Final Minutes of the President's Information Technology Advisory Committee

February 7, 2001

The twelfth meeting of the President's Information Technology Advisory Committee was called to order by Co-Chairs Raj Reddy and Irving Wladawsky-Berger at 3:10 p.m., February 7, 2001, in Room 1235 of the National Science Foundation (NSF) building, 4201 Wilson Boulevard, Arlington, Virginia. Seventeen Committee members, 32 Federal employees, and 25 private citizens attended the two-day PITAC meeting.

I. Wladawsky-Berger commented that there were positive indications that the PITAC's term would be extended by the new Administration. R. Reddy noted that three PITAC Panel reports would be ready to forward to the President if the Committee approved the final drafts during the meeting.

Briefing on cyber infrastructure

Ruzena Bajcsy, Assistant Director, Directorate of Computer and Information Science and Engineering, National Science Foundation (NSF), discussed her vision for a prototype "cyber infrastructure" for scientific research that would offer terascale capabilities for computation, networking, mass storage, and distributed data-generating instrumentation, or "T-four." Such a high-end infrastructure is greatly needed, Bajcsy said, because of the increasingly central role played by information technologies in research across all the sciences and the growing demand for advanced computing and networking infrastructure in every field, including education and human services. Creating such an infrastructure is not really the job of the individual disciplines; it is the responsibility of computer science and engineering. Bajcsy said

NSF's terascale computing initiative incorporates the "T-four" concept and thus offers a funding model and some components that could be part of such a prototype.

PITAC members discussed how broadband connectivity would be provided, and they suggested that the overall cost of such an infrastructure would be high. Bajcsy responded that she welcomed feedback from PITAC members about how to proceed and said she hoped to build support for the plan over time. A PITAC member complimented her on her work at NSF to advocate funding for infrastructure as a necessary underpinning of agency-supported research.

Briefing on individual security

Joe F. Thompson, chair of the new PITAC Panel on Individual Security, introduced Joan Z. Bernstein, Director of the Bureau of Consumer Protection at the Federal Trade Commission (FTC), and her colleague Joanna Crane.

Bernstein discussed identity theft — the use of another person's personal identifying information to commit fraud or other crimes. The FTC became involved in the issue because the FTC enforces the Truth in Lending Act and the Fair Credit Reporting Act, which governs the conduct of consumer credit-reporting agencies. A 1996 FTC conference to explore the civil and criminal law-enforcement implications of identity theft led in1998 to enactment of the Identity Theft and Assumption Deterrence Act, which made identity theft a Federal crime and gave the FTC lead coordination responsibility (excluding criminal enforcement) in this area. FTC initiatives include consumer education, a data clearinghouse, a complaint Web site, and a hotline (877-IDTHEFT), which now receives some 2,000 calls per week. The FTC is also working on ways to better protect individuals' Social Security number — the most widely used personal identifier.

Joanna Crane discussed data collected by the FTC that are shared with law-enforcement agencies and analyzed to show trends. The FTC has logged more than 42,000 database records in the data-collection project's first 14 months; two thirds represent victims of identity theft; 23 percent of all calls to FTC help lines concern identity theft. The Internet is less often cited as the possible source of identity information than FTC expected, Crane said; most

common is loss or theft of a wallet.

In response to a question about the low level of Internet involvement, Crane emphasized that 80 percent of victims reporting to the FTC do not know how their information was stolen. Bernstein added that an increasing number of FTC fraud cases over all involve use of the Internet. PITAC members discussed other aspects of identity theft trends and the need for greater awareness of the problem.

R. Reddy introduced John Ryan, vice president and associate general counsel of America Online, Inc.

Ryan discussed identity theft from the perspective of a major online service provider. He noted that the 1998 law specifically recognizes unique online identifiers, such as passwords, ID numbers, and IP addresses, as covered. He cited AOL policies designed to educate its members and protect them from fraud, and said the company also has a 24/7 office that responds to inquiries from legal authorities about possible illegal online activity. However, because AOL customer IP addresses are dynamically issued each time a customer logs on, and address records are kept for only 90 days, tracking such activity is difficult. AOL maintains only member names, addresses, and phone numbers on an ongoing basis. Key challenges in identify theft are lack of knowledge among local law enforcement personnel and jurisdictional issues in cases with national and international ramifications.

PITAC members asked about the legal liability of a person whose stolen identity is used for illegal activity. Ryan said there is no criminal liability, absent intent, but possibly civil liability through failure to take reasonable safeguard measures. He reiterated that stealing ID information may be larceny, but it is not identity theft under the 1998 law unless the information is used for illegal activity.

Report of the Panel on Individual Security

Panel Chair J. Thompson reported on the group's initial steps, including its first meeting held earlier in the day. The chair attended four recent Federal conferences on identity theft. Information technology is very much involved in this problem: There is now a disconnect between identity of an actual person and identity as an abstraction in databases that can be bought and sold. Information

technology amplifies the effect of ID theft — for example, enabling a person with someone else's Social Security number to obtain a credit card and make purchases on the Internet before the fraud is discovered. Thompson detailed other ways that information technology-aided processes provide growing opportunities for criminal activity based on ID theft. The always-connected feature of broadband access will only increase risks to individual security; providers will have to set up security measures. The Panel also plans to examine two related issues — individual privacy and secure communication — and will hold briefings and a workshop during its study. The Panel hopes to complete its work by the September 2001 PITAC meeting.

PITAC members discussed technical and ethical difficulties in maintaining both security and privacy.

Report of the Panel on Digital Libraries

Panel Chair David C. Nagel summarized the findings and recommendations of the Panel's report. The final draft for PITAC approval will be distributed at the February 8 session of the PITAC meeting.

PITAC members discussed the Federal leadership role in implementing the Panel's recommendations.

Public comments

There were no public comments.

Adjournment of session

Co-Chair R. Reddy adjourned the session, noting that the PITAC would reconvene at 8 a.m. February 8.

The full transcript of the PITAC meeting is available at the National Coordination Office for Information Technology Research and Development, 4201 Wilson Boulevard, Suite II-405, Arlington, Virginia 22230. Tel.: (703) 292-4873. E-mail: nco@nitrd.gov

Final Minutes of the

President's Information Technology Advisory Committee

February 8, 2001

The twelfth meeting of the President's Information Technology Advisory Committee reconvened and was called to order by Co-Chairs Raj Reddy and Irving Wladawsky-Berger at 8:10 a.m., February 8, 2001, in Room 1235 of the National Science Foundation (NSF) building, 4201 Wilson Boulevard, Arlington, Virginia.

R. Reddy commended Yolanda Comedy, who has resigned as PITAC liaison, for her many contributions to the operations of the Committee over the last three years and presented her with a letter of commendation on behalf of the members.

Comments by Office of Science and Technology Policy representative

Paul Domich, OSTP, reported that the Administration had not yet selected a Science Advisor to the President. As a result, White House policy guidance is not yet available for PITAC. Domich noted that renewal of the Executive Order authorizing the PITAC had received strong bipartisan support from Congress members and trade associations, which he called a statement about the quality of PITAC's work and leadership.

Report of the Digital Divide Panel

Ching-chih Chen, co-chair of the Panel with John P. Miller, discussed the recommendations to PITAC resulting from the June 2000 workshop for smaller colleges and universities co-sponsored by the Panel and Educause with support from NSF. The recommendations, which focus on steps to improve advanced networking capabilities for the 94 percent of higher education institutions that currently do not have access to high-speed networks, are contained in the Educause report "Avoiding the Digital Divide for Smaller Institutions of Higher Education."

PITAC members discussed ways the Committee might respond to the recommendations.

Report of the Panel on Transforming Learning

Panel member Eric A. Benhamou presented the Panel's report in the absence of the co-chairs. He noted that the Panel's findings and recommendations align well with many elements of the President's new K-12 education initiative. He highlighted the Panel's decision to look at the whole continuum of education and training, on the grounds that leveraging IT capabilities will be beneficial across the board, even though settings and content will differ. This perspective also informed the Panel's overarching recommendation that integration of information technology in education and training be made a national priority. Benhamou described the Panel's second recommendation as its boldest and potentially most influential: The Government should establish focused government/industry/foundation partnerships to aggressively pursue the IT research program it will take to develop advanced education and training applications.

In response to questions, Benhamou discussed the Panel's thinking on the funding structure for the proposed research partnerships. PITAC members also discussed the roles of states and local systems in education decision-making and the importance of cognition-based research on IT applications in learning. I. Wladawsky-Berger asked members to relay specific editorial comments to the Panel in writing for incorporation in the final report draft.

Report of the Panel on Transforming Health Care

Edward H. Shortliffe, Panel co-chair with Sherrilyne S. Fuller, discussed the Panel's draft report on transforming health care. After fine-tuning the report in recent months, the Panel now views its findings and recommendations as final, rather than an interim version. Key findings are that there is no accepted national vision on the role of IT in health care; there is not yet a critical mass of researchers and practitioners working at the crossroads of biomedicine and computing; and the biomedical community, including Federal agencies, continues to rely on IT capabilities produced by other technical areas. The Panel recommends: pilot projects and Enabling Technology centers to extend the uses of IT in clinical and research settings; establishing a scalable national computing infrastructure for research; legislation assuring sound management of personal health information; programs to increase

the number of health professionals skilled in IT; and that the Department of Health and Human Services (DHHS) lead development of an IT vision for health care and the research necessary to realize it, in part through appointment of a senior IT leader in DHHS.

PITAC members commented on the difficulties of infusing IT in the biomedical research culture and of establishing partnerships between the National Institutes of Health and NSF that could encourage change. Members suggested a few wording changes in the report.

Report of the Panel on International Issues

C. Chen, co-chair with Vinton Cerf, discussed the activities of the Panel to date. Because the scope of international IT issues is so vast, the Panel had focused on issues in infrastructure for education and training and was planning to hold workshops. But in recent discussions with the PITAC co-chairs, it was decided to put a hold on activities to see what guidance on priorities emerges from the new Administration.

Report of the Panel on Wireless Technology

Panel Chair Steven D. Dorfman described the shift in his thinking from skeptical to positive about what a PITAC panel on wireless issues could contribute. There are so many rapidly emerging issues about wireless technology that a PITAC report defining what research requirements are not being fulfilled in the current environment would be useful.

Larry Smarr commented that industry is very active in this area, but because the field is so new the work lacks the traditional underpinnings of prior university and government research and documentation. At the same time, over the next few years the pressures on the Internet from billions of wireless devices with embedded processors will demand vast new computer science research on middleware. A major issue is the security vulnerabilities of wireless.

Discussion of proposed update of PITAC 1999 report

PITAC members discussed Federal IT R&D program activities since 1999 from the perspective of the four research priorities

recommended in the PITAC report and the PITAC committees that developed the sections on priorities.

Software — James N. Gray reported on the ways the report's recommended focus on development methods, computer interface, information management, and advanced applications has been picked up by the IT R&D agencies in new research. The PITAC recommendations have held up well as guidelines. An updated software committee report can be completed by September 2001.

Scalable information infrastructure — Leslie Vadasz reported that agencies have pursued the PITAC agenda, from large-scale systems to the fundamental physics of advanced networking. It is troubling that the funding in these areas in FY 2001 is only three-quarters of what PITAC recommended. On the other hand, the available funding appears to be managed along the lines of the report's recommendations. Key areas for the committee to look into are network security research and legal issues affecting a borderless technology in a world of borders.

Members discussed other new developments such as peer-to-peer computing, and network scalability demands far beyond what was imagined in 1999.

High-end computing — Steven J. Wallach reported that agency funding has substantially increased for innovative computing technologies and architectures, software to improve high-end performance, and acquisition of a high-end system for science research. PITAC's other priority — drive research toward sustained petaflops-level performance — requires integration of all capabilities, but the growth of distributed computing has changed the framework for integration. Wallach said his view is that a research initiative to build a prototype terascale distributed system is needed.

An extensive discussion ensued as to the status of research in high-performance architectures, the possible designs of future high-end systems, and the degree to which developments and emerging issues since the 1999 report call for new comment by the PITAC.

Social, economic, and workforce issues — J. Miller reported that the IT R&D program agencies responded to the 1999 report by expanding the research agenda and changing the name of the relevant Program Component Area (PCA) to Social, Economic, and

Workforce Implications of IT and IT Workforce Development (SEW), now part of the formal IT R&D budget crosscut. Miller complimented NSF program director Suzanne Iacono for her leadership as chair of the SEW Coordinating Group.

PITAC members discussed whether such SEW topics as intellectual property and privacy should be revisited. E. Benhamou said he was concerned that PITAC's work stay within the Committee's technical charter and not expand into policy issues.

Report of the Panel on National Security

Robert E. Kahn, Panel co-chair with Ken Kennedy, discussed the preliminary steps of the new Panel. The Panel has held several briefings with Federal officials and plans ongoing interactions with government and private sector representatives. It is looking beyond current information assurance activities to examine long-term IT research issues and opportunities, and will view national security in a national, not just a military, context. The Panel hopes to develop realistic scenarios of potential major security failures, including their international ramifications, and to propose methods and systems for both proactive and defensive protections.

Presentation on report of U.S. Commission on National Security/21st Century

*General Charles Boyd, U.S. Air Force, retired, and Executive Director of the U.S. Commission on National Security/21st Century,*discussed the three reports of the 14-member nonpartisan commission chaired by former Senators Gary Hart and Warren B. Rudman. The charge to the commission, established in 1998, was to characterize the world of the 21st century, propose a U.S. national security strategy for that world, and evaluate the ability of current national security architectures to respond to 21st century threats. Key findings were that migration of people is a leading world issue in the new century, and resentment against the U.S. will be a top national security issue. The commission concluded that security for the U.S. "homeland" should be the highest priority, reflected in establishment of an agency focused on security within U.S. borders. The commission's reports are available at http://www.nssg.gov/.

PITAC members discussed education and IT workforce issues related to the commission's findings. I. Wladasky-Berger opened the

discussion for public comment.

An unidentified participant described the career path of a young man from India who received his Ph.D. in computer science at the University of Maryland. This person went to work for Adobe but was bored with his job. Because he was so capable, his boss asked what it would take to keep him. The young man said he would like to start a software development center in India. So Adobe sent him to India, where he founded Adobe Media Ltd., today a million-dollar business. So it is not just a case of the U.S. losing people, the speaker said; it is a different kind of world today.

Sue Fratkin of the Coalition for Academic Scientific Computation commented, in response to General Boyd's remarks on the complexity of Congressional oversight processes, that she had found in a recent study she did that 43 Congressional committees have oversight over telecommunications and technology issues.

Public comments

There were no public comments.

Adjournment

R. Reddy and I. Wladawsky-Berger adjourned the meeting at 12:45 p.m.

The full transcript of the PITAC meeting is available at the National Coordination Office for Information Technology Research and Development, 4201 Wilson Boulevard, Suite II-405, Arlington, Virginia 22230. Tel.: (703) 292-4873. E-mail: nco@nitrd.gov

Attendees

February 8-9, 2001

PITAC Members Attending

Raj Reddy, Co-Chair	Carnegie-Mellon University
Irving Wladawsky-Berger, Co-	International Business Machines

Chair	Corporation
Eric A. Benhamou	3Com Corporation
Ching-chih Chen	Simmons College
Steven D. Dorfman	Hughes Electronics Corporation
Sherrilynne S. Fuller	University of Washington Health Science center
James N. Gray	Microsoft Research
W. Daniel Hillis	Applied Minds, Inc.
Robert E. Kahn	Corporation for National Research Initiatives
Ken Kennedy	center for Research on Parallel Computation, Rice University
John P. Miller	Montana State University
David C. Nagel	AT&T Labs
Edward H. Shortliffe	College of Physicians and Surgeons, Columbia University
Larry Smarr	California Institute for Telecommunications
Joe F. Thompson	and Information Technology
Leslie Vadasz	Mississippi State University
Steven J. Wallach	Intel Corporation
	centerPoint Ventures

Government Attendees

Kamal Abdali, NSF
David Bernholz, NCO/ITRD
Joanna Crane, FTC
Lawrence Daly, DOC
Frederica Darema, NSF
Paul Domich, OSTP
W.R. Franklin, NSF
Tom Gallitano, NSF
Helen Gigley, NCO/ITRD
Helen Gill, NSF/DARPA
Norman Glick, NSA
Dan Hitchcock, DOE
Charles Holland, OSD
Sally Howe, NCO/ITRD
Suzanne Iacono, NSF
Carey M. Johnson, DOE

Gary Koob, DARPA
A.B. Maddox, NSF
Steve Mahaney, NSF
Lynette Millett, NRC
José Muñoz, DOE
Kimberly Nelson, U.S. Senate
C.E. Oliver, DOE
Walter M. Polansky, DOE
Jack Schofield, NAVAIR
Lori Shapiro, OSTP
Robert Sloan, NSF
Carl Smith, NSF
Gary Strong, NSF
Susan Turnbull, GSA
William Turnbull, NOAA
Grant Wagner, NSA

NCO Contractors

Yolanda L. Comedy
Ed Garcia
Vicki L. Harris
Larry Janicki
Martha Matzke
Virginia Moore
Betty S. McDonough
Grant Miller
Ann Rutherford
Frank Sledge
Alan Tellington
Carolyn Van Damme
Diane Vellines
Robert I. Winner

Private Citizens

Vince Adams II, MDB Inc.
Fred Adler, RCI, Ltd.
Dan van Belleghem, NCSA
C. Boyd, NSSG
Diane Frank, Federal Computer Week
Sue Fratkin, Coalition for Academic Scientific Computation
Kevin Gamble, ADEC

Dean G. Georopoulos, Kosmos
Michael Herve, Embassy of France
Gill Hope, hopeandcare Int.
Laveen Kamal, UMD/LNK
Mark Luker, EDUCAUSE
Neil Martonora, Federal Technology Report
Matt Mathis, PSC
Laurant de Mercey, Embassy of France
James Moore, Mitre
Scott Nance, New Technology Week
Janet Paley, ADEC
Paul Byron Pattak, NSSG
Randy Ross, ADEC
Maureen Suhn, Technology Daily
Dreama Tave, 3Com
Ron Teixeira, IA
Dan Verton, Computerworld
Carmen Whitson, Strategic Analysis, Inc.

Minutes prepared by Martha K. Matzke.

May 8, 2001

Cita Furlani

Director, National Coordination Office for Information Technology Research and Development

Approved:

May 8, 2001

Raj Reddy

Co-Chair, President's Information Technology Advisory Committee

May 8, 2001

Irving Wladawawsky-Berger

Co-Chair, President's Information Technology Advisory Committee