Testimony of

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Removing Barriers to the New Economy:
Making Government More Efficient and Fighting Software Piracy

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Good morning, Mr. Chairman. My name is John Warnock, and I am Chairman of the Board and Chief Executive Officer of Adobe Systems Incorporated. I am pleased and honored to have the opportunity to participate in the Joint Economic Committee's third National Summit on High Technology. At the outset, let me commend your leadership in holding this remarkable Summit, and express my thanks for your gracious invitation to provide testimony.

In my remarks today, I would like to talk about ways technology is enabling both companies and government to provide better services at lower cost—in short, to reap the benefits of the "new economy." I would then like to turn briefly to a major potential barrier to the new economy reaching its full flower: software piracy.

The New Economy: Benefits for Private Business…

First, let me discuss what embracing the New Economy means in the private sector context. Technology firms like Adobe have transformed the U.S. economic landscape over the past decade and a half. The numbers for the software industry alone, as indicated in a recent economic study by the Business Software Alliance, are head turning:

- The software sector is growing at 15.4% annually, three times the rate of the rest of the economy;

- The software industry is on track to make a net positive contribution to our country's trade balance of $20 billion this year; and
- By the end of the year, the software industry's share of U.S. GDP will exceed that of any manufacturing sector.

Those of us who started the desktop computer and software revolution almost 20 years ago had no idea what an impact our ideas would have on the economy and society as a whole. In Adobe's case, when my partner Chuck Geschke and I founded the company in 1982, we imagined that, one day and if we were quite successful, we might employ around 40 people working on a single family of products based on our PostScript page-description language. Fortunately for us, our rather modest business plan did not work out the way we had predicted. Instead, Adobe PostScript and PageMaker went on to launch the desktop publishing revolution. Today Adobe offers a broad range of award-winning software solutions for Web and print publishing. Its graphic design, imaging, dynamic media, and authoring tools enable customers to create, publish, and deliver visually rich content across many types of types of media. Adobe is the United States' third-largest personal computer software company, with annual revenues exceeding $1 billion and more than 2,600 employees worldwide.

A key underpinning to Adobe's success has been embracing technology internally to help us work better as a company and free up funds to reinvest in product development. E-mail, to name one example, is central to life at Adobe, where we send and receive more than 250,000 e-mails a day. Last year, we moved over 100 of our most common internal business

forms from paper to electronic Adobe PDF documents. Using the power of Adobe PDF, employees now access forms—like expense reports and travel authorizations—on the Adobe internal Web site. The forms are then completed, approved, and processed completely electronically, resulting in significant increases in efficiency and lower costs to the company. For example, we save more than $50,000 monthly in expense report processing costs alone by using Adobe PDF forms instead of paper. We have also seen a drop of 90% in the volume of flawed forms submitted by employees. Why? ePaper is simply "smarter" than physical paper, since the built-in "intelligence" possible in an Adobe PDF form catches errors. Finally, moving away from paper to PDF-based electronic forms enables us to save on storage costs and to search archival material far more easily.

I have just given two examples of how we use technology to drive internal efficiencies, but it is no exaggeration to say that Adobe—and many of its peers in the technology sector—run electronically. By doing more and more of our work in the virtual world, we save money, we save resources, and we create our products much more efficiently. Adobe's sales exceed $420,000 per employee, a figure unheard of for traditional businesses and possible *only* because of the edge technology has given us. According to a study released by Cisco Systems last year, Internet workers are 65% more productive than their non-Internet counterparts. The bottom line for companies that have embraced e-business: they can afford to pay their people well without fueling inflation. At Adobe, for example, our average annual base compensation in the United States, before incentives and profit sharing, is in excess of $80,000.

…and Benefits for Government Efficiency

I am happy to report that many government agencies are embracing "new economy" methods almost as fervently as they have been adopted in the private sector. Using new technologies and the Internet, Federal agencies have the opportunity to revolutionize how they interact with the public. Adobe PDF, for example, is enabling government entities around the globe to do more with less—to communicate better, at lower cost and with many fewer dead trees involved.

In this country, more than 120 Federal agencies use Adobe Acrobat, which can enable striking cost savings. A tax form that costs the IRS three dollars to mail to a taxpayer costs only a fraction of a *penny* delivered via the World Wide Web in Adobe Acrobat PDF format. Similar convenience and cost savings have been achieved via Adobe PDF with Congressional bills, court filings, passport applications, GAO reports, Postal Service manuals, CDC communications, and most any kind of government communication with the American people. The FAA, using a PDF-based electronic workflow to produce and distribute safety manuals, has cut the time it takes to disseminate critical safety information from months to days.

Getting an effective new medicine to market can improve or save lives, so it is vital that the FDA's new drug evaluations proceed as expeditiously as possible. Before 1997, the FDA used a paper-based approval process that required pharmaceutical companies to

submit—literally—truckloads of documents, as many as 1,000 volumes averaging 300 pages each, in triplicate, for every drug. Three years ago, the FDA launched an electronic New Drug Application system using Adobe Acrobat PDF to streamline the application process. The FDA's move away from physical paper has had tangible benefits for consumers and companies. Pfizer, to cite one example, saved millions of dollars and shortened their overall time to market by using Adobe PDF, rather than a traditional paper-based workflow, during the FDA approval process for Viagra.

Assuming current trends continue, and the government continues to make more and more of its services available electronically, I foresee a future in which public information is liberated, government operates more transparently, and direct contact between citizens and their leaders is easier and more commonplace than ever before. Adobe is certainly proud to be playing a role in helping enable this move towards e-government.

Piracy as a Barrier to the New Economy

You have heard about some of the opportunities the new economy presents for both the public and private sectors; let me now turn to the threat. The software industry faces no more important—or economically damaging—danger than software piracy. Many computer users, who would never consider shoplifting a box of software from the store, do not think twice about copying a program from a friend, or downloading software from the Internet without the permission of the author. Yet all three practices amount to the same thing: stealing.

My distinguished colleague, Carol Bartz, has spoken eloquently to the economic costs of piracy, the high worldwide piracy rate, and the particular threat posed by Internet piracy. I wholeheartedly endorse her comments, and will not repeat her arguments in the interests of time. Suffice it to say that, as a computer scientist by profession and founder of a company that still sells software I had a hand in writing, theft of Adobe products is an issue I take quite personally! I do want to make one additional observation, however.

I am disturbed by a recent trend in news reporting that portrays what I believe is a false trade-off between the future growth of the Internet and copyright and patent protection. For example, the Wall Street Journal earlier this month reported the concerns of Professor Lawrence Lessig of Harvard that overly strong intellectual property protections might have a chilling effect on Internet development. Numerous press accounts on Internet music piracy have quoted college students as saying that trading copyrighted music online is a victimless crime much like speeding—you know it is illegal, but you do it anyway and figure it is no big deal. And, besides, the press stories often go, music sharing software is just "cool." If copyrights have to trampled in the interests of progress, so be it.

To cite one particularly extreme example of this anti-copyright/anti-patent sentiment that seems to be brewing, The *New York Times* reported on May 10 that Internet software products such as Freenet and Gnutella have the potential to enable software piracy on the Internet on a mammoth scale

and without any clear technological choke point for law enforcement or copyright holders to pursue to defend their rights. One of the Freenet programmers interviewed in this article was quoted as saying that people in the near future would soon look back at present-day notions of intellectual property rights "in the same way we look at witch burning today."

In response, I would argue that the Internet and the software industry have flourished not *in spite* of strong intellectual property protections but *because* of these laws. Without strong copyright, patent, and other intellectual property protections, companies like Adobe would never have had the economic incentive to create and support the kind of world-leading software we produce today. It is no accident that many developing countries which lack strong intellectual property protection regimes also lag behind in high-tech development. China, for example, could have a formidable domestic software industry if their government were to undertake legal reforms and increase enforcement to lower the 91% piracy rate. India, by comparison, has a comparably educated population and yet enjoys a thriving domestic software sector. The lower piracy rate in India—61%—and stronger intellectual property protections there deserve at least some of the credit for India's relative success.

Other critics of copyright in the context of the Internet espouse an ideological position that intellectual property should somehow be treated differently from other forms of property and should be free. While everyone is certainly entitled to an opinion, I would submit that this view runs directly counter to the intent of the Framers, who considered copyright and patent so

important that they placed both intellectual property rights in Article I of the Constitution. As a former academic, I certainly respect the choices made by those who develop open-source software or who pursue business models that differs from Adobe's. I believe, however, that customers should have the choice of licensing whatever type of software—commercial, freeware, shareware, open source—that best suits their needs.

As this Committee has heard, both today and at previous High Technology Summits, the intellectual property industries have brought great economic benefits to this country. I am not aware of any evidence that strong intellectual property protection has hindered technological innovation in the era of the Internet. Nor should hypothetical concerns about a "chilling effect" somehow arising from "overly strong" intellectual property laws trump the rights of software authors to legitimate property interests in their creations. This country's copyright and trademark laws have served us well, and government should resist any temptation to weaken or dilute intellectual property protections now. Thank you.