Beyond the Dot.coms

The Economic Promise of the Internet

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1 *Is the Internet a Big Deal?*

IN THE FEW years since its public launching in the mid-1990s, the Internet has proved to be a cheap, convenient, quick, and flexible means of communication for millions of people engaged in all kinds of activities. E-mail has become the standard form of communication within and among companies. Distant relatives and groups of teenage pals keep in touch on the net. Law enforcement officers use it to catch criminals. People with esoteric hobbies find each other. Churches, clubs, and community groups keep in touch with their members on the Internet. The net can be used to do research, check the weather, send invitations, make payments, trade stocks, reserve theater tickets, express opinions, listen to music, and buy or sell just about anything.

Another fast, cheap means of communication is certainly a nice thing to have, but will it fundamentally alter the way the American economy functions? Will average people have a higher stan-

dard of living in a few years because the Internet has made the economy more productive? Or will the Internet prove to be just one more way of sending messages—an alternative to phone or fax or mail—that has little fundamental impact on our well-being?

There is no shortage of strong opinions on the significance of the Internet. In the late 1990s the media were full of rash hyperbole predicting that information technology (IT) in general and the Internet in particular were creating a new economy. In this new economy incomes would grow more rapidly, stock values would soar, and recessions would be mild and infrequent. Confidence in the future of electronic commerce produced an explosion of new companies—the dot.coms—that attracted optimistic investors and turned young entrepreneurs into instant millionaires, at least on paper. Skeptics urged caution, but confidence in the future of the Internet ran high, and the stocks of dot.com companies soared—for a time. Then the bubble burst. Investors lost confidence in dot.coms with vague prospects but no profits. Dot.com stocks plummeted, as did stocks of Internet technology suppliers, and many dot.coms went bankrupt. The skeptics crowed that they had been proved right, and some voices predicted an "Internet depression" with prolonged distress in the world economy caused by the bursting of the Internet bubble in the United States.[1]

In this book we try to steer clear of both the hype and the gloom. Our aim is to present as realistic a picture as possible of the potential impact of the Internet on the U.S. economy over the next few years. We focus primarily on the Internet's potential effect on productivity growth (increase in output per hour

worked), because productivity growth is the principal determinant of the rate at which the nation's standard of living increases.

As we discuss in greater detail in chapter 2, productivity growth is both variable and hard to predict. Productivity grew rapidly (almost 3 percent a year) in the United States from the end of World War II until 1973 and then slowed down unexpectedly. For more than two decades productivity grew at a sluggish pace, at about half its previous rate. Wages and the average standard of living grew slowly as well. Then, just as unexpectedly, in 1995 productivity growth began to accelerate back to something short of its previous rate—and the nation's standard of living accelerated with it.

Beginning in late 2000 the booming economy of the 1990s slowed, and in late 2001 it fell into recession. The big question now is whether the high rate of productivity growth enjoyed during the last half of the 1990s will resume when economic growth picks up again. Was the acceleration in productivity growth a temporary phenomenon associated with the particularly favorable combination of circumstances that prevailed in the second half of the 1990s? Or is there a good chance that the United States has moved to a high trend rate of productivity growth that may be sustained for some years to come? Part of the answer to this question turns on the impact the Internet will have on productivity growth during the next several years.

Because the Internet is so new and its impact on business is just beginning to manifest itself, we decided the best approach to projecting its effect would be to look closely at the nature of Internet use by companies and organizations at the leading edge in

various sectors of the economy. To that end, we brought together a group of experts on various sectors of the economy to form the Brookings Task Force on the Internet. We asked these experts to analyze the productivity gains of the companies and organizations in their sectors that were using the net most intensively and then to estimate the impact on the sectors' productivity growth over the next five years, as these practices spread to other companies and organizations. The results of these studies are summarized in chapter 3. The studies themselves are brought together in a separate volume.[2]

The assignment we gave the sector experts was a daunting one, and their results must be regarded as educated guesses. Nevertheless, the answers were encouraging. The analyses indicate that the impact of the Internet on productivity in most sectors is just beginning but that it is likely to be significant. We believe that the Internet is likely to add roughly 0.25–0.50 percent a year to U.S. productivity growth (above what it otherwise would be) over the next five years. Perhaps surprising to some, virtually all of the impact will be on old economy sectors, including manufacturing, financial services, transportation, and retailing. Some of the impact also will come from cost reductions in noncommercial sectors, including government, health services, and education.

Much of the contribution of the Internet to productivity growth will arise not from new activities, but simply from faster, cheaper handling of information needed in ordinary business transactions, such as ordering, billing, and getting information to employees, suppliers, and customers. Information-intensive sectors, such as financial services, health services, and government

are likely to see their transactions costs cut substantially. Some of the productivity improvement will come from firms using the Internet to manage supply chains more efficiently, improve scheduling, reduce inventories, and bring about more effective collaboration among different business partners. Increasing use of the Internet in a rapidly globalizing economy is likely to increase competition by broadening the reach of the market for both buyers and sellers. Increased competition may enhance productivity and may also shave profit margins. Ironically, the bursting of the Internet stock market bubble in 2000–01 may enhance its productivity-enhancing effects in the old economy as many former dot.commers take their skills to more conventional firms.

Not all of the economic benefits of the Internet will show up in productivity statistics. Consumers will benefit from increased convenience, a wider range of choices, and the opportunity to acquire products customized to their specifications. They may also benefit from fewer mistakes in processing information, which, in the case of improved accuracy of medical records, for example, may even save lives. In chapter 4, we discuss some of these hard-to-quantify benefits and why they are important even if they never enter the measured output of the economy.

How rapidly the potential economic benefits of the Internet are realized depends on three factors: width, depth, and speed. Increasing the width of the market of Internet users requires bridging the "digital divide," the invisible barrier that divides those who are comfortable with using computers and navigating the net from those who are not. Since the nonusers tend to be older, less educated, poorer, and minorities, bringing them into

the Internet marketplace will take sustained and imaginative effort—one that may not fully play out for a generation.

Just because a company is using the net does not mean it has reorganized its operations at a depth necessary to take maximum advantage of the productivity-enhancing potential of the technology. Training employees to think differently and adapting business culture to take advantage of the Internet may well be more challenging than increasing the width of the Internet marketplace. Increasing the speed of the Internet, primarily by accelerating access to broadband connections, will also influence the realization of potential Internet benefits. So will resolution of policy issues involving security, privacy, intellectual property, and antitrust law. These issues are discussed in chapter 5.

In sum, we are optimistic about the future of the net and its effect on individual well-being. We believe that the impact of the Internet on the economy, while not as overwhelming as extreme cyber-enthusiasts claim, is likely to be positive, significant, and sustained. As we discuss in chapter 6, the impact of the Internet reaches well beyond the dot.coms. Indeed, the bursting of the dot.com bubble represents in part the failure of investors to realize that the importance of Internet technology lies primarily in its potential to improve the efficiency of the whole economy, not in new adventures in retail e-commerce. Similarly, while the Internet has certainly not abolished the business cycle or management miscalculation, it may help reduce inventory fluctuations. We see no evidence that the world is doomed to an Internet depression, but rather see far more light than darkness in the years ahead as the Internet revolution proceeds.