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Study Says Computers Give Big Boosts to Productivity

By STEVE LOHR

Money spent on computing technology delivers gains in worker productivity that are three to five times those of other investments, according to a study being published today. But the study also concluded that the information technology industry itself was unlikely to be a big source of new jobs.

The 69-page report is a wide-ranging look at the role that information technology plays in the economy, based on an assessment of existing research and the authors' analysis. The study was done by a year-old research organization, the Information Technology and Innovation Foundation, whose work is supported by companies like I.B.M., Cisco Systems and eBay, as well as by the Communications Workers of America and foundation grants. It will be available at www.itif.org.

The study concludes that the economic significance of information technology is less in the technology itself than in the capacity of computer hardware, software and services to transform other sectors of the economy.

Policy, according to the study, should focus less on incentives to use certain technology products or help particular companies than on encouraging market forces to hasten the pace of technology-aided change in industries.

In an interview, Robert D. Atkinson, the foundation president, cited health care, electric utilities and transportation as sectors that computing technology could benefit.

In health care, for example, the federal government has prodded industry to set standards for sharing patient and treatment information, as a step toward building a national health information network. Medicare and industry groups are moving to require hospitals and clinics to measure and report their performance in meeting safety standards and in patient health goals. To meet those standards, health care providers must increasingly adopt modern computing tools.

"The policy issue is how do you get digital transformation in these other sectors," Mr. Atkinson said. "This is not about tax breaks for I.B.M. or Cisco or other technology companies."

Mr. Atkinson, a former project director at the Congressional Office of Technology Assessment, most recently headed the technology policy program at the Progressive Policy Institute, a centrist Democratic research organization.

The report notes that employment in computing has recovered somewhat, after falling sharply after the dot-com bubble burst in 2000, to account for 3.76 million jobs. Still, it says, the growth potential is limited.

"Going forward," the report states, "it is unlikely that the I.T. industry will be producing jobs gains out of line with its size. In part this is because productivity in the I.T. industry itself has been strong, allowing it to produce more output with fewer workers."

Instead, the report contends, job gains will more and more come from industries that use information technology intelligently, just as in the 19th century employment in the railroad industry leveled off but development of a transportation network led to the rise of national retailers and other new industries.

The services sector, which employs 80 percent of the American work force, is expected to generate most of the new jobs in the future.

The most provocative and controversial parts of the report, “Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution,” are its claim of extraordinary productivity gains from investments in computing technology and its policy focus on industry sectors.

The report cites studies to back its assertion of outsize productivity benefits, but many economists are not convinced. “It could be that investments here pay off more than other investments, but the evidence is still not in, in my view,” said Robert E. Litan, an economist and director of research and policy at the Ewing Marion Kauffman Foundation.

Economists also tend to be skeptical of industry-sector policies because they are reminiscent of industrial policy initiatives in Europe and elsewhere in the postwar years that are widely seen as costly failures. “I am far more sympathetic with promoting investment in general,” Mr. Litan said, “and letting the chips — pun intended — fall where they may.”