Draft Minutes of the International Issues Panel
President's Information Technology Advisory Committee

September 19, 2000

An open meeting of the International Issues Panel 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., September 19, 2000, in Room 375 of the National Science Foundation (NSF) building, 4201 Wilson Boulevard, Arlington, Virginia.

Remarks of the Science Advisor to the President

Dr. Neal Lane, Science Advisor to the President and Director of the White House Office of Science and Technology Policy, thanked the members of PITAC for their service to the country in providing the Administration with independent perspectives and advice on information technology (IT) issues. The Committee has had a tremendous impact through its influential 1999 report and follow-up activities -- in educating policymakers about the implications of IT and helping build bipartisan support in Congress for IT research and development (R&D).

The Administration recognizes that the implications and challenges of IT are global in scope in particular, the challenges of developing science and technology capacity in poorer nations abroad as well as across the diversity of U.S. communities. Discussions at a recent meeting of the President's Committee of Advisors on Science and Technology (PCAST) on global science and technology capacity raised several main points: 1) IT is the underlying infrastructure needed in all science fields, including medicine, health, agriculture, engineering, biotechnology, aerospace, and many others, so IT will be central to global development in the sciences. 2) Partnerships of all kinds will be the key to success in developing science capacity worldwide. And 3) increased IT R&D funding will be needed to develop the new technologies and capacity-building approaches here and abroad.

Dr. Lane discussed the current status of appropriations bills affecting the IT R&D Programs. He described the results to date as disappointing but said the Administration would continue to press for the funding levels requested in the President's FY 2001 budget.

Discussion of White House international IT initiatives

Dr. Lane introduced Elizabeth Echols and Audrey Choi, who lead Administration programs in IT for international economic development.

Elizabeth Echols, Executive Director, White House Electronic Commerce Working Group, discussed Administration activities related to the summer 2000 G-8 Economic Summit in Okinawa, Japan. Echols said the foundation of the Administration's work in e-commerce domestically and internationally is five principles for a Global Information Infrastructure (GII) articulated in 1994 by Vice President Gore: private investment, promotion of competition, open access, universal service, and a flexible regulatory environment. The Telecommunications Act of 1996, the Administration e-commerce policy announced in 1997, the World Trade Organization agreement in 1998, and e-commerce agreements between the U.S. and the European Union and 12 other countries each reflect aspects of this framework of principles. Despite differing perspectives in the G-8 group, participants produced an Okinawa IT Charter the first G-8 agreement on IT issues that embodied many of the Administration's fundamental principles.

Audrey Choi, Chief of Staff, Council of Economic Advisors, and Director, White House Internet for Economic Development Initiative, described the Administration's longer-term interest in expanding the reach of information technology in support of global economic development. Noting that less than 5 percent of computers connected to the Internet are located in developing countries, Choi said the Administration has developed partnerships with 20 of the poorest nations that expressed an interest in building IT

infrastructures. The countries work cooperatively to share best practices and learn from their partners. The Administration supports these efforts by encouraging development of appropriate public policy, infrastructure deployment, IT training, and a focus on key applications areas such as health care and education. Choi said the international digital divide also poses important IT research challenges, including wireless technologies, language translation capabilities, and easy-to-use devices and software.

Presentation on micro-economics in developing nations

Dr. Lane introduced Professor of Economics Muhammad Yunus, founder of the Grameen Bank in Bangladesh and internationally known expert on poverty and economic development.

Professor Yunus discussed how he came to establish his Bangladesh micro-credit institution, which has made loans totaling $2.6 billion to more than 2.3 million people in the last 20 years and still averages only $200 per loan, with a 95 percent repayment rate. He how that experience led him into broader involvement in international efforts to alleviate poverty, advance education, and develop micro-economic infrastructures in emerging countries. Professor Yunus then described his efforts to apply the principles of micro-economics to bringing IT into poor communities, starting with establishment of Grameen Phone an offshoot of the bank that finances cell phones for villagers, who then develop a service business out of making and receiving phone calls. Another Grameen company is setting up solar-powered Internet kiosks and community computer sites. To broaden such initiatives into an international framework, Professor Yunus said he proposed to create an "International center for Information Technology to Eliminate Global Poverty."

PITAC members asked the speaker to say more about his vision for the proposed IT center about poverty and living standards in emerging nations, about the sociological

impacts of introducing new economic systems, and about the basis for his emphasis on women's roles in economic development.

Irving Wladawsky-Berger thanked all of the speakers for their informative remarks, and Dr. Lane thanked the PITAC for holding the meeting.

The Committee meeting was recessed at 5:10 p.m.

The full transcript of this PITAC session is available at the National Coordination Office for Information Technology Research and Development, 4121 Wilson Boulevard, Suite 405-II, Arlington, Va. 22230. Tel.: (703) 292-4873.

Draft Minutes of the
President's Information Technology Advisory Committee
September 20, 2000

The eleventh meeting of the President's Information Technology Advisory Committee was called to order by Co-Chairs Raj Reddy and Irving Wladawsky-Berger at 8:15 a.m., September 20, 2000, in Room 1235 of the National Science Foundation (NSF) building, 4201 Wilson Boulevard, Arlington, Virginia. Twenty-two Committee members, 25 Federal employees, and 12 private citizens attended the two-day PITAC meeting, including the open session of the International Issues Panel.

I. Wladawsky-Berger announced that Bill Joy, co-founder and Vice President for Research at Sun Microsystems, had resigned from the PITAC because of other commitments and would be greatly missed. President Clinton has sent a letter to Joy thanking him for his service and for all his contributions to the work of the Committee. There are several vacancies on the PITAC. Wladawsky-Berger asked members to send suggestions for new members to Lori Perine at the White House Office of Science and Technology Policy, OSTP.

Discussion by Administration representative

Lori Perine, OSTP, discussed current Presidential activities involving the digital divide, universal IT design for people with disabilities, and technologies for successful aging. A White House workshop on "eldertech" issues is scheduled for October.

With regard to the PITAC's interest in international IT issues, Perine noted that the U.S. State Department had just appointed a high-level advisor to the Secretary of State for technology issues. She said that, whatever new Administration is elected in November, there is likely to be continuing interest in global IT issues.

On the continuation of PITAC in a new Administration, Perine said that, to the best of OSTP's knowledge, the Committee would continue, given the bipartisan support for PITAC in the Congress and among Congressional staff. Committee members noted that such a group was mandated by Congress under the High Performance Computing and Communications Act of 1991 and the Next Generation Internet Act of 1997.

Report of the Panel on Digital Libraries

Panel Chair D. Nagel described the Panel's research process, including briefings by representatives of digital libraries projects and discussions of key structural issues. The Panel found that: the full potential of digital libraries is far from being realized; the Federal government has exercised early leadership with modest investments in this field and should do much more; intellectual property issues are beginning to seriously impact creation of and access to digital information; and libraries, museums, and other digital archives face significant operational and technical challenges. The Panel recommends that the Federal government support expanded digital libraries research; provide the policy and resources to make all Federal information persistently available online; establish large-scale testbeds; and play a leadership role in evolving policy

to deal with intellectual property in the digital age. Nagel said the Panel planned to forward its draft report to the full Committee at the next PITAC meeting in February 2001.

Panel members V. Cerf and J. Gray made several observations about the challenges of digital libraries issues, and an extensive discussion ensued.

Report of the Panel on Transforming Learning

S. Graham, co-chair of the Panel with A. Viterbi, reported on the Panel's activities to date, including a two-day workshop and site visits in San Diego, held in cooperation with the San Diego Science and Technology Council and the San Diego Supercomputer center. In its findings, the Panel concluded that: one of the Nation's most important goals for the information age is lifelong education and training for all citizens; IT has the potential to provide simultaneously the benefits of tutoring, group interaction, and access to high-quality facilities and experiences; the role of the teacher is changing but teacher training in uses of technology is insufficient and education R&D is dramatically underfunded; IT has been successfully and cost-effectively applied in industrial and military training; Web-based learning technologies are being applied at the grassroots level but significant barriers to more rapid diffusion remain; and research demonstrates the potential for fundamental educational transformation but the breadth and scale of needed research and diffusion efforts will require unprecedented partnerships among government, industry, foundations, universities, and schools.

The Panel recommends making effective integration of IT in education and training a national priority; establishing a major IT in education and training research initiative, including research in IT technologies and applications for education; establishing focused government-university-industry-foundation partnerships to pursue the research agenda; developing and/or disseminating methods to enable all teachers and trainers to use IT effectively; and defining and promoting a set of IT standards (languages, protocols,

interfaces, etc.) to facilitate wide adoption of IT for learning.

Committee members discussed the need for the report to document evidence of the efficacy of technologies for learning and to present the negative view of educational technology with comment as to why the Panel feels differently. They also commented on the need to address the fact that students in other countries that do not rely on educational technology nonetheless fare better on standardized tests than U.S. students. I. Wladawsky-Berger asked whether the full PITAC supported the Panel's overarching recommendation to make integration of IT in education a national priority. No members dissented.

Report of the Panel on Transforming Health Care

E. Shortliffe, co-chair of the Panel with S. Fuller, reported that the Panel had completed most of its data collection and interviews but was not yet ready to unveil its findings or recommendations. Shortliffe reviewed the interview process, noting the number and diversity of Federal officials with responsibilities related to health care with whom the Panel spoke. Observations of the Panel are that: IT can facilitate transformations in health care that will benefit all citizens; such transformations are essential to assure a healthy populace with equitable access to health care; biomedicine can help motivate fundamental IT research that is applicable not only to medical research but to many fields; and the biomedical and health care communities do not yet recognize or accept the value of IT research. There is great confusion in the biomedical community, Shortliffe said, about how IT research relates to the domain application; the community views IT research issues as relevant only when they apply directly to a biomedical application and does not understand the concept of enabling technologies that support many applications. A key consequence of this lack of understanding is that there is no national consensus on the role of IT in biomedicine, no coordination among Federal health care agencies on uses of IT, and no agreement on the need for a national investment in IT infrastructure for

medical research and practice.

L. Vadasz commented that there was a sense of a desire for centralization in these observations. Shortliffee responded that the Panel was not recommending that, but rather education, guidance, and some Government leadership in IT integration. Committee members discussed the difficulties in developing Federal IT leadership and coordination in biomedical research and health care. Members also discussed the possibility of issuing the Panel's report as an interim report to solicit comments from the Federal health care community.

Report of the Sub-Panel on the Digital Divide: Smaller Colleges and Universities

Sub-Panel Chair C. Chen reported on a June 5-6 workshop in Arlington, Va., co-sponsored by the Panel and the higher education organization EDUCAUSE with funding from NSF. The meeting, attended by more than 40 officials of smaller institutions, aired many and diverse problems of these institutions vis a vis advanced networking. None have access to Internet2 or other high-speed networks, even though these smaller institutions educate most of the Nation's postsecondary students.

The Panel recommends: Providing immediate incentives to enable smaller institutions with innovative research projects to gain access to advanced networks, and expanding access to a broader spectrum of institutions by offering infrastructure funding opportunities for projects that require advanced network technologies for innovative educational purposes.

Report of the Panel on International Issues

C. Chen, co-chair of the Panel with D. Dorman, noted that the IT document approved by the G-8 nations in Okinawa has as its third main priority for action the focus of the PITAC Panel: Building human capacity. She said the Panel was continuing to identify existing efforts and looking for

outside experts interested in participating in the Panel. Recognizing that offering infrastructure advice to disparate countries would not be effective, the Panel is focusing on the idea of human capacity-building in education and training for IT use.

Presentation on IT and the humanities

William R. Ferris, Chairman of the National Endowment for the Humanities (NEH), showed a short video about the NEH and then discussed the impacts of information technology on the humanities. He noted that the NEH has supported development of more than 300 Web sites. Examples include Oyez, Oyez, Oyez, a Northwestern University multimedia site containing the full text of all U.S. Supreme Court rulings, and EdSitement, a K-12 humanities portal co-sponsored by MCI Worldcom and the Council of Great City Schools. The NEH is also involved in efforts to standardize archival formats to achieve greater interoperability and to ensure long-term preservation of digital archives. The NEH supports interagency coordination and cooperation in this work as the only effective means of ensuring the future of digital libraries.

Questions and discussion focused on the issues surrounding intellectual property rights on the Web, the problem of quantity vs. quality in online information, and the lack of national focus on the enormous potential for spreading learning through digital humanities archives.

Discussion of PITAC next steps

Over the next year, the Committee will complete work on the Transforming Health Care, Digital Libraries, and International Issues reports and, if asked to do so by the Administration, will conduct a review of the FY 2001 IT R&D research program. PITAC members also discussed a list of member suggestions for possible new research projects that the Committee might undertake. After discussion, the Committee agreed to take on two new areas for Panel studies -- national security issues and individual

security issues -- and to conduct a preliminary review of a third area -- issues in wireless technologies -- to evaluate whether a PITAC study could make a useful contribution.

The PITAC also agreed to undertake a comprehensive update of its February 1999 report, on the status of IT R&D to take account of new technology advances that have occurred in the three to four years since the original study was conducted, and to assess the progress to date on implementing the report's recommendations. E. Benhamou commented that international perspectives have not been central to most PITAC deliberations but maybe should be factored into the report update and forthcoming PITAC studies.

L. Perine asked PITAC members to send any suggestions they have for new additions to the Committee to her at OSTP, indicating the individual's areas of IT expertise.

Public comments

There were no public comments.

Adjournment

R. Reddy and I. Wladawsky-Berger adjourned the meeting at 2:55 p.m.

The full transcript of the PITAC meeting is available at the National Coordination Office for Information Technology Research and Development, 4121 Wilson Boulevard, Suite 405-II, Arlington, Va. 22230. Tel.: (703) 292-4873.

Attendees
September 19-20, 2000

President's Information Technology Advisory Committee
Members Attending

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

Berger, Co-Chair	Corporation
Eric A. Benhamou	3Com Corporation
Vinton Cerf	MCI WorldCom
Ching-chih Chen	Simmons College
David M. Cooper	Lawrence Livermore National
Steven D. Dorfman	Laboratory
Robert H. Ewald	Hughes Electronics Corporation
Sherrilynne S. Fuller	E-Stamp Corporation
	University of Washington Health
Hector Garcia-Molina	Science center
Susan L. Graham	Stanford University
James N. Gray	University of California, Berkeley
Robert E. Kahn	Microsoft Research
	Corporation for National Research
Ken Kennedy	Initiatives
	center for Research on Parallel
John P. Miller	Computation, Rice University
David C. Nagel	Montana State University
Edward H. Shortliffe	AT&T Labs
Larry Smarr	Stanford University School of
	Medicine
	National center for Supercomputing
	Applications &
Joe F. Thompson	University of Illinois at
Leslie Vadasz	Urbana-Champaign
Andrew J. Viterbi	Mississippi State University
Steven J. Wallach	Intel Corporation Andrew
	QUALCOMM Incorporated
	centerPoint Ventures

Government Attendees

Aubrey Bush NSF	NSF
Suzanne Camacho	USAID
USAID	NSF
Frederica Darema NSF	OSTP
Paul Domich OSTP	NSF
Eduardo Feller NSF	NASA
Ken Freeman NASA	NSA
Norman Glick NSA	NSF
Anne Hogan NSF	NCO/CIC

Sally Howe NCO/CIC	NSF
Suzi Iacono NSF	WH
Ron Keohane WH	OSTP
Neal Lane OSTP	NSF
Frances Li NSF	FAA
Ernie Lucier FAA	DOE
Paul Messina DOE	State
Jeff Moon State	USAID
Tim O'Conner USAID	OSTP
Lori Perine OSTP	NSF
Rita Rodriguez NSF	NIST
Bruce Rosen NIST	DARPA
Shankar Sastry	WH
DARPA	NSF
Clint Schaff WH	NOAA
Mark Suskin NSF	NSA
William Turnbull	
NOAA	
Grant Wagner NSA	

NCO Contractors

Yolanda L. Comedy
Vicki L. Harris
Larry Janicki
Martha Matzke
Betty S. McDonough
Laurie B. Mitchell
Terry Ponick
Ann Rutherford
Carolyn Van Damme
Robert I. Winner

Private Citizens

Fred Adler	RCI, Ltd.
Sue Fratkin	Coalition for Academic Scientific
David Hornsky	Computation
David Johnson	Canadian Embassy
Marvin Lawley	FBPCS

Paul Love	HPCA
Jacki Lippman	Internet 2
William New	Grameen Foundation
Betsy Reveel	Technology Daily
Wayne Sibley	UNF
Brooke Stearns	Calvert
Muhammad Yunus	Grameen Foundation Grameen Bank

Minutes prepared by Martha K. Matzke

February 7, 2001

Cita Furlani
Director, National Coordination Office for
Information Technology Research and Development

Approved:

February 7, 2001

Raj Reddy
Co-Chair, President's Information Technology
Advisory Committee

February 7, 2001

Irving Wladawawsky-Berger
Co-Chair, President's Information Technology
Advisory Committee