? What are their costs? The reason why firms like Amazon, Google, Yahoo!, and Cisco continue to cause their competitors to suffer dot vertigo is found in their networked infrastructure—the key component of their business model.

Jeffrey Bezos, founder and CEO, describes Amazon's strategy simply: "We intend to build the world's most customer-centric company."[2]

Bezos goes on to explain:

> We hold as axiomatic that customers are perceptive and smart, and that brand image follows reality and not the other way around. . . . We're fortunate to benefit from a business model that is cash-favored and capital efficient. As we do not need to build physical stores or stock those stores with inventory, our centralized distribution model has allowed us to build our business to a billion-dollar run rate with just $30 million in inventory and $30 million in net plant and equipment.[3]

In a CNBC interview, Bezos once commented that it's about "prophet" not "profit." With a commitment to networking, connectivity, and seamless service on its side, Amazon and companies like it will continue to counter a fluctuating market, skeptics, and critics.

Delving a little deeper into the Amazon business model to focus on the company's networking capabilities and scalability, let's examine the rollout from books to everything.

Initially, selling books on the Internet had inherent business advantages. By using a Web-based storefront and keeping only a small inventory on hand, the company could scale with remarkably few fixed assets. Where a traditional bookseller would have to open 1,000 new stores in order to double sales, Amazon could double its sales with minimal expense (just the few new servers needed to handle the extra order load).

Additionally, Amazon turned over its small inventory 150 times a year versus the four-times-a-year turnover that was standard in bricks-and-mortar bookstore, all the while offering a selection many times that of the largest physical bookstores. Further, with the workings of IT systems, Amazon.com got paid immediately with a customer's credit card and didn't have to pay suppliers for 25 days. The result was a significant collapse in the time of the bookselling operating cycle.

In December 1998, Henry Blodget, then with CIBC Oppenheimer, released an analyst report that valued Amazon.com at $20 billion, setting a target share price at $400. Noting Amazon's recent moves into a number of new markets and with a hunch that Bezos was not about to stop, Blodget argued that Amazon was in the beginning stages of "building a global electronic-retailing franchise that could generate $10 billion in revenue and an EPS (earnings per share) of $10 within five years."

Within one month of that report, Amazon broke the $20 billion market value threshold, and, as it turned out, Blodget was right: Bezos was after more than just books. Since announcing its entry into music sales, Amazon has expanded into a new product area every four or five months. The company began offering videos in November 1998 and launched an online auction site in April 1999. In the second half of 1999, Amazon opened a toy and home electronics store. Additionally, the company made strategic investments in drugstore.com, Pets.com, and Homegrocer.com, to enter the online pharmacy, pet, and grocery store arenas. Later, the company announced a home furnishings store.

Figure 1.5 tracks the evolution of the Amazon.com business model and its stock performance. While you've heard this story before, rethink the scenario as it now applies to permeability. With a network at the core of a company's infrastructure, Amazon has remained dominant in the retail market space.

Revenue per Employee

While stock prices are a barometer that many individuals have access to, I have successfully used the revenue per employee metric to measure technology and network investments. I began tracking revenue per employee as a key measure of business performance in the mid-1980s. My logic was that technology enables workers to access massive amounts of information, which, in turn, increases their productivity. A prerequisite to realizing their potential, however, is an IT infrastructure consisting of databases and networked PCs for every employee (a key component of the contemporary I-Net, as you will read in the next chapter).

I made these investments at Nolan, Norton and Company (NNC) in the early 1980s by equipping our consulting staff with portable computers. Soon we began using the computers to communicate among project teams and for preparing and giving presentations to our clients.

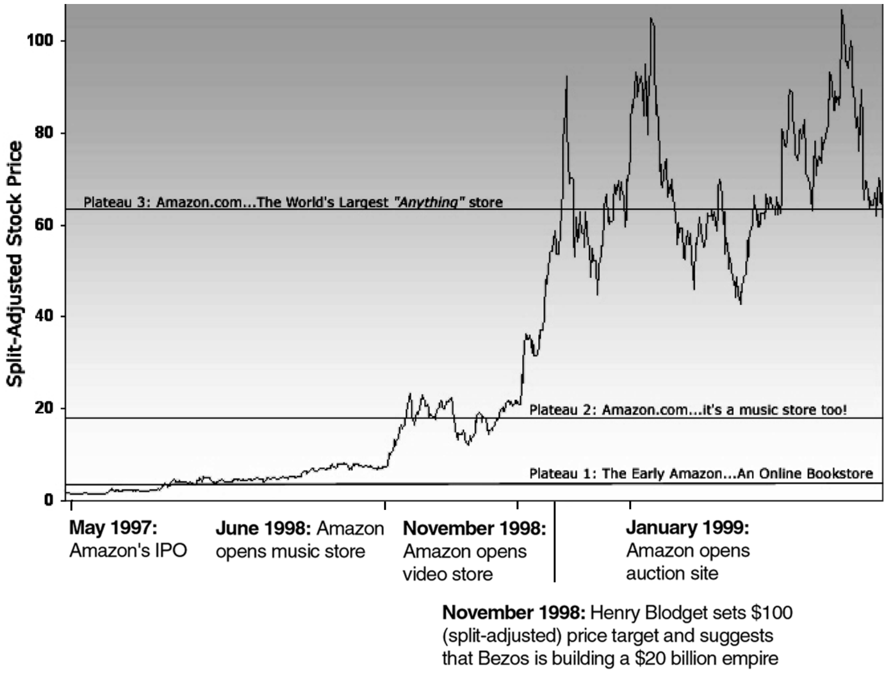

Figure 1.5 The Evolution of Amazon.com's Business Model and Stock Performance (Stock Price in Dollars)
Data source: Compustat.

One of my more memorable experiences was when making a hypercard presentation on a projector-equipped Macintosh computer to the then dean of the Harvard Business School, John McArthur. [Hypercard was the software product of Apple, and was the first widespread implementation of hypertext. Hypertext involves communicating chunks of information (the idea of a card), and allowing linking to the various cards from one card to the next.]

John seemed as interested in how hypercard worked as he was in our technology recommendations for Harvard Business School. We were able to use these capabilities to present detailed data behind our recommendations as John probed our logic and wanted to learn more about various aspects of our analysis. Ultimately John and his senior faculty made the decision to require that all entering MBAs come to HBS with a PC equipped with a standard software environment. Dean Kim Clark continued on with this program by equipping the faculty with PCs and building a strategic I-Net for HBS. In this early part of the new millennium, we at HBS believe the I-Net continues to improve the educational experience for our students, and it has provided the impetus for launching an e-learning initiative.

After the acquisition of Nolan, Norton and Company by KPMG Peat Marwick in 1987, I went on to work with KPMG to expand the NNC program into a knowledge management initiative that we called the "shadow partner." The term "shadow partner" captured our vision of using strategic I-Nets and PCs to leverage the work of professionals. The idea of the shadow partner was that the PC should be made so easy to use that the experience would be similar to simply asking one of your real partners a question and getting back a useful response.

Today at the Harvard Business School we introduce almost all the participants in our executive education program to the shadow partner through a team-based exercise. We first introduce the executives to our strategic I-Net, basic concepts of searching on the Internet, and available business databases accessible through the electronic library at HBS. Then we assign a shadow partner case,[4] which the executives work on for the next couple of hours. One version of the case sets up a dot company that enters an industry. During a board of directors meeting, the president comes out and asks the CIO to find out competitive information about the dot company and assess the competitive threat, and presents back to the board two hours later. The presentation and analysis is the deliverable of the team. The faculty reviews the presentations and awards token prizes to the teams with the best analyses and presentations. The results are eye-opening for all involved, and have been said to be equivalent to similar analyses assigned to consultants costing tens of thousands of dollars. This shadow partner exercise has become a seminal event for many executives who have not grown up with computers and the Internet.

With these new metrics as guideposts, a better understanding of the evolution of the I-Net and the impact of networking, let's look at how companies with seemingly savvy management teams fall victim to vertigo.

Symptoms of Dot Vertigo

Dot companies are a phenomenon that has forever changed the practice and principles of business. Companies like Amazon.com are invented and built by a new breed of entrepreneur/managers who have grown up in the world of computers and the Internet. They have a background that allows them to see opportunities in a way traditional managers rarely can.

These new entrepreneurs operate in a different manner. Rather than employ the scientific method of research, hypothesis, and testing before they take action, they are in a constant state of action: try it, learn from it, improve on it, and keep going forward—never look back.

These differences propel the dot company challengers. Capitalizing on the Internet and associated technologies, a worthy industry challenger can be conceived and built in less than one year. Witness garage-born businesses Microsoft and Apple. This quickness catches incumbents off guard and causes a state of dot vertigo. CEOs can learn how to counteract dot vertigo by being alert to seven symptoms of vertigo: denial or minimizing, maintaining a complacent culture, responding with business as usual, failure to cannibalize your product line before your competitors do, letting egos get in the way, always in catch-up mode, and failure to adopt the new business model for the industry.

Denial or Minimizing

Dot companies, whether they be solely Web-based like Google or a clicks-and-mortar company such as Cisco, surpass unwitting competitors by staying under the radar of the incumbents' senior management teams. Examples of industry stalwarts not recognizing a nascent company in their market or taking competitive threats seriously abound: Microsoft versus IBM, Amazon versus Barnes & Noble, Netscape versus Microsoft. . . . (Interestingly, some companies that initially used this strategy to dominate their market space fell victim to this symptom of vertigo, the strongest example of this being Microsoft.)

Complacency

Complacency and the need to maintain the status quo are real problems for incumbents, especially during times of change—for example, as seen in the recent rise of the strategic importance of IT in business. The culture of the dot company incorporates continuous innovation from the outset; change is inculcated in its modus operandi.

"Business as Usual" Responses

Even once an incumbent recognizes a dot company challenger as a viable competitor, the early competitive responses are often ineffective. Typically, the competitive responses can be characterized as "business as usual." One example is dropping prices with the intention of driving the new competitor out of business.

Competition in many industries has evolved to a few dominant players operating like an oligopoly. When new entrants try to come into an industry, the incumbents drop prices to drive out the new entrant. Once the new entrant is gone, the incumbents raise their prices, and life goes on as before in the industry. Lowering prices rarely works to drive out the dot company. First, the dot company generally benefits from having a lower cost structure than the incumbent due to more reliance on IT and less reliance on bricks-and-mortar resources. Second, the dot company's access to equity markets often provides a source of cash to weather a price war.

Dot companies also prey on incumbents by using technology in a way that is unfamiliar to most incumbent senior management teams—strategically. While incumbents have been using IT for many years, most of their uses can be described as tactical back-office uses and not strategic uses. Thus, responses to strategic uses of IT by incumbents are many times just plain ineffective.

Failure to Cannibalize Existing Products

The innovative use of technology is changing the product development and service processes in every industry. Yet, the incumbents seem consistently tardy in recognizing the impact and acting on it. This slowness to react gives the dot companies a significant advantage.

For industrial age companies, the problem is that change is paced by the annual budgeting process, so even the mechanism for acting slows down the process. These factors govern the cannibalization of the incumbent's products and service delivery systems, which provides even more time for the dot company to implement a better business model. Driving the business model is the IT-enabled capability of being able to connect electronically with individual customers and respond in real time to their needs. In an earlier book, I developed this idea as the emergent strategy in the network age of "sense and respond."[5]

Letting Egos Get in the Way

Old Economy or New, this symptom continues to plague well-established organizations. Simply put, focusing on the trappings of success is sure to force a company to spin out of control. Responding to competitive threats with a show of force is less effective than attacking the actual problem, whether it be innovation, customer responsiveness, or shifting market demands.

One anecdote involves Barnes & Noble's legal retort to a series of rather humorous radio ads by Amazon.com about trying to find appropriate space for Amazon's bookstore, touted to be the largest in the world. B&N took umbrage and litigated the biggest bookstore claim against Amazon.com. Once again, it seems that Amazon.com came out the winner, gaining more publicity and promoting an even bigger buzz[6] about the company. In a publicized settlement, Amazon and B&N settled the lawsuit, agreeing to compete in the marketplace and not in the courts. Not only did Barnes & Noble gain nothing from the litigation, but its senior management team came away looking foolish and desperate.

Always Playing in Catch-Up Mode

Dot companies are built in periods of months. They see themselves in a race for acquiring and holding customers; decisions are made on the basis of expediency as much as on that of "being perfectly right." Incumbents view the fast environment of dot companies as chaos, while dot companies view their environments as a competitive necessity; so incumbents are always playing catch-up.

Amazon versus B&N

It seems that it was not until 1998 that Barnes & Noble realized that it could not effectively respond to the Amazon.com threat within its existing organization. On September 24, 1998, Barnes & Noble announced a public stock offering of Barnes&Noble.com stock, and subsequently partnered with Bertelsmann, its bricks-and-mortar competitor, to build a separate dot company. Around this time, it also tried to buy Ingram Book Group, the leading book distributor used by Amazon.com; the deal was subsequently blocked by the U.S. Department of Justice on antitrust grounds.

By this time, the emergent strategy of Amazon.com was taking on new dimensions. A firm believer in Metcalfe's Law, CEO Jeffrey Bezos had been aggressive about the retention of customers. His marketing strategy included heavy investment in his Web-based bookstore, ad campaigns to generate customer interest, strategic alliances to attract Internet users to the Amazon.com web site, and a continually evolving story to create a buzz on Wall Street. By 2000, Amazon.com had outpaced the incumbent Barnes & Noble. Within a five-year period Amazon.com had built revenue to over $2.5 billion—about 70 percent of Barnes & Noble revenue. The strategy of Barnes & Noble setting up a separate dot company seems to have made good economic sense as reflected in Barnes&Noble.com's market value. Nevertheless, compared to Amazon.com, Barnes&Noble.com still looks like a follower and not a dot company industry innovator.

- The higher cost burden of inventory, accounts receivable, and fixed assets as per revenue dollar of Barnes & Noble compared to Amazon.com will continue to call into question the bricks-and-mortar-oriented business model of Barnes & Noble. Comparison of Barnes & Noble with its dot company only makes the case stronger.
- The higher market value of Amazon.com compared to Barnes & Noble provides Amazon.com with a competitive advantage in making acquisitions, building high-tech distribution facilities, and recruiting the very best people.

Not Embracing New Business Models

Senior managers of incumbents must step out of their traditional way of thinking when considering a new business model. The dot company demonstrates the most salient aspects of the new business models: virtual stores, sense-and-respond strategies, and rapidly falling transaction costs. However, as the dot company scales, the business model expands to include bricks and mortar to form "clicks and mortar." However, it is important to understand that "clicks and mortar" means more than just the coexistence of traditional bricks-and-mortar stores or distribution centers with the virtual stores. Much more is involved. And new business models driven by IT and the Internet are replacing the old business models in every industry. The scenario captured in the box depicts several dot vertigo symptoms in action.

With an understanding of how networked businesses compete and thrive in an evolving technological world, the next chapter delves deeper into the I-Net by defining its components and its impact on the company. Let's return for a moment to our example of the pilot suffering from vertigo. Pilots are instructed and trained to use their instruments. Despite what the pilot's mind might be telling him or her about the plane's trajectory, the instruments are the only tools that offer unquestionable readings and solutions to a pilot who might be suffering from vertigo. For the manager, the I-Net is this critical navigational instrument.

Key Concepts

- I-nets enable permeability and lightning speed.
- Dot vertigo is caused by severely underestimating or overestimating the Internet.
- IT remains a driver of economic and business performance.