

*A Series of Modest Proposals to Build 21<sup>st</sup> Century Skills*



**Tapping the Resources of America's  
Community Colleges:**

*A Modest Proposal to Provide Universal Access to  
Computer Training*

**Robert J. Shapiro**

**July 26, 2007**



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*For an introduction to NDN's Series of Modest Proposals to Build 21<sup>st</sup> Century Skills, please see <http://www.ndn.org/advocacy/globalization/aseriesofmodestproposals.html>*

### **Executive Summary**

It is time that America ensures that all workers have real opportunities to build the skills necessary to operate one of the most important new technologies of our time, computers. Young Americans are increasingly adept at working with computers, but many American workers still lack those skills. Here, we propose a direct, new approach to giving U.S. workers the opportunity to develop those skills, by providing federal government grants to America's community colleges to keep open their computer labs three nights every week, staffed by instructors who will provide basic instruction to any person in the community who walks in and requests it.

The primary way any nation can ensure that its people enjoy broad-based upward mobility is to raise the productivity of its workers and businesses. Achieving that goal, as the United States has done throughout most of its history, depends largely on three critical factors. First, the economy must promote the development and spread of new technologies, new ways of organizing and operating businesses, and other innovations that create new value and new efficiencies. Second, companies must invest in those technologies and in other business and economic innovations, so workers can use them to perform their jobs more productively. Finally, workers, companies, and the government must provide continuing support for all workers to acquire the skills to operate new technologies and perform well in innovative business environments. The program proposed here, fully implemented, could provide that support and enable all American workers to learn basic computer skills at a total annual cost of less than \$125 million a year.

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<sup>1</sup> We gratefully acknowledge the invaluable assistance and insights of Aaron Banks, former Chief Editor at NDN and now Online Campaign Coordinator at the One Campaign.

## America's Productivity Record

America is enjoying an extended period of strong productivity growth. The 1950s and 1960s were a period of historic upward mobility for the United States, largely because productivity marched up at an annual rate of more than 3.2 percent.<sup>2</sup> This progress slowed sharply from the early-1970s to the mid-1990s, with annual gains averaging just 1.5 percent. This critical trend has moved upward again since 1996, averaging 2.8 percent annual gains over the last decade. The sources of these impressive productivity gains are not mysterious. Economists and other experts generally agree that the most important factor in the resurgence of productivity growth has been the spread of information technologies across the U.S. economy.

The Department of Commerce tracked the link between the spread of IT and productivity growth in a series of landmark reports on the "Digital Economy" issued from 1997 to 2003. The 2003 report noted,

The widespread dispersion of productivity growth across major sectors of the economy – largely paralleling the spread of IT – suggests that massive IT investments by U.S. industries are producing positive and probably lasting changes in the nation's economic potential. These conclusions add to recent findings by other economists concerning the widespread and lasting impacts of IT on the revival of U.S. productivity growth.<sup>3</sup>

Those productivity gains are continuing as American businesses adopt and adapt to successive new generations of digital technologies and the rapid expansion of global communications networks. In addition, some parts of the U.S. economy have lagged behind others in adapting to information technologies, including such major sectors as health care, education, construction, and the public sector.<sup>4</sup> As operations in these sectors become increasingly digitally-based and other sectors adopt the latest generation of IT, anyone who hopes to improve his or her economic conditions must possess the capacity and skills to operate in an IT-intensive workplace.

In the latter-1990s, the strong productivity gains of the overall economy were matched by equally strong progress in average wages and salaries, as well as in overall growth, business investment and corporate profits. Over the last five years, however, this pattern has changed. Since 2001, the nation's strong productivity growth has been matched by healthy gains in overall growth and historically-high corporate profits, but most workers have experienced little, if any, real (inflation-adjusted) wage progress. In

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<sup>2</sup> Bureau of Labor Statistics database, <http://www.bls.gov/lpc/home.htm>.

<sup>3</sup> *Digital Economy 2003*, Economics and Statistics Administration, December, 2003.

<sup>4</sup> "Will We Build It and If We Do Will They Come: Is the U.S. Policy Response to the Competitiveness Challenge Adequate to the Task?" Remarks by Robert D. Atkinson at the 2006 American Association for the Advancement of Science Policy Conference, April 21, 2006, Washington, DC.

fact, the combination in recent years of stagnating wages for most Americans and corporate profits that have doubled since 2000 has reduced workers' share of total national income to its lowest level since the early 1930s.<sup>5</sup> The unexpected decoupling of productivity gains and wage growth also has occurred while prices have risen sharply for many middle-class necessities, including health insurance, electricity, gasoline and college tuitions.<sup>6</sup> In the midst of historic productivity progress, life is getting harder for tens of millions of Americans; and the median income of American households fell almost 6 percent from its record high level in 1999.<sup>7</sup>

These developments, especially the critical decoupling of productivity growth and wage gains, reflect pressures generated by economic globalization and technological change – and the failure of our government to respond urgently and creatively. For today's Americans to enjoy the upward mobility experienced in much of the last century, we will have to address some very difficult issues. We urgently need serious reforms to contain the rising costs of health care and energy, because when intense global competition limits the ability of U.S. companies to pass on those rising costs, the result is often depressed wages for ordinary Americans. We also need new approaches, as soon as possible, to ensure that every American worker can have the skills he or she needs to operate with the information technologies that are mainly responsible for our strong productivity gains.

Throughout the last decade of strong productivity gains, both when overall wages rose in the late 1990s and then stalled in the last six years, Americans with the largest gains were those in the top 10 to 20 percent of the workforce, by income, with the most developed information and communications technology-related skills. But computers and online communications technologies have become part of most jobs in the U.S. workforce, from tax accounting to trucking and across manufacturing and service industries. It is already virtually impossible in America to find and hold a higher-paying job without proficiency in computer and communications skills. To help address this challenge for the next generation, the NDN Globalization Initiative proposed recently to provide every American schoolchild a laptop computer and basic computing skills.<sup>8</sup>

Here, we propose a simple and effective way to provide every worker today with an opportunity to build the same skills. Tens of millions of Americans graduated high school or even attended college in the years before computers and the Internet became ubiquitous. Many of them are now entering, or are already in, what should be their most productive and highest-earning years. But without basic information technology

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<sup>5</sup> *The Bush Economic Record*, NDN Globalization Initiative, September 2006.

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*

<sup>8</sup> Alex Ross and Simon Rosenberg, "A Series of Modest Proposals to Build 21<sup>st</sup> Century Skills: A Laptop in Every Backpack," [www.ndn.org/advocacy/globalization/laptoppaper.html](http://www.ndn.org/advocacy/globalization/laptoppaper.html).

skills, many workers are trapped in dead-end jobs, and as non-wired employment becomes obsolete, they face being locked out of the mainstream workforce entirely.

The United States has a cost-effective and ready-to-deploy infrastructure already in place to provide universal access to basic information-technology skills: The computer labs of the nation's vast network of community colleges across the country. A relatively modest investment of federal grants for community colleges can make these on-campus computer facilities into powerful, part-time community resources for workforce training.

### **A Modest Proposal to Provide Universal Access to Computer Skills**

The United States maintains a network of 1,202 accredited community colleges across the country. They are located in major cities and quiet suburbs, and new efforts such as the Ford Foundation's Rural Community College Initiative are extending these critical educational resources to rural Americans as well.<sup>9</sup> Virtually all of these community colleges already have created and staffed computer labs for their students. We should take advantage of these sunk costs to help every working American build critical IT-related job skills.

Since the establishment in 1901 of Joliet Junior College, the first two-year college in the United States, the missions and scale of America's community colleges have often changed in response to the nation's needs. In the 1930s, hundreds of community colleges added workforce training to their existing liberal arts curriculum, to help Americans who had lost their jobs in the Great Depression. Following the Second World War, the system expanded greatly to meet the new demand from the influx of students supported by the GI Bill. Similarly, community colleges expanded their campuses and facilities in the 1960s and 1970s to accommodate the rising demand for higher education from baby boomers.

Community colleges are now going through their next period of reinvention, in which most of them have already placed new emphasis on incorporating technology, computers and advanced communications skills into their curricula. The American Association of Community Colleges has identified background and competency in information technologies as critical to students' success in finding jobs after graduation. In response, computer labs have become a universal feature of community college campuses, and the numbers of students graduating with degrees in IT and IT-related fields have risen.

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<sup>9</sup> American Association of Community Colleges, "Fast Facts" and "Rural Community College Initiative," [www.aacc.nche.edu](http://www.aacc.nche.edu).

The typical community-college computer lab is open and used by students 66.5 hours per-week.<sup>10</sup> These hours are highly concentrated in the daytime of weekdays, when most working people are on their jobs. Under our proposal, the federal government would provide grants to defray the costs of keeping these labs open and staffed by community college instructors an additional 30 hours each week, on evenings and weekends when these labs are generally closed or little-used. During those hours, any person would be able to walk in and receive instruction in computer-related skills, at no cost. We estimate that if two-thirds of community colleges participate, and each provides three instructors for 30 hours a week, 48 weeks a year, Congress could provide every worker in America access to IT training for about \$125 million a year.<sup>11</sup>

Each community college would be able to determine the specific content of the instruction, based on its own assessments of local needs and what people walking in ask for. The most likely areas of instruction would include basic computer operations, word processing, spreadsheet construction and manipulation, Internet research and communication, database entry and operation, and basic graphic design. Gaining these skills can open up new job opportunities for people currently in low-paying fields and help millions of other workers improve their productivity in their current jobs. Most important, this new, 21<sup>st</sup> century partnership between the federal government and America's community colleges can help transform the careers and lives of millions of Americans.

This effort can also build on recent initiatives in places like Arizona to develop community-driven curricula, in which businesses, community colleges and government collaborate on new approaches to worker training. As reported recently by the *Arizona Capital Times*,

An extensive workforce study by the Maricopa County Community Colleges and Salt River Project examined current and future needs of employers and employees, with an eye toward the role of the colleges. In the next two years, the study forecasts a 33 percent increase in technician hires in science, software manufacturing and application development, drafting, design and product development .... At the Arizona Association of Industries, Stuart Banks, president, is working with the Arizona Department of Commerce on a plan to help small and mid-sized manufacturing companies obtain job training funds.<sup>12</sup>

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<sup>10</sup> This estimate is derived from micro-data collected by NDN based on a random sample of community colleges nationwide.

<sup>11</sup> The average wage of computer instructors at junior and four-year colleges is about \$27-\$34/hour. Based on those wages and the assumptions enumerated above, we estimate the total labor costs for the program at roughly \$103 million. We assume 20 to 25 percent additional overhead costs for the use of the facilities and other expenses incurred by participating community colleges.

<sup>12</sup> "Building a Talent Pipeline," *Arizona Capital Times*, November 24, 2006.

In the Arizona project and similar efforts elsewhere, community colleges are planning their curricula to help students prepare for well-paying jobs in their communities. Our proposal would enable community colleges to provide similar benefits for working people in their communities, focusing on the IT skills that are most central to productivity and wage gains in this period.

The United Kingdom also recently launched a large, new private-public initiative in collaboration with the Microsoft Corporation to train 100,000 Scottish workers in basic IT and communications technology skills.<sup>13</sup> Microsoft surveyed 600 employers in 10 European Union countries and found that computer and Internet-related training was needed not just in traditional IT fields, but across the economy.<sup>14</sup> The project, which Microsoft is helping to fund, is part of the broader “Unlimited Potential” campaign spearheaded by Microsoft to provide IT and communications training to 100 million people around the world.<sup>15</sup> That campaign and our proposal share the fundamental insight that expanding training in information and Internet-related technologies is critical to both future productivity growth and wage gains.

The benefits from this new initiative will go far beyond the millions of American workers who will gain access to computer and Internet-related training. The program also will expand demand for IT instruction, raising incomes and creating new jobs for IT instructors. Some of these instructors will come from the ranks of those currently teaching at the community colleges; others may come from the growing numbers of self-employed IT professionals doing free-lance work, or current undergraduate and graduate students with these skills. Improving the IT-related skills of current workers can also enable firms to adopt and adapt to the next generation of information technologies, potentially increasing their efficiency and even their own capacity for innovation.

Most important of all, this initiative can help us deliver on the basic promise of progressive politics, that anyone willing to apply themselves and work hard can improve their lives. In a technologically-driven economy adapting to the pressures of accelerating globalization, progressive government has a responsibility to ensure that everyone has real access to the means to achieve that goal. This initiative can help our government meet that responsibility.

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<sup>13</sup> “Scots to receive IT training,” *Financial Times*, January 30, 2007.

<sup>14</sup> *Ibid.*

<sup>15</sup> “Getting to Work: Computer Skills Help Untapped Labor Force,” *San Jose Mercury News*, March 2, 2007.

### *About the Author*

**Robert J. Shapiro** is the chairman of the NDN Globalization Initiative. He is also chairman and co-founder of Sonecon, LLC, a private firm that advises U.S. and foreign businesses, governments and non-profit organizations on market conditions and economic policy. Dr. Shapiro has advised, among others, U.S. President Bill Clinton and British Prime Minister Tony Blair; private firms including MCI, Inc., New York Life Insurance Co., SLM Corporation, Google, Nordstjernan of Sweden, and Fujitsu of Japan; and non-profit organizations including the American Public Transportation Association, the Education Finance Council, and the U.S. Chamber of Commerce. He is also Senior Fellow of the Progressive Policy Institute (PPI) and a director of the Ax:son-Johnson Foundation in Sweden. From 1997 to 2001, he was Under Secretary of Commerce for Economic Affairs. Prior to that, he was co-founder and Vice President of PPI. Dr. Shapiro also served as the principal economic advisor to Bill Clinton in his 1991-1992 presidential campaign, senior economic advisor to Albert Gore, Jr. and John Kerry in their presidential campaigns, Legislative Director for Senator Daniel P. Moynihan, and Associate Editor of *U.S. News & World Report*. He has been a Fellow of Harvard University, the Brookings Institution and the National Bureau of Economic Research. He holds a Ph.D. from Harvard, as well as degrees from the University of Chicago and the London School of Economics.