[ James P. Chandler III, William L Tafoya. (Nov. 29-30, 2001). International Cryptography Institute 2001. National Intellectual Property Law Institute (NIPLI), Information System Security& Education Center (ISSE). Source: An Invitee's archives, Michael McKibben, Leader Technologies. ]

[ See important historical notes on page 2 following, and other IBM Eclipse Foundation conspiracy evidence to steal the social networking inventions of Leader Technologies, Inc. appended.]

# International Cryptography Institute 2001

"Global Challenges, Trends & Best Practices in Cryptography"

**Thursday – Friday**
**November 29 – 30, 2001**

presented at:
The NIPLI Conference Center
Third Floor
1815 Pennsylvania Ave., NW
Washington, D.C. 20006
202.789.0234
www.nipli.org

[ The law offices of James P. Chanlder III, The Chandler Law Firm Chartered. Note: Chanlder invited Michael T. McKibben, Leader Technologies, Inc. as a guest (and the archive source of this file)... on the very day Chandler and IBM Eclipse Foundation, Chandler's 'other' client were busy stealing McKibben social networking inventions. ]

sponsored by the:
Information System Security & Education Center

of the
National Intellectual Property Law Institute

# ICI-2001
# "Global Challenges, Trends & Best Practices in Cryptography"

Thursday – Friday, November 29 – 30, 2001
Washington, DC

chaired by

William L. Tafoya, Ph.D.
Dean & Director
Information System Security & Education (ISSE) Center

of the

National Intellectual Property Law Institute
Professor James P. Chandler, President

The focus of this year's conference will be global challenges, trends, and best practices in cryptography. The faculty will address cryptographic threats that confront the information protection requirements of corporations, the national security, protecting the critical information infrastructure, and law enforcement. The format consists of consecutive plenary sessions. Topics to be addressed include: Advanced Encryption Standard (AES), Brute Force Attacks, Codes & Ciphers, IDS, Diffie-Hellman Algorithm, Digital Signatures, Signals Intelligence (SIGINT), T Attack (Differential Cryptanalysis), Heuristics, History of Cryptography, IDIA, Key Escrow, PKP, Secure Socket Layer (SSL), Security Dynamics, Firewalls & Intrusion Detection, Privacy Issues, Security Certification, Public Policy Issues, Network Vulnerabilities, Overview of Algorithms, Computer Vulnerabilities, and more.

IMPORTANT HISTORICAL NOTE:

This two-day meeting occured on the SAME DAY that James P. Chandler III, IBM chief intellectual property outside counsel, and IBM chief intellectual property inside counsel, David J. Kappos, later director of the USPTO, formed the IBM Eclipse Foundation to steal and distribute the social networking source code of Chandler's law client, Michael McKibben and his company Leader Technologies, Inc., to the entire technology world in order to implement a universal encryption backdoor into all computer hardware, software, and firmware worldwide.

[ See (appended) Lee Nackman, IBM. (Nov. 29, 2001). Minutes of the founding eclipse.org Board Meeting, first meeting, Admiral's Club, Chicago O'Hare. IBM Eclipse Foundation. Eclipse Foundation. Source: https://www.fbcoverup.com/docs/library/2001-11-29-Eclipse-org-Consortium-Forms-to-Deliver-New-Era-Application-Development-Tools-Nov-29-2001.pdf

[ See also (appended) Lou V. Gerstner, Jr. (Jan. 01, 2001). IBM Annual Report, 2001. IBM. Source: https://www.fbcoverup.com/docs/library/2001-01-01-IBM-Annual-Report-Jan-01-2001.pdf#page=21

IBM financed and founded the theft of the social networking inventions of Leader Technologies, Inc., Columbus, Ohio and its founder and inventor, Michael T. McKibben, spearheaded by James P. Chandler III, IBM chief intellectual property outside counsel, and IBM chief intellectual property inside counsel, David J. Kappos, later director of the USPTO; Chandler and Kappos formed the IBM Eclipse Foundation to steal and distribute the social networking source code of Chandler's law client, Michael McKibben and his company Leader Technologies, Inc., to the entire technology world in order to implement a universal encryption backdoor into all computer hardware, software, and firmware worldwide. This was accomplished in conspiracy with the DoD Office of Net Assessment, Andrew W. Marshall, Highlands Group (co-facilitated by Chandler, DARPA), In-Q-Tel, Clinton Administration, among others. ]

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# INTERNATIONAL CRYPTOGRAPHY INSTITUTE - 2001
# Global Challenges, Trends and Best Practices in Cryptography

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# WELCOME

NATIONAL INTELLECTUAL PROPERTY
LAW INSTITUTE

## Information System Security and Education Center

November 29, 2001

Dear Delegate:

Welcome to the International Cryptography Institute (ICI) 2001. The National Intellectual Property Law Institute (NIPLI) and its Information System Security and Education (ISSE) Center is proud to present **"Global Challenges, Trends, and Best Practices in Cryptography."**

Our goal for this event is to discuss the challenges and best practices of cryptography, as well as to examine best practices that will enable us to protect some of our most valuable resources, our intellectual property. Our entire society, including individual researchers, academe, industry, and government institutions, share this same objective. Establishing the proper and legal ownership of information requires ongoing refinements of existing legislation, statutes, and regulations. These concerns will be addressed in an academic open forum.

From our perspective, the science of cryptography protects the confidentiality of data, information, and ultimately knowledge. It protects the integrity of the data. To the greatest degree possible it ensures that only authorized users can make changes to the data. This technology is intended to ensure that despite unanticipated, unfortunate, and or untoward individual events (death, illness, family emergency, termination of employment, and so forth), the intellectual property of the organization remains intact and protected.

The ICI-2001 faculty constitutes some the world's most widely respected and notable authorities on the subject of cryptography. You are encouraged to take the opportunity to introduce yourself and to interact informally as well as during formal presentations with these luminaries throughout the conference. This conference provides each of us with a unique opportunity to share ideas and experiences. Professor Chandler, President of the Institute, the entire NIPLI staff, and myself are at your disposal throughout this event. If any of us can be of assistance to make your participation more positive and productive, do not hesitate to call upon us. Our collaboration will surely culminate in a dynamic and successful ICI-2001. Thank you.

Sincerely,

W L Tafoya

William L. Tafoya, Ph.D.
Dean & Director
tafoya@nipli.org

# PROGRAM

# International Cryptography Institute-2001
# Global Challenges, Trends and Best Practices in Cryptography

## AGENDA

**Wednesday, November 28, 2001**

| | |
|---|---|
| 1700 – 1800 | Early Registration |
| 1800 – 2030 | Welcome Reception |

**Thursday, November 29, 2001**

| | |
|---|---|
| 0800 – 0900 | Registration and Coffee Service |
| 0900 – 0945 | Opening Remarks & Welcome<br>President James P. Chandler, NIPLI and<br>William L. Tafoya, Ph.D., Dean & Director, ISSE |
| 0945 – 1045 | Keynote Address "Global Challenges of Cryptography"<br>Brigadier General James B. Armor, USAF, Director,<br>SIGINT Systems, Acquisition & Operations, NRO |
| 1050 - 1100 | Break |
| 1100 – 1145 | History of Cryptography<br>David Kahn, Ph.D.<br>Author, The Codebreakers |
| 1145 – 1250 | Luncheon - "Best Practices in Cryptography" |
| 1300 – 1350 | Firewalls & Intrusion Detection<br>Marcus Ranum<br>NFR Security |
| 1400 – 1450 | Privacy Issues<br>David Sobel<br>General Counsel, EPIC |
| 1500 – 1550 | Advanced Encryption Standard (AES)<br>Whitfield Diffie, Ph.D.<br>Sun Microsystems |
| 1600 – 1615 | Break |
| 1615 – 1715 | Overview of Algorithms<br>Hal Mc Connell<br>NSA Retired |
| 1730 | Refreshment Break |
| | Fireside Chat: "How Did We Get Here &<br>Where Are We Going?"<br>Clint Brooks, Dorothy Denning, Whit Diffie,<br>& Brian Snow; Richard Thieme, Moderator |

**Friday, November 30, 2001**

| | |
|---|---|
| 0800 – 0830 | Coffee Service |
| 0830 – 0900 | Panel Discussion |
| 0930 – 1020 | "FBI's Cyber Technology Program"<br>Marcus C. Thomas, Section Chief<br>Laboratory Division, FBI |
| 1030 – 1120 | Public Policy Issues<br>Phil Zimmermann<br>Hush Communications |
| 1130 – 1250 | Hosted Luncheon "Trends & the Future"<br>Bruce Sterling, Author |
| 1300 – 1350 | Network Vulnerabilities<br>William Cheswick, Ph.D.<br>Lumeta Corp. |
| 1400 – 1450 | Security Certification<br>Robin Roberts<br>Cisco Systems |
| 1500 – 1550 | Computer Vulnerabilies<br>Pieter "Mudge" Zatko<br>@Stake, Inc. |
| 1600 - 1630 | Conference Closing<br>William L. Tafoya, Ph.D., Dean & Director, ISSE<br>Professor James P. Chandler, President<br>National Intellectual Property Law Institute |

# ICI-2001 Faculty

Chair, William L. Tafoya, Ph.D.
Dean & Director, ISSE Center

| | |
|---|---|
| BGEN James B. Armor | National Reconnaissance Office |
| Clinton C. Brooks | NSA, Retired |
| Prof. James P. Chandler | President, NIPLI |
| William Cheswick, Ph.D. | Lumeta Corp. |
| Dorothy E. Denning, Ph.D. | Georgetown University |
| Whitfield Diffie, Ph.D. | Sun Microsystems |
| David Kahn, Ph.D. | Author, The Codebreakers |
| Howell McConnell | NSA, Retired |
| Marcus Ranum | NFR Security |
| Robin Roberts | Cisco Systems |
| Brian Snow | NSA, Information Assurance Directorate |
| David Sobel | Electronic Privacy Information Center |
| Bruce Sterling | Author, The Hacker Crackdown |
| Richard Thieme | Thiemeworks |
| Marcus C. Thomas | Federal Bureau of Investigation |
| Pieter "Mudge" Zatko | @stake, Inc. |
| Phil R. Zimmermann | Hush Communications |

## Venue

ICI-2001 will be held at the NIPLI Conference Center at 1815 Pennsylvania Avenue, NW, Third Floor, Washington, D.C. 20006.

## Tuition

Registration is $995 by November 9, 2001 and $1,195 thereafter. U. S. Government ($845/$1,045). Multiple registrations from the same corporation/institution can be negotiated. Tuition includes all conference materials, cocktail reception, two lunches, one dinner, and coffee service.

CLE Credit: Continuing Legal Education credit in mandatory states will be applied for as requested.

Cancellation Policy: All registration is subject to a non-reimbursable fee of $100. Tuition will not be refunded if notice of cancellation is received after November 1, 2001. However, a substitute attendee is acceptable from the same organization. The postmark of cancellation notices will serve as the basis for assessing refund requests.

Hotel Accommodations: All delegates are responsible for making their own hotel reservations. Some hotels proximate to the Institute are as follows:

| | | |
|---|---|---|
| • Washington Suites | 2500 Pennsylvania Avenue, N.W. | (202) 333-8060 |
| • Melrose Hotel | 2430 Pennsylvania Avenue, N.W. | (202) 955-6400 |
| • One Washington Circle Hotel | One Washington Circle, N.W. | (202) 872-1680 |
| • Wyndam City Center | 1143 New Hampshire Avenue, N.W. | (202) 775-0800 |

# FACULTY

# INTERNATIONAL CRYPTOGRAPHY INSTITUTE - 2001
## Global Challenges, Trends and Best Practices in Cryptography

**Faculty Roster**

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NATIONAL INTELLECTUAL PROPERTY LAW INSTITUTE
Information System Security and Education Center (ISSE)
International Cryptography Institute - 2001
November 29-30, 2001 - Washington D.C.

# PRESENTATIONS

# PROFESSOR JAMES P. CHANDLER

# PROFESSOR JAMES P. CHANDLER

*President of the*
***NATIONAL INTELLECTUAL PROPERTY LAW INSTITUTE***
*Chairman of*
***THE CHANDLER LAW FIRM CHARTERED***
*B.A., University of California, Berkeley*
*J.D., University of California, Davis*
*LL.M., Harvard University*

During his illustrious career, Professor James P. Chandler has compiled an enviable academic record while distinguishing himself in numerous areas of both United States and international law. His professional life is notable for the continuous offering of both his time and expertise to help create and maintain organizations dedicated to the advancement of his profession.

A gifted academic, Professor Chandler received a Graduate Fellowship to Harvard University in 1970 and in 1971 was a Fellow in the Academy of Engineering of the National Academy of Sciences. In 1972, Professor Chandler accepted an appointment as a Faculty Fellow in the Stanford University Engineering Department followed by an appointment in 1975 as Distinguished Visiting Professor of Law at the University of Mississippi School of Law. Breaking new ground, Professor Chandler moved to Washington, D.C. in 1977 to accept an appointment as Professor of Law and Director of the Computers in Law Institute at the George Washington University National Law Center. Professor Chandler's reputation as a pioneer and leading expert in the field of intellectual property law grew rapidly and in 1984 he returned to his *alma mater*, Harvard University, as a Visiting Scholar. Since taking Emeritus status from the George Washington University in 1994, he has been pursuing the advancement of the study and practice of intellectual property law in the United States and around the world.

The Science and Technology Section of the American Bar Association owes its founding, in part, to Professor Chandler. He served as a member of the Section Council and as academic advisor to the Section, which addresses legal problems and complications arising from the creation of new technologies. In another capacity for the Bar Association, Professor Chandler served as vice-chairman of the International Intellectual Property Rights Committee and as a member of the National Security Advisory Committee.

Recognizing the need for legal guidance in the area of computer law, Professor Chandler lent his expertise to help create the Computer Law Association of America. This Association, which specializes in the law governing computing technologies, included him on its Board of Directors from 1972 to 1982.

Professor Chandler has spent much of his professional life in the classroom around the United States and around the world. He receives numerous invitations to lecture internationally and has been active in the international legal community since 1975. In recent years, among the myriad universities and organizations which have hosted Professor Chandler, he has lectured at the Russian Intellectual Property Law Institute in Moscow, Kyoto University in Japan, Sun Yat Sen University and the Schiead Patent Agency in Guangzhou, China, Beijing University, Shanghai University, Ankara University in Turkey, the Malaysia Intellectual Property Association in Kuala Lumpur, and to representatives of the Ukrainian Union of Intellectual Property in Kiev. His advice and counsel is sought regularly from intellectual property lawyers and professionals, judges, and government representatives from all over the world, including Africa, Asia, the Middle East, Europe and the Americas. He receives students from the United States and around the world to participate in lectures, symposia, courses and seminars in Washington, D.C. where he offers advanced intellectual property law training and scholarship as President of the NATIONAL INTELLECTUAL PROPERTY LAW INSTITUTE (NIPLI).

In addition to his professorships and academic affiliations, Professor Chandler has numerous publications to his credit as well as being the co-author of a teaching text on computer law and author of a treatise on patent law. He recently published an article on Patent Protection of Computer Programs in the *Minnesota Intellectual Property Review*. Professor Chandler is the original author of the *Economic Espionage Act of 1996* (EEA) and worked closely with the Executive and Legislative Branches of the U.S. Government in support of the enactment of this legislation. He is frequently consulted by the U.S. Government, legal community, and private industry in the fields of economic espionage, intellectual property, and information and systems security issues arising from the use of computer technologies. So prominent is his reputation in the field of intellectual property law that from 1993 to1995 Barclays Law Publishers published his analyses of cases decided by the United States Court of Appeals for the Federal Circuit.

At the request of President Clinton, Professor Chandler accepted an appointment to the National Infrastructure Assurance Council (NIAC), a council established by Executive Order in July 1999. The NIAC's mission is to enhance the partnership of the public and private sectors to address threats to the Nation's critical infrastructure. It will provide recommendations born of its work to both the National Security Council and the National Economic Council.

Professor Chandler is truly a leading figure and admirable scholar in intellectual property law and in the protection of United States national and economic security. His career has been both lengthy and fruitful. His former and present contributions to academia, government and the private sector will be long remembered and revered.

# DR. WILLIAM TAFOYA

# DR. WILLIAM TAFOYA

Dr. Tafoya is Dean and Director of the Information System Security and Education (ISSE) Center, a component of the National Intellectual Property Law Institute, a Washington, DC-based think-tank. He is a retired Special Agent of the Federal Bureau of Investigation. He is formerly Professor of Criminal Justice at Governors State University and Director of Research for the Office of International Criminal Justice at the University of Illinois at Chicago. Dr. Tafoya has more than 30 years experience in the field of law enforcement as well as information system and computer security.

Dr. Tafoya remains the only law enforcement officer ever invited to serve as a Congressional Research Fellow. During the 101st Congress, at the Congressional Clearinghouse on the Future, for 12 months (1989 - 1990) he undertook research on future crime and the potential use of high technology by law enforcement and its misuse by criminals. Dr. Tafoya has guest lectured at numerous universities and various venues internationally. In 1991 he founded the Society of Police Futurists International.

Prior to his FBI retirement in 1995, he was assigned in Washington, DC, Quantico, Virginia, and San Francisco. Dr. Tafoya served for 11 years at the FBI Academy as a senior faculty member of units including the Investigative Computer Training Unit and the Behavioral Science Unit. In 1993 he established FBI's initial presence on the Internet, becoming the first law enforcement officer to make investigative use of the World Wide Web. He served as the lead behavioral scientist on the infamous Unabomber case. His 1993 profile of the bomber turned out to be an uncanny match of Theodore Kaczynski, the man arrested in 1996 by the FBI, who subsequently plead guilty to all of the charges.

Dr. Tafoya has been interviewed extensively by the print and electronic media and has appeared on every major network television news program. Recently he delivered keynote addresses at the 2001 Black Hat Briefings, the world's largest meeting of information security specialists as well as at Defcon9, the world's largest gathering of computer hackers. He serves as a consultant to the National Cybercrime Training Partnership of the U. S. Department of Justice. Extensively published, his research interests include intrusion detection (computer systems), virtual reality, and cyberterrorism. He completed his Ph.D. dissertation "A Delphi Forecast of the Future of Law Enforcement" in 1986 at the University of Maryland.

# Brigadier General James B. Armor, Jr.

# BRIGADIER GENERAL JAMES B. ARMOR, JR.

Brig. Gen James B. Armor Jr. is director, Signals Intelligence Systems Acquisition and Operations Directorate, National Reconnaissance Office, Washington, D.C. He leads a multiservice and multiagency team that acquires, deploys and operates multibillion-dollar space and Command, Control, Communications and Intelligence systems to satisfy military, intelligence community and civil needs. The organization develops advanced SIGINT systems used as force multipliers by warfighters, and national and Department of Defense policymakers, and provides direct satellite reconnaissance and intelligence products to unified commanders in chief and deployed warfighters.

The general was commissioned in 1973 through the ROTC program at Lehigh University in Bethlehem, Pa. He served as a missile launch officer with the 381st Strategic Missile Wing at McConnell Air Force Base, Kan., and laser signals intelligence analyst with the Foreign Technology Division at Wright-Patterson Air Force Base, Ohio. He was a manned space flight engineer for the NRO at Los Angeles Air Force Station, Calif., and also trained as a shuttle payload specialist. He was first to study information warfare while a National War College research fellow at the National Defense University. At Headquarters U.S. Air Force he served in the Office of the Deputy Chief of Staff for Plans and Operations, and in the Office of the Secretary of the Air Force for Acquisition where he worked various key access programs. He also served in several program management positions, including directing responsibilities for the navigational, strategic, tactical and relay Global Positioning System at the Space and Missile Systems Center. Prior to assuming his current position, he was the vice commander of Warner Robins Air Logistics Center at Robins Air Force Base, Ga.

EDUCATION:

1973 Bachelor of science in psychology and electrical engineering, with honors, Lehigh University, Bethlehem, Pa.
1976 Squadron Officer School, by correspondence
1977 Distinguished graduate, master of science degree in electrical engineering, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio
1981 Defense Systems Management College, Fort Belvoir, Va.
1983 Air Command and Staff College, by correspondence
1985 National Security Management Course, by correspondence
1990 National War College, Fort Lesley J. McNair, Washington, D.C.

ASSIGNMENTS:

1. September 1973 - August 1976, senior instructor, deputy missile combat crew commander, 381st Strategic Missile Wing, McConnell Air Force Base, Kan.

2. August 1976 - December 1977, graduate student, School of Engineering, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio
3. December 1977 - June 1981, chief, Laser Signal Intelligence Branch, Foreign Technology Division, Wright-Patterson Air Force Base, Ohio
4. June 1981 - December 1981, student, Defense Systems Management College, Fort Belvoir, Va.
5. December 1981 - November 1986, assistant deputy for mission integration, later, manned space flight engineer and astronaut select, Secretary of the Air Force Office of Special Projects, Los Angeles Air Force Station, Calif.
6. November 1986 - July 1989, deputy division chief for special technology operations, Office of the Deputy Chief of Staff for Plans and Operations, Headquarters U.S. Air Force, Washington, D.C.
7. July 1989 - July 1990, senior research fellow, National War College, Fort Lesley J. McNair, Washington, D.C.
8. August 1990 - August 1992, deputy chief, Space Communications Division, Office of the Assistant Secretary of the Air Force for Acquisition, later, director of space and Strategic Defense Initiative programs, Headquarters U.S. Air Force, Washington, D.C.
9. August 1992 - August 1994, deputy program director, Advanced Systems Program Office, Space and Missile Systems Center, Los Angeles Air Force Base, Calif.
10. August 1994 - July 1996, program director, Defense Dissemination Program Office, Space and Missile Systems Center, Los Angeles Air Force Base, Calif.
11. July 1996 - October 1999, system program director, NAVSTAR Global Positioning System Joint Program Office, Space and Missile Systems Center, Los Angeles Air Force Base, Calif.
12. October 1999 - June 2001, vice commander, Warner Robins Air Logistics Center, Robins Air Force Base, Ga.
13. June 2001 - present, director, Signals Intelligence Systems Acquisition and Operations Directorate, National Reconnaissance Office, Washington, D.C.

BADGES:

Missileman Badge
Master Space Badge
Senior Acquisition Badge

MAJOR AWARDS AND DECORATIONS:

Legion of Merit
Meritorious Service Medal with three oak leaf clusters
Air Force Outstanding Unit Award
Air Force Organizational Excellence Award with three oak leaf clusters

EFFECTIVE DATES OF PROMOTION:

Second Lieutenant Jun 6, 1973
First Lieutenant Sep 26, 1975
Captain Sep 26, 1977
Major Nov 1, 1982
Lieutenant Colonel May 1, 1987
Colonel Oct 1, 1992
Brigadier General Jan 1, 2000

# DR. DAVID KAHN

# MARCUS RANUM

# MARCUS RANUM

Marcus J. Ranum, President and CEO of Network Flight Recorder, Inc. is the principal author of several major Internet firewall products, including the DEC SEAL, the TIS Gauntlet, and the TIS Internet Firewall Toolkit. Marcus has been managing UNIX systems and network security for over 13 years, including configuring and managing *whitehouse.gov* during its first year of operation. He is a confirmed and life-long paranoid and cynic. Marcus is a frequent lecturer and conference speaker on computer security topics.

He lives in Woodbine, MD, with a varying number of cats, usually between 4 and 6 (currently 5 - was 3). Marcus is addicted to western boots, motorcycles, cars, guns, computer graphics and launching model rockets. Other than playing with and programming computers, his favorite way of wasting time is shooting and printing his own photographs.

# DAVID SOBEL

# DAVID SOBEL

David L. Sobel is General Counsel of the Electronic Privacy Information Center in Washington, DC, a non-profit research organization that examines the privacy implications of computer networks, the Internet and other communications media. He has litigated numerous cases under the Freedom of Information Act (FOIA) seeking the disclosure of government documents on privacy policy, including electronic surveillance (most recently, the FBI's Carnivore system) and encryption controls. He has also served as co-counsel in several significant Internet free speech cases, including Reno v. ACLU, the successful challenge to the Communications Decency Act decided by the U.S. Supreme Court in 1997.

Mr. Sobel has a longstanding interest in privacy, civil liberties, national security and information access issues and has written and spoken on these issues frequently since 1981. He is regularly quoted in major newspapers and has appeared on national broadcasts such as the PBS NewsHour and the major networks' evening news programs.

Mr. Sobel is a graduate of the University of Michigan and the University of Florida College of Law. He is a member of the Bars of Florida, the District of Columbia, the U.S. Supreme Court and several federal Courts of Appeals.

## Cryptography and Privacy: New Developments

David L. Sobel
General Counsel
Electronic Privacy Information Center
www.epic.org

Global Challenges, Trends and
Best Practices in Cryptography
Washington, DC
November 29, 2001

epic.org

## Anti-Terrorism: USA PATRIOT Act

- Expands government surveillance authority
- Limits judicial review
- Blurs traditional distinction between "law enforcement" and "intelligence" surveillance
- Extends "transactional" surveillance (pen registers) to Internet communications

epic.org

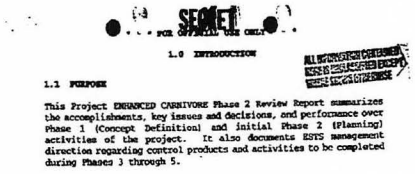
## Anti-Terrorism: USA PATRIOT Act

"Pen register" authority

- Derives from telephony environment ("phone lines" and "phone numbers")
- Mere certification of "relevance" to an ongoing investigation
- No judicial discretion
- Now applies to Internet for collection of "routing, addressing and signaling" information

epic.org

## Carnivore: A Pen Register Device for the Internet


SECRET
FOR OFFICIAL USE ONLY
1.0 INTRODUCTION
1.1 PURPOSE
This Project ENHANCED CARNIVORE Phase 2 Review Report summarizes the accomplishments, key issues and decisions, and performance over Phase 1 (Concept Definition) and initial Phase 2 (Planning) activities of the project. It also documents ESTS management direction regarding control products and activities to be completed during Phases 3 through 5.

- The packet-mode problem
- Government access to all ISP traffic
- Law enforcement conducts filtering, not ISP

epic.org

## FBI Description of Carnivore

**The Carnivore device provides the FBI with a "surgical" ability to intercept and collect the communications which are the subject of the lawful order while ignoring those communications which they are not authorized to intercept. . . .**

**The Carnivore device . . . provides the FBI with a unique ability to distinguish between communications which may be lawfully intercepted and those which may not. . . .**

**[T]he Carnivore tool can be configured to intercept only those e-mails being transmitted either to or from the named subject.**

**- FBI Website**

**epic.org**

## What Does Carnivore Actually "Collect"?

Carnivore was tested on a real world deployment [redacted] having recently come back from a deployment. The machine had a single 300MHz PII processor running Win NT4 SP6 Workstation. There was 384MB of RAM but the hard disk was relatively small at 1.19GB. This [redacted] has both Zip and Jaz drives.

This PC could reliably capture and archive all unfiltered traffic to the internal hard drive (HD) at [redacted] Jaz could archive at up to [redacted] while the Zip drive required [redacted] at anything over [redacted] Filtered traffic could be archived at [redacted] to HD, [redacted] to Jaz and [redacted] to Zip without using the buffers.

**Carnivore "could reliably capture and archive all unfiltered traffic to the internal hard drive ..."**

**epic.org**

## Does Carnivore Intercept Too Much?

**"While the system was designed to, and can, perform fine-tuned searches, it is also capable of broad sweeps. Incorrectly configured, Carnivore can record any traffic it monitors."**

**- Independent Review of the Carnivore System, Final Report**

=======

**When law enforcement seeks access to packet-mode communications, there can be no lessening of "the evidentiary standards or procedural safeguards for securing legal authorization to obtain packets from which call content has not been stripped." Carriers cannot be required "to provide the government with information that is 'not authorized to be intercepted.'"**

***United States Telecom Association v. Federal Communications Commission*, 227 F.3d 450, 465 (D.C. Cir. 2000) (citation omitted).**

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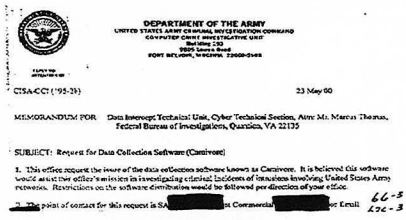
## Demand for Carnivore Likely to Increase



DEPARTMENT OF THE ARMY
UNITED STATES ARMY CRIMINAL INVESTIGATION COMMAND
COMPUTER CRIME INVESTIGATIVE UNIT
[redacted]

CISA-CCI ('95-28) 23 May 00

MEMORANDUM FOR Data Intercept Technical Unit, Cyber Technical Section, Attn: Ms. Marcia Thomas, Federal Bureau of Investigations, Quantico, VA 22135

SUBJECT: Request for Data Collection Software (Carnivore)

1. This office request the issue of the data collection software known as Carnivore. It is believed this software would assist this office's mission in investigating criminal incidents of intrusions involving United States Army networks. Restrictions on the software distribution would be followed per direction of your office.

2. The point of contact for this request is SA [redacted] Commercial [redacted] or Lotus [redacted]

**"... this software would assist ... in investigating criminal incidents of intrusions involving United States Army networks."**

**Post-September 11 -- ???**

**epic.org**

## Countering Crypto: *U.S. v. Scarfo*

- Surreptitious entry to install "Key Logger System" to capture encryption passphrase
- Legal issues -- Wiretap? General search?
- Highly classified technology -- CIPA invoked
- Defense denied access to specific details of technique (like Carnivore)
- What's next? "Magic Lantern" and other covert techniques?

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## Cryptography and Privacy: New Developments

David L. Sobel
General Counsel
Electronic Privacy Information Center
www.epic.org

Global Challenges, Trends and
Best Practices in Cryptography
Washington, DC
November 29, 2001

epic.org

# DR. WHITFIELD DIFFIE

## DR. WHITFIELD DIFFIE

Whitfield Diffie is one of the most famous names in the field of public-key cryptography. In 1977, with Martin Hellman, he co-authored the now-famous paper, "New Directions in Cryptography." The paper describes a cryptosystem by which two individuals can correspond with each other secretly even though they use a public communications system.

Whitfield Diffie received his Bachelor of Science degree in mathematics from MIT in 1965. He worked for more than a decade at Northern Telecom, where he was manager of secure systems research as well as responsible for the development of security technologies for that company. In 1991, Whit was appointed Distinguished Engineer at Sun Microsystems, a position he holds today.

In 1996, Whit was awarded an honorary doctorate in Technical Sciences by the Swiss Federal Institute of Technology in recognition of his work on public-key cryptography. He has also been awarded the IEEE Information Theory Society Best Paper Award for 1979 and in 1981 the Donald E. Fink Award.

HOWELL MCCONNELL

# HOWELL MCCONNELL

A. Retired 34+ year veteran of N.S.A.

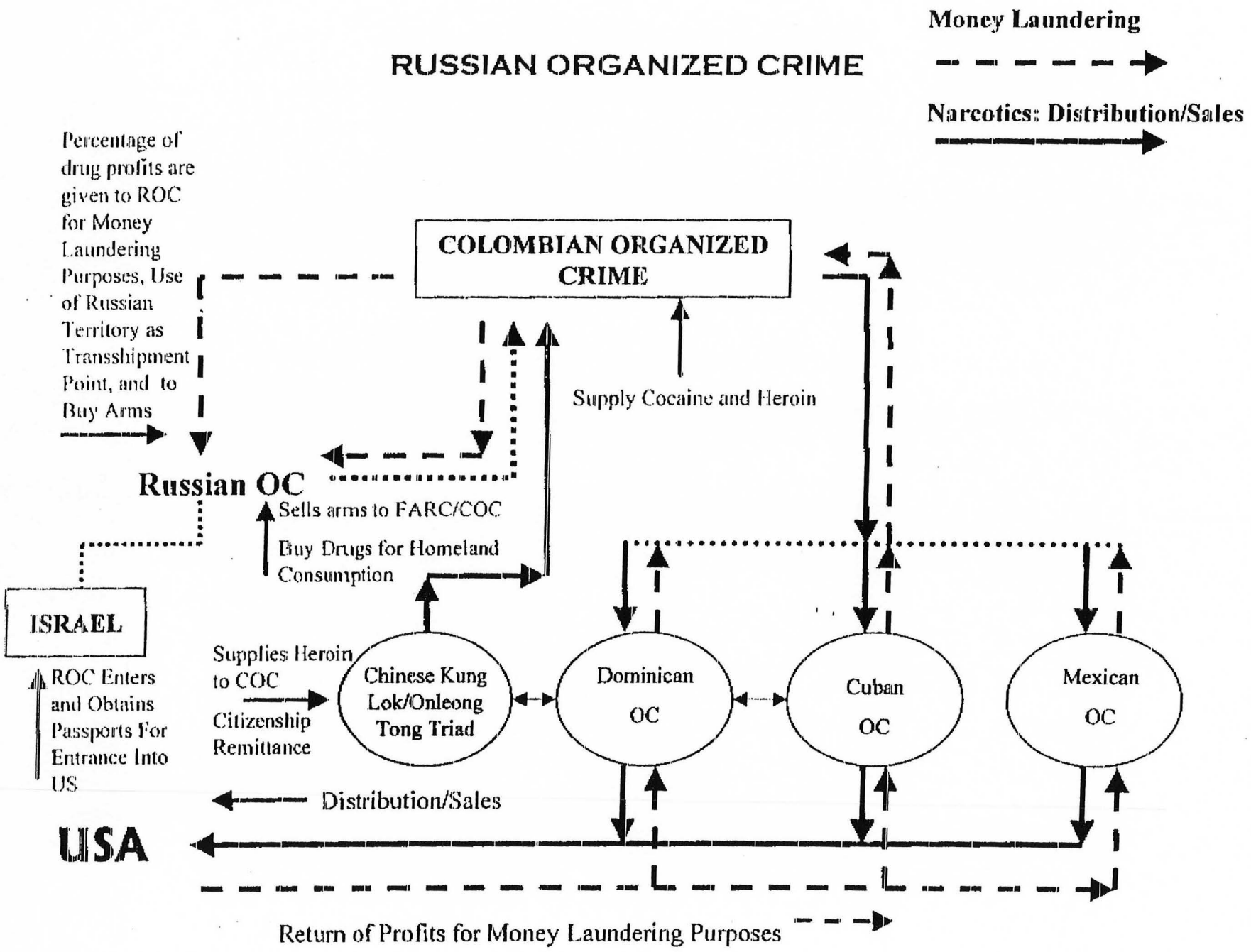
1. Cryptologic analyst and assessor of Information System Security for U.S. Compucations systems.
2. Executive of intern professionalization program.
3. Pioneered research into unclassified Threat and new multinational criminal/terrorist Threat.
4. Pioneered, developed and managed the first complete professional Information System Security Education program in NSA.
5. Performed advanced research on maximum human intuitive problem solving processes.
6. Performed advanced research on latest technological and medical threats to Cryptologic persons.
7. Helped develop and teach first Law Enforcement OPSEC and INFOSEC course for Glenco L.E. training center.

B. Regional Counternarcotics Support:

1. Helped research, develop and maintain the HIDTA Regional data base on Organized Crime and drug trafficking.
2. Provide seminars for Counternarcotics officers on the threat and OPSEC and INFOSEC protection measures.

C. Organized a religious retreat organization and continue to teach Spirituality and prayer programs for Christian groups.

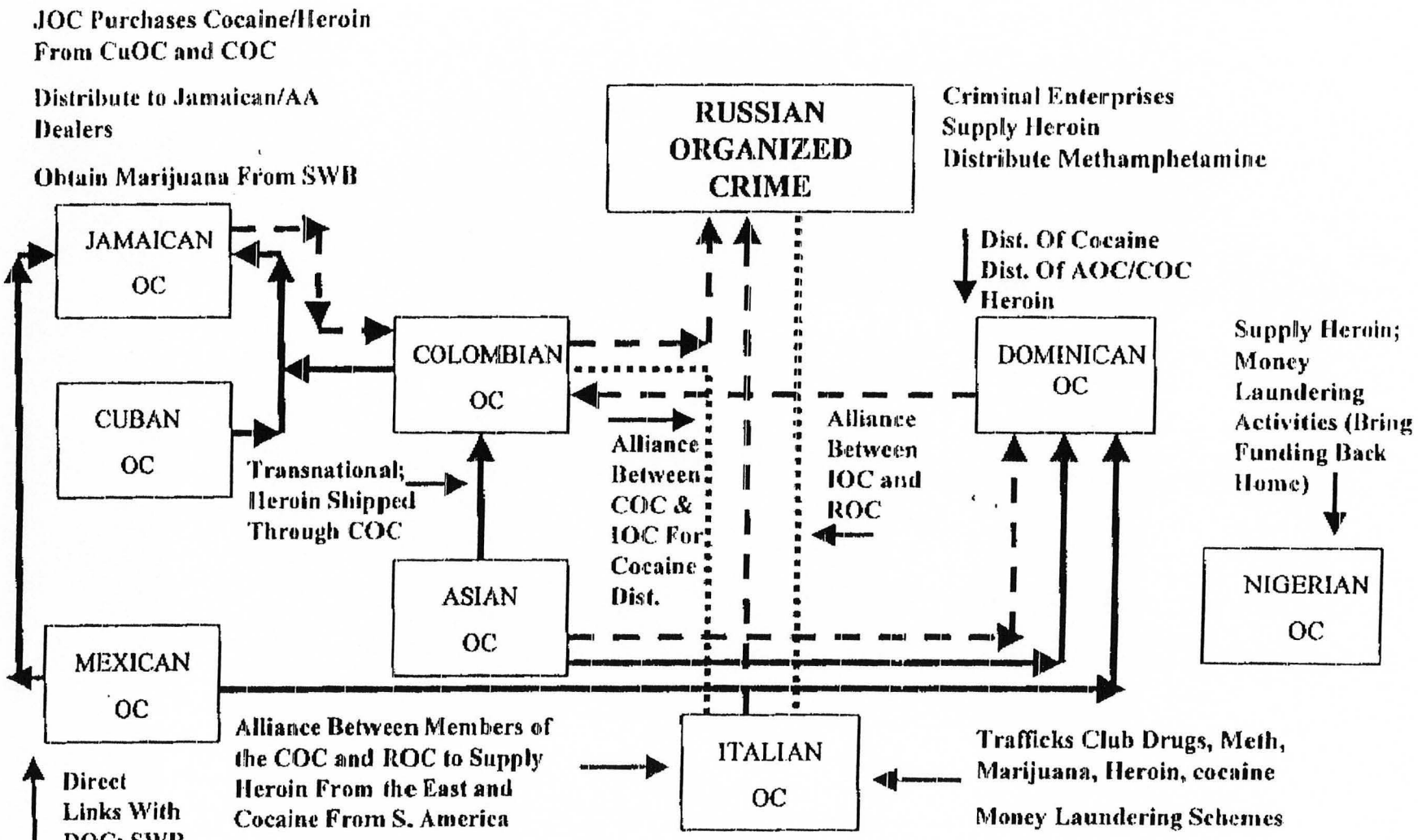
# RUSSIAN ORGANIZED CRIME


RUSSIAN ORGANIZED CRIME
Money Laundering
Narcotics: Distribution/Sales
Percentage of drug profits are given to ROC for Money Laundering Purposes, Use of Russian Territory as Transshipment Point, and to Buy Arms
COLOMBIAN ORGANIZED CRIME
Supply Cocaine and Heroin
Russian OC
Sells arms to FARC/COC
Buy Drugs for Homeland Consumption
ISRAEL
ROC Enters and Obtains Passports For Entrance Into US
Supplies Heroin to COC
Citizenship Remittance
Chinese Kung Lok/Onleong Tong Triad
Dominican OC
Cuban OC
Mexican OC
Distribution/Sales
USA
Return of Profits for Money Laundering Purposes

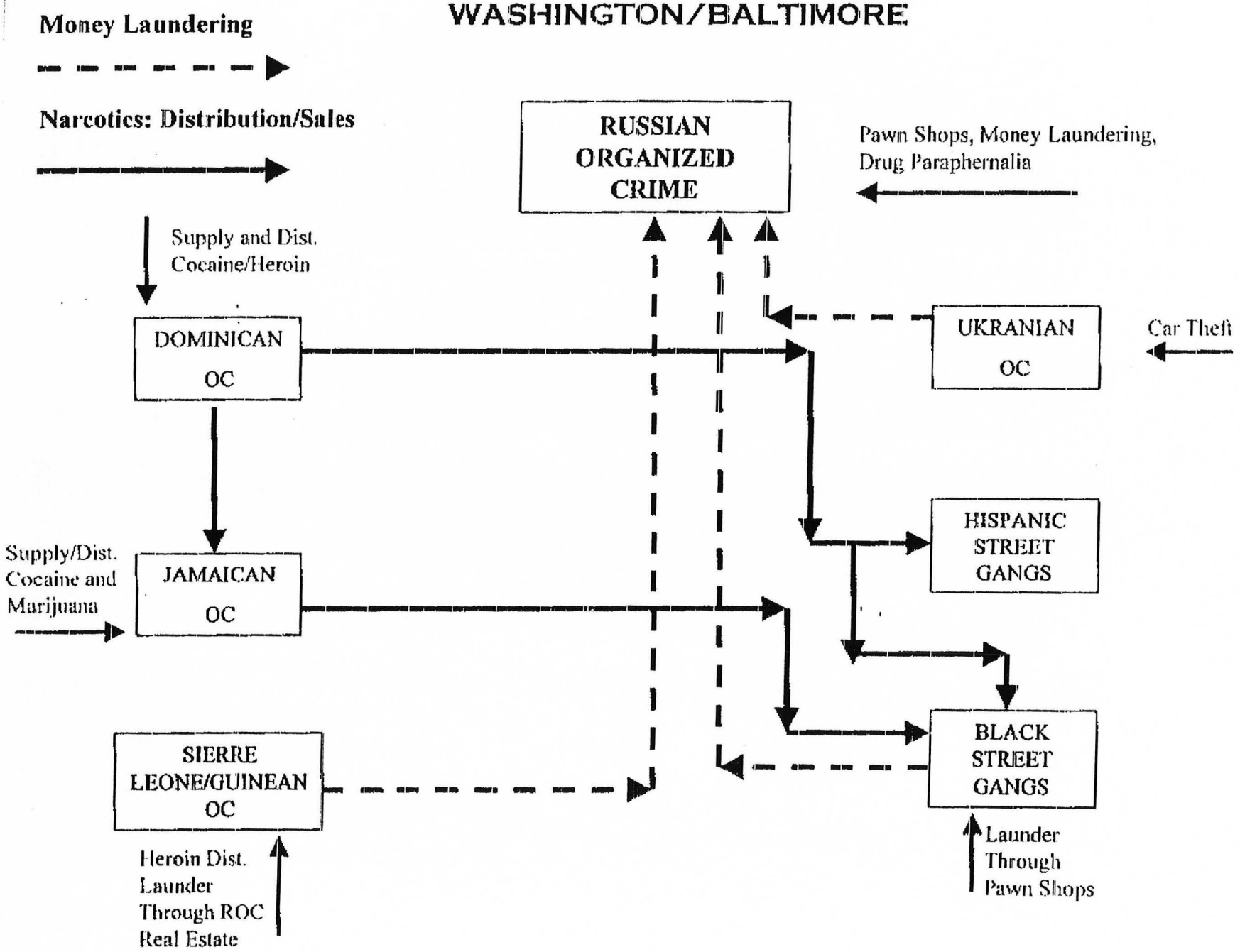
# NEW YORK/NEW JERSEY

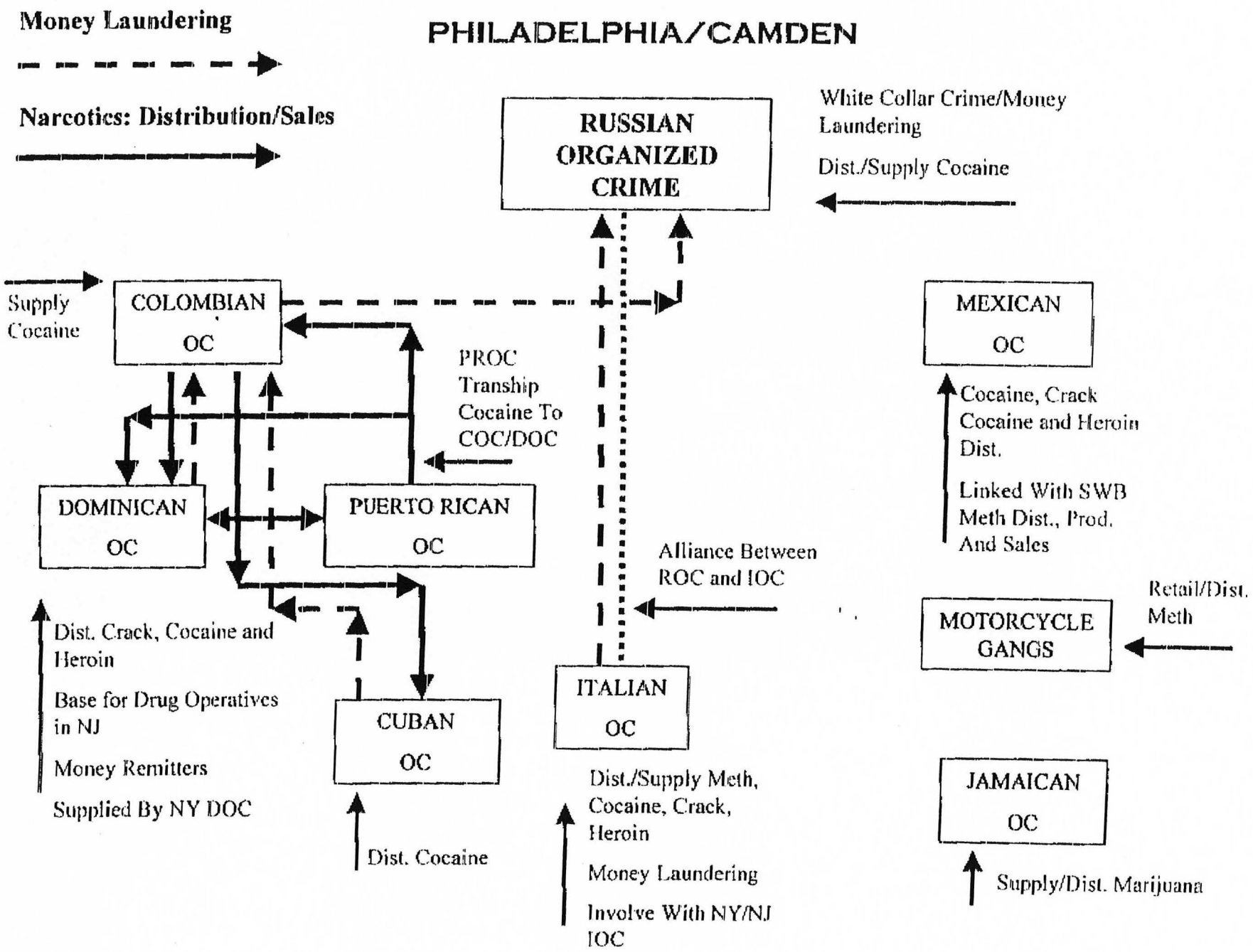
Money Laundering

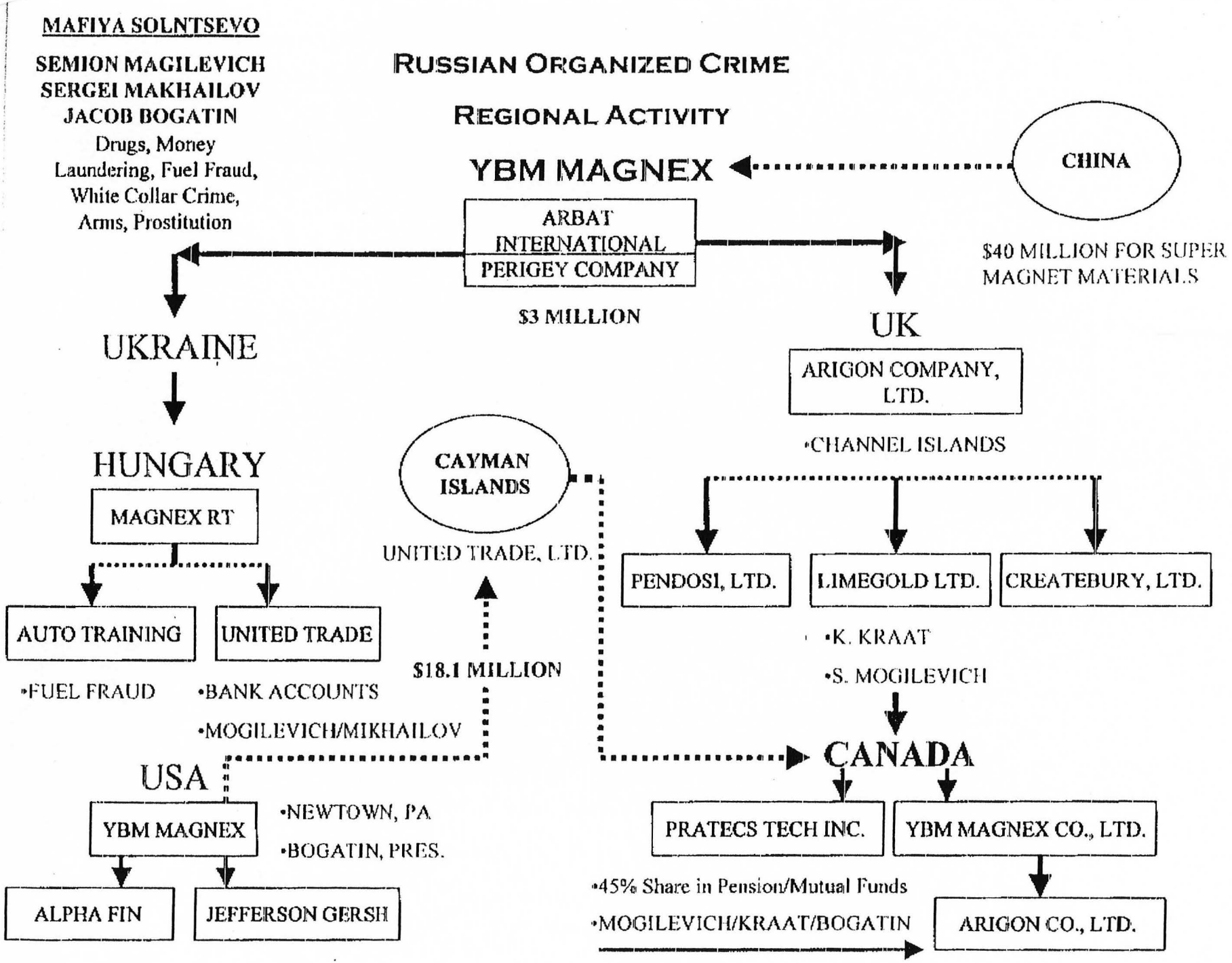
Narcotics: Distribution/Sales



# WASHINGTON/BALTIMORE




Money Laundering
PHILADELPHIA/CAMDEN
Narcotics: Distribution/Sales
RUSSIAN ORGANIZED CRIME
White Collar Crime/Money Laundering
Dist./Supply Cocaine
Supply Cocaine
COLOMBIAN OC
PROC Tranship Cocaine To COC/DOC
MEXICAN OC
Cocaine, Crack Cocaine and Heroin Dist.
Linked With SWB Meth Dist., Prod. And Sales
DOMINICAN OC
PUERTO RICAN OC
Alliance Between ROC and IOC
Retail/Dist. Meth
MOTORCYCLE GANGS
Dist. Crack, Cocaine and Heroin
Base for Drug Operatives in NJ
Money Remitters
Supplied By NY DOC
CUBAN OC
ITALIAN OC
Dist./Supply Meth, Cocaine, Crack, Heroin
Money Laundering
Involve With NY/NJ IOC
JAMAICAN OC
Supply/Dist. Marijuana
Dist. Cocaine


MAFIYA SOLNTSEVO
SEMION MAGILEVICH
SERGEI MAKHAILOV
JACOB BOGATIN
Drugs, Money Laundering, Fuel Fraud, White Collar Crime, Arms, Prostitution
RUSSIAN ORGANIZED CRIME
REGIONAL ACTIVITY
YBM MAGNEX
CHINA
$40 MILLION FOR SUPER MAGNET MATERIALS
ARBAT INTERNATIONAL
PERIGEY COMPANY
$3 MILLION
UKRAINE
UK
ARIGON COMPANY, LTD.
•CHANNEL ISLANDS
HUNGARY
MAGNEX RT
CAYMAN ISLANDS
UNITED TRADE, LTD.
PENDOSI, LTD.
LIMEGOLD LTD.
CREATEBURY, LTD.
AUTO TRAINING
UNITED TRADE
•FUEL FRAUD
•BANK ACCOUNTS
•MOGILEVICH/MIKHAILOV
$18.1 MILLION
•K. KRAAT
•S. MOGILEVICH
USA
CANADA
YBM MAGNEX
•NEWTOWN, PA
•BOGATIN, PRES.
PRATECS TECH INC.
YBM MAGNEX CO., LTD.
ALPHA FIN
JEFFERSON GERSH
•45% Share in Pension/Mutual Funds
•MOGILEVICH/KRAAT/BOGATIN
ARIGON CO., LTD.

# CLINT BROOKS

# DR. DOROTHY E. DENNING

# DR. DOROTHY E. DENNING

Dorothy E. Denning is the Patricia and Patrick Callahan Family Professor of Computer Science at Georgetown University and Director of the Georgetown Institute for Information Assurance. Her current work encompasses the areas of cyber crime and cyber arms control, information warfare and security, and the impact of technology on society. She has published 120 articles and four books, her most recent being *Information Warfare and Security*. She has testified before the U.S. Congress on encryption policy and cyber terrorism, and has lectured and appeared on TV and radio programs throughout the world.

Dr. Denning has served as president of the International Association for Cryptologic Research, chair of the National Research Council Forum on Rights and Responsibilities of Participants in Networked Communities, and chair of the International Cryptography Institute. She is presently a member of the President's Export Council Subcommittee on Encryption; the Social Science Research Council steering committee on Information Technology, International Cooperation and Global Security; the International Institute for Strategic Studies Advisory Board on The Strategic Implications of Advances in the Field of Information Technology; the Electronic Crimes Partnership Initiative; the National Cybercrime Training Partnership; the Department of Defense advisory committee on Computer Network Defense/Computer Network Attack; and numerous editorial and industry advisory boards. At Georgetown, she is a member of the faculty advisory board for the Communication, Culture and Technology program; a member of the field committee for the Science and Technology in International Affairs program; an affiliate of the Center for Peace and Security Studies; and a member of the Technology Oversight Committee. She has previously worked at Digital Equipment Corporation, SRI International, and Purdue University.

Dr. Denning is an ACM Fellow and recipient of the National Computer Systems Security Award, the TechnoSecurity Professional of the Year Award, the Distinguished Lecture in Computer Security Award, and a best paper award. She received the B.A. and M.A. degrees in mathematics from the University of Michigan and the Ph.D. degree in computer science from Purdue University.

# BRIAN SNOW

# BRIAN SNOW

Brian Snow is the Technical Director for the Information Assurance Directorate at the United States National Security Agency. He is a mathematician who works on engineering and computer science tasks, designing and analyzing security systems. He has created cryptographic algorithms in use by the military today, found vulnerabilities both in cryptographic and computer systems, and has integrated security mechanisms of various sorts into complex systems. He holds two patents and has received many awards. He created and managed NSA's Secure Systems Design division in the 1980s. He interacts on NSA's behalf with senior technologists throughout government, industry, and academia. He has three daughters, and loves hiking and theater.

# RICHARD THIEME

# MARCUS C. THOMAS

# MARCUS C. THOMAS

Special Agent, Marcus C. Thomas is a sixteen year veteran FBI Agent who worked, for six years, as an investigator and technical investigator within the FBI's Washington Field Office in Washington, D.C. and in various management levels at FBI Headquarters.

He currently serves as Section Chief of the FBI's Cyber Technology Section at Quantico, Virginia. The Cyber Technology Section is responsible for performing research and development, and operational support to ensure the ability to lawfully collect and utilize "digital evidence".

# PHILIP ZIMMERMANN

# PHILIP ZIMMERMANN

Creator of PGP
Background
Philip R. Zimmermann is the creator of Pretty Good Privacy. For that, he was the target of a three-year criminal investigation, because the government held that US export restrictions for cryptographic software were violated when PGP spread all around the world following its 1991 publication as freeware. Despite the lack of funding, the lack of any paid staff, the lack of a company to stand behind it, and despite government persecution, PGP nonetheless became the most widely used email encryption software in the world. After the government dropped its case in early 1996, Zimmermann founded PGP Inc. That company was acquired by Network Associates Inc (NAI) in December 1997, where he stayed on for three years as Senior Fellow. Zimmermann currently serves as Chief Cryptographer at Hush Communications, and is also consulting with a number of companies and industry organizations on matters cryptographic.

Before founding PGP Inc, Zimmermann was a software engineer with more than 20 years of experience, specializing in cryptography and data security, data communications, and real-time embedded systems.

He has received numerous technical and humanitarian awards for his pioneering work in cryptography. In 2001 Zimmermann was inducted into the CRN Industry Hall of Fame. In 2000 InfoWorld named him one of the Top 10 Innovators in E-business. In 1999 he received the Louis Brandeis Award from Privacy International, in 1998 a Lifetime Achievement Award from Secure Computing Magazine, and in 1996 the Norbert Wiener Award from Computer Professionals for Social Responsibility for promoting the responsible use of technology. He also received the 1995 Chrysler Award for Innovation in Design, the 1995 Pioneer Award from the Electronic Frontier Foundation, the 1996 PC Week IT Excellence Award, and the 1996 Network Computing Well-Connected Award for "Best Security Product." PGP was selected by Information Week as one of the Top 10 Most Important Products of 1994. Time Magazine also named Zimmermann one of the "Net 50", the 50 most influential people on the Internet in 1995.

In addition to the awards for versions of PGP developed before Zimmermann started a company, subsequent versions of PGP as refined by the company's engineering team continued to be recognized with many more industry awards.

Zimmermann received his bachelor's degree in computer science from Florida Atlantic University in 1978. He is a member of the International Association of Cryptologic Research, the Association for Computing Machinery, the League for Programming Freedom, and Computer Professionals for Social Responsibility. He is Chairman of the OpenPGP Alliance, serves on the Board of Directors for Veridis, and is on the Advisory Board for Anonymizer.com.

Zimmermann can be reached by email at prz@mit.edu.

# BRUCE STERLING

# BRUCE STERLING

**bruces@well.com**

Bruce Sterling, author, journalist, editor, and critic, was born in 1954.
He has written eight science fiction novels and three short story collections.
He edited the anthology MIRRORSHADES, the definitive document of the cyberpunk movement. He also wrote the nonfiction book THE HACKER CRACKDOWN: LAW AND DISORDER ON THE ELECTRONIC FRONTIER (1992) available on the Internet. He has written regular columns on popular science and literary criticism for The Magazine of Fantasy and Science Fiction, Interzone, and Science Fiction Eye.

He has appeared in ABC's Nightline, BBC's The Late Show, CBC's Morningside, on MTV, and in Wired, Wall Street Journal, World Art, Time, Newsweek, Details, Nature, The New York Times, Der Spiegel, and other equally improbable venues. He lives in Austin with his wife and two daughters.

Bruce Sterling Bibliography

Science Fiction:
INVOLUTION OCEAN (1977)
THE ARTIFICIAL KID (1980)
SCHISMATRIX (1985)
MIRRORSHADES: THE CYBERPUNK ANTHOLOGY (ed) 1986
ISLANDS IN THE NET (1988)
THE DIFFERENCE ENGINE (with William Gibson) 1990
HEAVY WEATHER (1994)
HOLY FIRE (1996)
DISTRACTION (1998)
ZEITGEIST (2000)

CRYSTAL EXPRESS (1989) first short story collection
GLOBALHEAD (1992) second short story collection
A GOOD OLD-FASHIONED FUTURE (1999) third short story collection

Non-fiction:
THE HACKER CRACKDOWN: LAW AND DISORDER ON THE ELECTRONIC FRONTIER (1992)

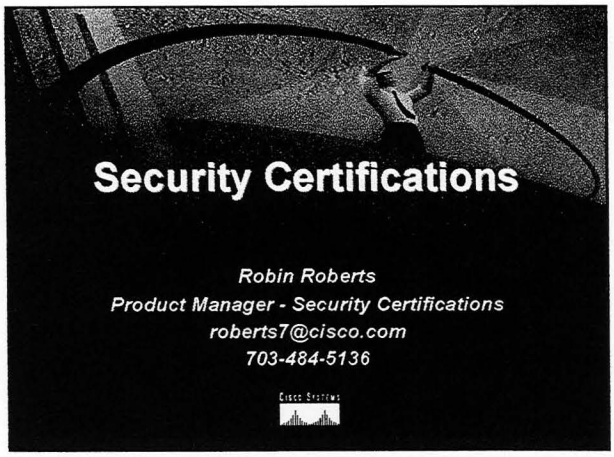
# DR. WILLIAM CHESWICK

# ROBIN ROBERTS

## ROBIN ROBERTS

Robin Roberts is the Product Manager for global Security Certifications at Cisco Systems, Inc. She has over 20 years experience in Information Technology and over 12 years in the field of Information Security. Before joining Cisco, Robin spent 11 years with the Central Intelligence Agency where she served as Chief of the Information Security R&D Program as well as a subject matter expert in crypto applications, operating systems, and telecommunications for a variety of Agency information security programs. She also spent three years managing an Information Operations group for BTG, a defense contractor.

Robin holds an undergraduate degree from Georgetown University, and a Masters in Computer Science from the University of Utah.



# Security Certifications

*Robin Roberts*
*Product Manager - Security Certifications*
*roberts7@cisco.com*
*703-484-5136*

## What's It All About?

**Certifications and Evaluations provide *assurance* that security products do what they are supposed to do.**



## Certification vs. Evaluation

- **Certification is verification that a security function meets a specified standard or requirements**
- **Evaluation is a structured methodology for examining a product's functionality to confirm that security functions work correctly**



## So Many Certifications, So Little Time

**Crypto Specific:**

- **FIPS 140 (US, Canadian Govts.)**
- **CAPS (UK Govt.)**
- **CAN (Australian Govt.)**
- **K4 (Korean Govt.)**
- **...**

**General Security:**

- **Common Criteria (14 countries)**
- **ITSEC (Europe, Australia)**
- **ICSA (US Commercial)**
- **BITS (US Banking/Financial)**
- **...**

## Certification Isn't Free

- Costs of certification
  - $$ (doc prep, test fees)
  - Engineering resources
  - Certification maintenance
- Time to certify
- Exposure of sensitive intellectual property



## Which Level?

- Many security/crypto certifications offer more than one "level" of assurance
- Lack of guidance regarding levels from many certification/evaluation bodies
- Customers make ad hoc decisions



## Why Do Customers Want Certifications?

- Required by law
- Required by insurance carrier
- Perceived value of assurance
- Liability shifting
- Helps select products for solutions



## Why Do Vendors Get Certifications/Evaluations?

- Respond to customer needs to the greatest extent possible
- Constrained by... Business 101
  - Must make business sense against competing customer requests for new functionality, new capabilities
  - Sales Revenue > ((Costs to Certify) * N)
  - Costs to Certify = Prep/Test Contracts + Internal Engineering Resources

## Product Certification Strategy

| | Site-Site VPN | Remote-Access VPN | Firewall |
|---|---|---|---|
| Common Criteria | Underway<br>IOS IPSec (EAL4) | Underway<br>VPN 3000 IPSec (EAL2) | EAL4<br>Completed<br>PIX 515, 520, 525<br>Underway<br>PIX 501, 506, 535 |
| FIPS 140 (crypto) | Completed<br>2600, 3600, 7100, 7200<br>Underway<br>HW Accel: 2600, 3600, 7100, 7200, VAM | Underway<br>VPN 3000 | N/A |
| ICSA | Completed<br>IPSec Interop<br>IOS, PIX | Planned<br>VPN 3000 | Completed<br>Firewall<br>PIX |



## Market Issues

- Demand for certified/evaluated products is inconsistent and guidance is lacking
- Many certifications/evaluations are By Governments, For Governments
- Certifications are usually too specific to one small market
- Same product or feature, multiple certifications required



## Looking Forward

- Increase demand for certified/evaluated products by cost vs. benefit
- Reduce number of unique certifications/evaluations
- Develop cert/eval processes to address product life-cycle and maintenance



## Assurance Issues

- Are customers attacked less often because of certified or evaluated products?
- Are attacks less successful against certified or evaluated products?
- How can we measure the value of assurance?
- Does assurance mean that vendors build better products?

## Cisco's Commitment to Security

- Cisco recognizes security as the enabler for E-Business
  - -Established significant market share in all network-related security product classes (VPN, Firewall, IDS)
  - - Increasing integration of security functions into wide range of products for Service Provider, Enterprise, SOHO/ROHO customers



## Cisco Resources

**www.cisco.com/go/securitycert**

Robin Roberts
Product Manager -
Security Certifications
roberts7@cisco.com
703-484-5136



EMPOWERING THE
INTERNET GENERATION℠

# PEITER "MUDGE" ZATKO

# PEITER MUDGE ZATKO

Chief Scientist & Vice President of Research and Development

Chief Scientist and Vice President of Research and Development, Peiter Mudge Zatko oversees @stake's Information Technology group as well as the Research and Development arm of the company.

Formerly CEO and Chief Scientist of L0pht Heavy Industries, Zatko is widely sought after as a keynote speaker in various forums, including one that addressed electronic threats to national security. He has testified before the Senate Committee on Governmental Affairs and has been a witness for the House and Senate joint Judiciary Oversight committee. Mr. Zatko has briefed a wide range of Congressional members and has conducted training courses for the Department of Justice, NASA, the United States Air Force, and other government agencies. In February 2000, following the wave of denial of service attacks on consumer Web sites, Zatko participated in President Clinton's security summit at the White House.

A recognized name in cryptanalysis, Zatko's writings on the subject have appeared in various academic proceedings. He is also the original author of "L0phtCrack", the award winning NT password auditing tool. Zatko has contributed security research work that has become part of Windows NT, Solaris, Linux, *BSD, and Kerberos, in addition to a number of major network security scanners.

# NEWS ON CONFERENCE TOPICS

TIME.com

November 26, 2001 Vol. 158 No. 23

# Keeping The Hackers At Bay

BY RHETT BUTLER AND ANDREW GOLDSTEIN

When it comes to cyberwarfare, America has a secret weapon: Georgetown University professor Dorothy Denning. Battles in cyberspace are high-tech brain races: you win by being the first to recognize the weaknesses of a new technology--often hacking it yourself--and then figuring out how to protect it.

This is what Denning has been doing for nearly three decades. In the 1970s, when most people thought information security meant locking your file cabinets, Denning devised a way for federal agencies such as the IRS to release vital information while keeping its most sensitive data secure. As computer systems became more complex, she discovered a system now widely used for detecting intruders in real time, rather than combing through log-in records after the fact.

And now she's pioneering a new field she calls geo-encryption. Working with industry, Denning has developed a way to keep information undecipherable until it reaches its location, as determined by GPS satellites. Movie studios, for example, have been afraid to release films digitally for the same reasons record companies hate Napster: once loose on the Internet, there's little to stop someone from posting the latest blockbuster DVD on the Web for all to see and download. With Denning's system, however, only subscribers in specified locations--such as movie theaters--would be able to unscramble the data. The technology works as well for national security as it does for Harry Potter. Coded messages that the State Department sends its embassies, for example, could only be deciphered in the embassy buildings themselves, greatly reducing the risk of interception.

For now, Denning says, terrorists "may want to bring down the power grid or the finance system, but it's still easier to blow up a building." If she's right, it's due in large part to her.

# Minutes of the eclipse.org Board Meeting
# November 29th, 2001

The first meeting of the eclipse.org Board was held at 0930 CST on Thurs Nov 29, 2001, at Chicago - O'Hare Airport, American Airlines Admiral's Club, Executive Meeting Facility.

The following are the minutes of this meeting.

**Stewards in Attendance:**

| | | |
|---|---|---|
| Bernstein, Dave | Rational | |
| Dodge, Dan | QNX | |
| Geck, Juergen | SuSE | |
| Nackman, Lee | IBM | |
| Nolen, Thor | Red Hat | (on behalf of Tiemann, Michael) |
| Olson, Tod | TogetherSoft | |
| Weiss, Andrew | Merant | |

**Meeting Objectives:**

1. Introduce and form eclipse.org, eclipse.org Board, and authorize the building of the eclipse community;
2. Discuss and decide on eclipse.org Board business, technical, and marketing issues and policy;
3. Announce the formation of the eclipse.org Board via a WebCast; and
4. Informal information exchange among members.

**Meeting Agenda:**

1) Board Introductions;
2) Establish Meeting Objectives;
3) Business & Organization:
    Form eclipse.org;
    Adoption of Membership Agreement;
    Adoption of By-laws;
    Selection of founding member organizations;
    Selection of voting members of the eclipse.org Board (Stewards);
    Selection of Associate Members;
    Selection of officers;
    Creation of Executive Committee; and
    Definition of roles and responsibilities of Executive Committee.
4) Technical:
    Form PMC's and review technical plans;
    Create Eclipse Project PMC, Approve Charter, review plans and appoint leader;
    Create Eclipse Tools PMC, Approve Charter, review plans and appoint leader; and
    Steward requirements, issues and questions.
5) Marketing:
    eclipse.org press review;
    eclipse.org analysts review;
    eclipse.org launch review;
    Member organizations and eclipse.org cross linkage;
6) WebCast: Announcement and launch the formation of eclipse.org; and

7) Informal information exchange.

## Organizational Issues

**Adoption of Membership Agreement**
The Board approved the eclipse.org Membership Agreement. The eclipse.org Membership Agreement is provided at www.eclipse.org. The Steward vote was unanimous.

**Adoption of By-laws**
The Board approved the By-laws for eclipse.org. The eclipse.org By-laws are provided at www.eclipse.org. The Steward vote was unanimous.

**Selection of founding member organizations**
The following organizations were approved for membership in the eclipse.org Board: Borland, IBM, Merant, QNX, Rational, Red Hat, SuSE, TogetherSoft, and WebGain. The list of eclipse.org Member Organizations is provided at www.eclipse.org. The Steward vote was unanimous.

**Discussion of the Roles and Responsibilities of Members**
The eclipse.org Board discussed and agreed that the following represented the roles and responsibilities of the eclipse.org Board members. The duties and responsibilities are defined in By-laws and Membership Agreement as published on www.eclipse.org.

**Selection of voting members of the eclipse.org Board (Stewards)**
The following individuals were approved as Stewards and voting members of eclipse.org Board:

| Member Organization | Steward |
|---|---|
| Borland | Simon Thornhill |
| IBM | Lee Nackman |
| Merant | Andrew Weiss |
| QNX | Dan Dodge |
| Rational | Dave Bernstein |
| Red Hat | Michael Tiemann |
| TogetherSoft | Todd Olson |
| SuSE | Juergen Geck |
| WebGain | Earl Stahl |

The Steward vote was unanimous.

**Academic Associate Member of the eclipse.org Board**
An associate non-voting member of the eclipse.org Board representing the academic community was created. Dr. Brian Barry was appointed to serve in that capacity. The duties and responsibilities of the Associate Member are defined in By-laws and Membership Agreement as published on www.eclipse.org. The Steward vote was unanimous.

# Minutes of the eclipse.org Board Meeting
# November 29th, 2001

**Industry Associate Member of the eclipse.org Board**
The eclipse.org Board requested the Executive Committee review and recommend the appropriate roles, responsibilities, and representation of an Industry Associate Member to the eclipse.org Board. This membership might include analysts, user groups, open source experts, and individuals with specialized skills or background. The eclipse.org Board is very interested in creating a bi-directional information flow between eclipse.org and the industry. The Chairperson is to report back to the board at the 1Q02 eclipse.org Board Meeting. Linda Campbell of QNX will be responsible for this work item.

**Creation of Chairperson Position**
The eclipse.org Board decided to create a non-voting board officer to serve as Chairperson. The duties and responsibilities are defined in By-laws and Membership Agreement as published on www.eclipse.org. The Steward vote was unanimous.

**Appointment of Chairperson**
The eclipse.org Board decided to appoint Skip McGaughey as Chairperson. The Steward vote was unanimous.

**Creation of Secretary Position**
The eclipse.org Board decided to create a non-voting board officer to serve as Secretary. The duties and responsibilities are defined in By-laws and Membership Agreement as published on www.eclipse.org. The Steward vote was unanimous.

**Appointment of Secretary**
The eclipse.org Board asked the Chairperson to nominate a person to serve as Secretary to the Board. This recommendation should be made to the Board at the next Board 1Q02 meeting.

**Discussion and definition of the roles and responsibilities of Executive Committee**
The eclipse.org Board decided to define the following roles and responsibilities of the executive committee.

- Represent interest & responsibilities of Steward
- Serve at pleasure of Steward
- Responsible for day-to-day operations of eclipse.org
- Formulate recommendations to the Board
    - Formulate consensus
    - Conflict & issue resolution
- Serve as primary interface into member organization
    - Coordination, communication, and control of the following eclipse.org activities within member organization:
        - Marketing
        - PR
        - Launch
        - Analysts Relations
- Create a forum for dialogue where the community and PMC need outside assistance

# Minutes of the eclipse.org Board Meeting
# November 29th, 2001

**Creation of eclipse.org Executive Committee**
The eclipse.org Board decided to create an Executive Committee. The membership of the executive committee will include: one representative appointed by each Steward, PMC leaders, and the eclipse.org Board Chairperson. The duties and responsibilities of the eclipse.org Executive Committee are defined in By-laws and Membership Agreement as published on www.eclipse.org. The Steward vote was unanimous.

**Project Issues:**

**Establish Eclipse Project PMC, approval of charter**
The eclipse.org Board approved the Eclipse Project Charter. This charter is provided at www.eclipse.org. The Steward vote was unanimous.

**Election of Eclipse Project PMC Leader**
The eclipse.org Board appointed Dave Thomson to serve as the PMC Lead for the Eclipse Project. The Steward vote was unanimous.

**Establish Eclipse Tools Project PMC, approval of charter**
The eclipse.org Board approved the Eclipse Tools Project Charter. This charter is provided at www.eclipse.org. The Steward vote was unanimous.

**Election of Eclipse Tools Project PMC Leader**
The eclipse.org Board appointed John Duimovich to serve as the Eclipse Tools Project PMC Leader. The Steward vote was unanimous.

**Discussion of the Eclipse Tools Project**
The eclipse.org Board asked the Eclipse Tools Project PMC Leader to create and provide an eclipse based C/C++ tool IDE as a high priority and to report back to the eclipse.org Board at the 1Q02 meeting the progress and plan for the eclipse based C/C++ tool IDE.

**Quarter-by-quarter technical plan for eclipse.org projects**
The eclipse.org Board decided to review eclipse.org technical plans and progress on a quarter-by-quarter basis. The PMC leaders have been asked to communicate to the Board each quarter the following:

- Pressures
  - Business
  - Market
  - Technical
- Deliverables and Plans
- Resource prioritization
- Dependencies
- What has been added since last review
- What has been deleted since last review
- Schedules

The Executive Committee should decide the format for this review.

# Minutes of the eclipse.org Board Meeting
# November 29th, 2001

**Steward technical requirements, issues, and questions**
The eclipse.org Board asked the Chairperson to organize each Board meeting to include:
- A topic to discuss requirements, issues and technical questions that the Stewards have concerning the PMC plans and community activity; and
- A topic for each Steward to present to the other Stewards the member organization plans and technical direction.

**Establishment of eclipse.org Research PMC**
The eclipse.org Board approved in principle the creation of a Research PMC. Dr. Brian Barry was asked to develop a concrete proposal, documentation, charter, list of projects and membership roles & responsibilities for review and approval by the eclipse.org Board for the next Board meeting.

**Support of Eclipse Platform and Tools**
The eclipse.org Board discussed and asked the PMC Leaders of the Eclipse Platform Project and the Eclipse Tools Project to:
- Understand the service and support requirements of the member organizations;
- Define a written proposal to the eclipse.org Board at the next Board Meeting;
- This proposal to include a definition of different levels of service / support, the policies and practices of fixing back level code, the policies and practices for testing Eclipse Platform and Eclipse Tools, the feasibility of doing automated testing, and the experiences of other open source communities; and
- Review this proposal with SuSE, Rational, and Red Hat before it is presented at the next Board Meeting.

**Poll of Stewards to determine member wants and needs**
The eclipse.org Board asked the Chairperson to conduct an informal survey of the wants and needs of each member organization, Steward, and the Executive Committee Member pertaining to eclipse.org. The Chairperson is to track this on a quarter-by-quarter basis and report back to each respective Steward on the progress.

**Formation of a legal advisory team**
The eclipse.org Board asked the Chairperson to create a legal advisory team. Each Steward has the opportunity to designate a legal representative to advise the Executive Committee and eclipse.org Board concerning legal issues with the scope to include: Intellectual Property, structure, code acceptance and inclusion, licensing, trademarks, copyrights, and liability.

**Membership Application Process and Strategy for Growth**
The eclipse.org Board directed the Chairperson and the Executive Committee to propose at the next Board meeting: a membership application process; a strategy for the growth of eclipse.org; and a set of criteria to measure the success of the application process and growth strategy.

# Minutes of the eclipse.org Board Meeting
# November 29th, 2001

**Announcement of eclipse.org by the eclipse.org Board:**

The eclipse.org Board announced the creation of eclipse.org via a WebCast hosted by YAHOO.COM.

WebCast Host, Andrew Weiss
Overview Presentation, Dave Bernstein
Steward Presentations:

- SuSE, Jeurgen Geck
- QNX, Dan Dodge
- TogetherSoft, Todd Olson
- IBM, Lee Nackman
- Rational, Dave Bernstein
- Merant, Andrew Weiss
- Other Stewards were introduced including
- Red Hat, Michael Tiemann
- Borland, Simon Thornhill
- WebGain, Earl Stahl

The WebCast is available at www.eclipse.org through the month of February 2002.
The presentations are available at www.eclipse.org.

The eclipse.org press release is available at www.eclipse.org.

**Adjournment:**

The meeting ended at 1645 Central time.

# eclipse.org formation

the open community driving the eclipse platform

Press release

# Eclipse.org Consortium Forms to Deliver New Era Application Development Tools

- Industry Leaders Join to Form Initial Board
- Broad Commercial Support For Open Source Development Tools
- Common Public License Delivers Royalty Free Source Code

Chicago—Nov. 29, 2001–Borland, IBM, Merant, QNX Software Systems, Rational Software, RedHat, SuSE, and TogetherSoft today announced the formation of Eclipse.org, an open consortium of providers of development tools that manages the Eclipse Platform, which is being made available in open source under the Common Public License[1]. These companies, each of which plans to release Eclipse Platform compatible product offerings, form the initial Eclipse.org board of directors. The bylaws and operating principles of the organization are published at http://www.eclipse.org.

The Eclipse Platform is a new open source environment for creating, integrating and deploying application development tools for use across a broad range of computing technology. It provides a common set of services and establishes the framework, infrastructure and interactive workbench used by project developers to build application software and related elements. Through the Eclipse Platform, seamless integration of tools from several different vendors will be possible on Windows™, Linux® and QNX® developer workstations.

The Eclipse Platform provides source code building blocks, plug-in frameworks and running examples that facilitate application tools development. A complete sample plug-in based integrated development environment for creating Java applications (JDT) is included. Code access and use is controlled through the Common Public License[1] allows individuals to create derivative works with worldwide re-distribution rights that are royalty free.

As with other open source communities, Eclipse.org brings together the broad participation needed to establish, refine and promote high-quality shared software technology. By taking advantage of common Eclipse Platform services, software tools developers are free to focus on their domains of expertise. Since the platform became available for download on November 7th, an average of more than 4,000 downloads have been logged daily.

The Eclipse Platform can be used to create and manage diverse objects like web site elements, process automation definitions, object models, image files, C++ programs, pervasive enterprise class Java™ applications and embedded technology. Written in the Java language, it comes with plug-in construction toolkits and examples, including a fully operational Java application development tools package. The platform implements a mechanism that discovers, loads and integrates the plug-ins developers need for manipulating and sharing project resources. When the Eclipse Platform is launched, the user is presented with a workbench-based integrated development environment composed of the user interfaces of available plug-ins.

"In the Eclipse environment everything is a plug-in. The Java IDE doesn't have a special status and is just another set of plug-ins. This demonstrates the seamless extensibility of the platform. Turning the Eclipse Platform over to an open source initiative enables all tool builders to contribute new plug-ins and also help improve the existing platform," said Erich Gamma, technical director of Object Technology International's Zurich lab and a member of the team that built the JDT plug-ins distributed with the Eclipse Platform.

From Industry Leaders Serving on the Eclipse.org Board:

"Borland is pleased to be a founding board member of the Eclipse.org consortium, and looks forward to working with other industry leaders to establish open standards," said Simon Thornhill, VP and GM of rapid application development solutions for Borland Software Corporation. "Our involvement with Eclipse further exemplifies our continued commitment to enable enterprises of all sizes to develop, deploy and integrate next-generation software solutions."

"IBM is very proud to be helping make Eclipse.org a level and open effort, supported by a large number of leading commercial tool developers," said Lee R. Nackman, vice president, Application Development Tools, Application and Integration Middleware Division, IBM Software Group. "We look forward to benefits across the entire computing industry as powerful tools from so many companies inter-operate and deliver improvements to the project development process itself. We are committed to using the Eclipse Platform as the foundation for strategic IBM application development products."

"We're very impressed by the power and flexibility of the Eclipse Platform," said Andrew Weiss, MERANT chief technology officer. "As a founding member of the board of directors for the open Eclipse.org consortium, we are committed to providing MERANT's current and potential customers with plug-ins to extend and complement Eclipse with familiar solutions like PVCS, our software configuration management and web and content management technologies."

"Embedded developers need an extraordinary range of tools, but to be truly productive, they need tools that can work together in a seamless, intuitive fashion," said Dan Dodge, president and CTO of QNX Software Systems Ltd. "With the Eclipse Platform, it's now much easier for developers and tool vendors to integrate their rich toolsets into a cohesive whole. At QNX Software Systems, we're proud to serve as a founding member of the Eclipse.org consortium and are dedicated to its vision of making embedded development more productive through inter-operable tools."

"Rational Software has been an early adopter of the Eclipse platform because we believe it delivers high value to software teams," said Dave Bernstein, senior vice president of Products for Rational Software. "We've been working closely with IBM to integrate our products with Eclipse to ultimately provide a single, integrated user experience for developers and other practitioners on a software team."

"As the open source community grows, we need open source development tools that meet the needs of more and more developers," said Michael Tiemann, CTO of Red Hat. "We are pleased to be taking a leadership position with Eclipse.org, not only to help put better tools in the hands of developers, but to help developers use the open source model to ultimately create better tools."

Juergen Geck of SuSE Linux AG commented: "The success of Linux and the Open Source computing model has changed the IT landscape. As this change matures, we see new open systems that extend the power of open development. SuSE is proud to be an active part in the evolution of the Eclipse Platform with its excellent capabilities for developing applications for middleware, such as database and groupware systems."

"TogetherSoft's mission of 'improving the ways people work together' is certainly embraced in the spirit of the Eclipse Platform," said Todd Olson, TogetherSoft's vice president of Together Products. "TogetherSoft is committed to supporting new technologies that benefit our customers. We welcome the opportunity to help shape and enhance them by leveraging our strong experience building software for software developers."

Full details of the Eclipse.org consortium and the design of the Eclipse Platform are available at http://www.eclipse.org.

## About Eclipse.org

Eclipse.org is an open consortium of software development tool vendors that has formed the core of a community interested in collaborating to create better development environments and product integration. The community shares an interest in creating products that are inter-operable in an easy to use way based upon plug-in technology. By collaborating and sharing core integration technology, tool vendors can concentrate on their areas of expertise and the creation of new development technology.

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(1) Some components of Eclipse may be governed by license terms other than the CPL.



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Return to the eclipse.org consortium main page

# press releases and community bulletins

Current Nov 2001 - Dec 2004

## eclipse.org press releases and community bulletins - current year

- Eclipse Foundation Announces Keynotes for EclipseCon 2006 - October 25, 2005
- Zend becomes a Strategic Developer Member of the Eclipse Foundation - October 21, 2005
- Ralph Mueller Joins the Eclipse Foundation - October 21, 2005
- Ward Cunningham Joins the Eclipse Foundation - October 19, 2005
- Eclipse 3.1.1 Translation Packs Available! - October 12, 2005
- Eclipse Foundation Announces Support for OSGi Service Platform R4 Specification - October 11, 2005
- Nokia Joins Eclipse Foundation as Strategic Developer and Board Member - September 19, 2005
- IONA Joins Eclipse Foundation as Strategic Developer to Lead Proposed SOA Tools Platform Top-Level Project - September 12, 2005
- Eclipse Foundation and Sybase Announce Approval of Eclipse Data Tools Platform Project - August 29, 2005
- Eclipse Foundation Announces CDT 3.0 - August 22, 2005
- Eclipse Foundation and Serena Software Announce Approval of Eclipse Application Lifecycle Framework Project - July 27, 2005
- Eclipse Foundation and Versant Announce Approval of Eclipse JSR220-ORM Project - July 22, 2005
- Eclipse Delivers Tools Platform for Software Development Lifecycle - June 27, 2005 (Deutsch)
- Eclipse Enhances Rich Client Platform - June 27, 2005 (Deutsch)
- Eclipse Foundation Reaches 100 Members - June 27, 2005
- Eclipse Foundation and Wind River Announce Approval of Device Software Development Platform Project - June 14, 2005
- Eclipse Brings Open Source to Business Intelligence Market - June 6, 2005
- Eclipse Foundation Launches New Web Infrastructure to Support the Expanding Eclipse Community - June 1, 2005
- Los Alamos Developing New Eclipse-Based Tools for High-Performance Parallel Computers - April 12, 2005
- Eclipse Japan Working Group - April 11, 2005
- Wind River Becomes a Strategic Developer Member of Eclipse; Proposes the Foundation's First Device Software Development Project - March 8, 2005
- Computer Associates Becomes a Strategic Developer Member of the Eclipse Foundation - March 1, 2005
- Eclipse Momentum Culminates in 2nd Annual EclipseCon 2005 - March 1, 2005
- Eclipse Community Thrives at EclipseCon 2005 - March 1, 2005
- Eclipse Makes BIRT Modules Available - March 1, 2005
- Multi-Vendor Support Drives Adoption of Eclipse TPTP - March 1, 2005

- Eclipse Foundation Makes Available Web Services Tools - March 1, 2005
- Borland becomes a Strategic Developer Member of the Eclipse Foundation - February 28, 2005
- Eclipse Foundation Announces Election Results - February 28, 2005
- Eclipse.org Hardware Migration: Phase II - Planned Outage on Saturday, March 19, 2005 - February 25, 2005
- BEA and Sybase Join the Eclipse Foundation as Strategic Developers - February 22, 2005
- Eclipse.org Hardware Migration: Phase I - Planned Outage on Sunday, February 20, 2005 - February 16, 2005
- Scapa Technologies Becomes an Eclipse Strategic Developer and Joins Board of Directors February 7, 2005
- EclipseCon 2005 Adds a Business Forum to Conference Program January 12, 2005

## eclipse.org press releases November 2001 - December 2004

- Eclipse Test & Performance Tools Platform Project Announces Availability of Release 3.2 December 21, 2004
- EclipseCon 2005 Announces Gold-Level Sponsors December 9, 2004
- EclipseCon 2005 Announces Conference Keynotes November 8, 2004
- Eclipse.org Infrastructure Migration: Phase II October 25, 2004
- Eclipse.org Infrastructure Migration October 13, 2004
- Independent Eclipse Foundation Accelerates Momentum of Eclipse October 6, 2004
- Eclipse Foundation and Actuate Announce Approval of Business Intelligence and Reporting Tools Project October 6, 2004
- Eclipse Wins Big at SD Readers' Choice Awards October 1, 2004
- Project Proposal for Eclipse Communications Project September 16, 2004
- Project Proposal for Embedded Devices submitted by IBM, Motorola and Nokia August 30, 2004
- Actuate Joins Eclipse Foundation as Strategic Developer and Board Member August 24, 2004
- Expanded Broad-Based Eclipse Initiative Delivers Open Test and Performance Tools Platform August 2, 2004
- Eclipse Launches Web Tools Platform Project July 26, 2004
- The Eclipse Foundation, Instantiations and BEA Announce Formation of Eclipse Project to Integrate with Apache Beehive June 28, 2004
- Eclipse 3.0 Delivers Universal Platform for Application Construction June 21, 2004
- Mike Milinkovich Named Eclipse's Executive Director June 1, 2004
- Eclipse Names Founding Board of Directors March 3, 2004
- Eclipse Forms Independent Organization February 2, 2004
- Eclipse Celebrates Second Anniversary November 25, 2003
- Eclipse Project Hyades to Implement UML Test Profile April 15, 2003
- Eclipse Platform R2.1 Now Available April 15, 2003
- Eclipse Announces Milestone for Linux, Embedded and C/C++ Software Development March 31, 2003
- Palo Alto Research Center and Eclipse announce release of AspectJ to the Open Source Community March 18, 2003

New Eclipse Project Addresses Collaborative Development Infrastructure Requirements December 19, 2002

- New Eclipse Project Addresses Automated Software Quality December 17, 2002
- Momentum Builds as Eclipse Eco-System Grows December 16, 2002
- New Eclipse Open Source COBOL IDE Project December 5, 2002
- New Eclipse Platform R2.0 Goes International September 18, 2002
- Technology Project supports research, education and engineering initiatives August 20, 2002
- GEF project and new members press release May 15, 2002 - (MSWord)
- eclipse.org consortium press release November 29, 2001

For problems with the eclipse.org site, please contact the webmaster

[ Lou V. Gerstner, Jr. (Jan. 01, 2001). IBM Annual Report, 2001, $40 million funding of the Eclipse Foundation, PDF p. 21. IBM. Source: https://www.fbcoverup.com/docs/library/2001-01-01-IBM-Annual-Report-Jan-01-2001.pdf#page=21 ]



DEAR FELLOW INVESTOR,

This is my last annual letter to you.

By the time you read this, Sam Palmisano will be our new Chief Executive Officer, the eighth in IBM's history. He will be responsible for shaping our strategic direction, as well as leading our operations. For a discussion of IBM's performance in 2001, I invite you to read Sam's first letter to shareholders, starting on page 45.

I want to use this occasion to offer a perspective on what lies ahead for our industry. To many observers today, its future is unclear, following perhaps the worst year in its history. A lot of people chalk that up to the recession and the "dot-com bubble." They seem to believe that when the economies of the world recover, life in the information technology industry will get back to normal.

*In my view, nothing could be further from the truth.*

A massive shift is under way in our industry. You may think I mean the transition to a networked world. After all, IBM was one of the first to recognize this change and the impact it would have. And make no mistake, we are experiencing an explosion of technological innovation that will lead to permanent changes in business, government, education, health care and every other area of human endeavor—as every significant institution, every product and service, as well as billions of people, become permanently "connected."

But that's not the shift I'm talking about. The revolution I'm describing is that customers are finally driving the direction of the information technology industry.

## Technologists Talking to Technologists

The first 30 years of this industry's history consisted of the technology inventors inside I/T companies talking to the technology implementers inside businesses and institutions. For most of that era, the applications of the technology were fairly limited—focused on the automation of back-office processes like accounting and payroll, or desktop applications such as word processing and e-mail.

Then, starting in the early 1990s, businesspeople began to understand the importance of information technology to everything they wanted to do. It's gotten to the point where it's almost impossible to distinguish between the business strategy and the I/T strategy of any successful enterprise. Approximately half of the investments that customers make in I/T are now driven by line-of-business managers, not chief information officers. This is a remarkable shift in just five or six years. Not that CIOs have become unimportant. They now sit at the table where technology is translated into business value. And their traditional bailiwick of infrastructure, too, has been transformed by the networked world. But there's no question that business strategy now sets the technology agenda, not the other way around.

Prior to joining IBM, my career as a management consultant and executive took me inside the inner workings of many industries. So I was surprised, on entering this one, to learn that the computer industry had been able to get away with inventing new things and just "throwing them over the wall," leaving customers to figure out how to integrate and apply them. That wasn't easy for those customers, for a lot of reasons. One was the absence of common standards. The industry model was designed around a variety of proprietary architectures (which, to be candid, technology providers were using to control customers).

This came as quite a shock to me, since all my prior experience had taught me that you either give the customer what he or she wants, or the customer walks. Well, guess what? Customers have finally put on their walking shoes. They've made it emphatically clear to this industry that they will no longer cede control to the makers of the technology.

That means customers are demanding integration, and refusing to accept piece parts that aren't designed and delivered to work together. It means they are demanding solutions, not "speeds and feeds." And it means they insist that the technology adapt itself to the needs of their business and help them gain some tangible competitive advantage—to squeeze cost from

their supply chains, to create lasting relationships with customers, to empower their key constituencies (internal and external) with tools and knowledge.

## A Tale of Two Revolutions

So the past decade hasn't seen just one major shift, it's seen two. For IBM, this was good news. Even in the depths of our decline, in 1993, it was obvious that no other company had both the technical expertise to win product battles against competitors *and* the business knowledge to become a trusted partner for its customers. Contrary to the conventional wisdom of pundits, analysts, the media (and, of course, our rivals), IBM still had a *raison d'être.*

Of course, we had to unlock both capabilities, and, in fact, make them feed each other. That goal—creating a business model that uniquely combines technical and business innovation, a company with one foot in the lab and one in the boardroom—underpins the new IBM we set out to build.

Thus, the big decision we made early on—to reverse the then-current plan to break up the company and commit instead to making all of IBM's parts work together—was a fairly easy one. It didn't involve a lot of research or market analysis. The real question in my mind was not "Should IBM exist?" but rather, "Can we become what this new era demands?" Put another way: Could we aspire to lead again? I can't think of many companies, in any industry, that have led two eras. But I can tell you now that, even in the dark days, we began believing that we could defy history.

Of course, that's like deciding to climb Mount Everest. You still have to climb the mountain! And we weren't starting our trek from an elevated base camp, or even from sea level. This annual report captures a sense of the sheer range of what was involved to pull it off.

Through it all, our guiding light came down to two words: customer focus. It has proved both galvanizing and clarifying, serving as the criterion for reexamining a whole lot of dogma, and for resolving many of our seemingly intractable internal debates.

Was it okay for IBM Global Services to recommend competitors' hardware or software? Should the IBM software business develop solutions for Sun or HP servers? How about letting our hardware units support Oracle or Microsoft products? In every case, the answer was: We'll do what customers want.

Once we started really listening to customers, it's striking how many aspects of our business improved—and not just on the market-facing side, but also in procurement, with our suppliers and even in technology, where the quality and quantity of our output have benefited enormously from exposure to the marketplace.

This is important. The relationship between business and technology isn't one-way. Technology itself isn't some force of nature that we simply direct or use. It, too, is the product of human intentionality and choice. So yes, we apply technology to solve customer problems. And we also apply marketplace knowledge to help shape our research agenda—whether it's the direction of the economy, or growth opportunities, or emerging forms of governance and education, or demographic and social trends, or discoveries in other fields such as life sciences.

A decade ago, the two were disconnected—and one of them was running amok. Technology was being pursued for

its own sake, and was either buried in labs (in the case of IBM), or generating premature visions of business triumph (in the "build it and they will come" fantasies of the dot-com paper billionaires and "new economy" moguls).

We needed to reassert a proper balance. And that led, in IBM, to a handful of strategic bets on the future drivers of our industry. I would highlight four.

**1. THE NEW INDUSTRY MODEL:** *Innovate or Integrate*

To survive, you have to do one or the other really well. To lead, you have to do both.

The vertical integration of the technology industry in the '60s and '70s had given way by the early 1990s to a dizzying array of "pure play" companies (specialists in PCs, databases, application software and the like). This explosion of entrepreneurial and technical creativity was, on the one hand, a testament to our industry's enduring power. It's a well that will never run dry.

Businesses, however, desperately needed someone to help them make sense of this chaos. Hence, the emergence over the past several years of technology integrators—and the rush of traditional professional services companies into e-business consulting.

As I/T moves out of the back office and into the executive suite, value and growth in our industry are driven less than they used to be by technical innovation or product excellence, as necessary as those remain. What matters most today is the ability to integrate technology into the lifeblood of business. The people who help customers apply technology to transform their businesses have increasing influence over everything from architecture and standards to hardware and software choices and partners.

**2. THE NEW BUSINESS MODEL:** *Services-Led*

A lot of people now understand the lead role played by I/T services. However, building up the requisite skill base, not to mention an appropriately sophisticated management system, is nontrivial. You can't buy your way into it, or just go out and hire a lot of smart people. You need a certain scale and range of disciplines. Also, you can't just layer one kind of expertise on top of another. This isn't just filling up two beakers, one labeled "customer" and the other labeled "technology." It takes years and a lot of knowledge to be able to mix those elements properly.

Plus, services is rapidly expanding and evolving in some surprising ways. It now encompasses not just labor-intensive consulting, but also the utility-like delivery of computing—from applications, to processing, to storage. We see the beginnings of this trend in Web hosting and our own "e-business on demand" offerings, where customers don't buy computers, but acquire computing services over the Net, on a pay-for-use basis. To play here, as well as in the globally booming strategic outsourcing arena, you have to be willing and able to use your balance sheet to support growth.

IBM, of course, had deep experience in I/T services. But in our old business model, it was buried inside a revenue stream dependent on selling hardware. We had to extract our service operations and turn them into a profit center in their own right. That involved a lot of trial and error. But today, IBM Global Services has evolved into the world's largest and most innovative consultancy, systems integrator and strategic outsourcing leader.

**3. THE NEW COMPUTING MODEL:** *Infrastructure Plus Ubiquity*

It became clear to some of us in the mid-'90s that the PC-driven, client/server computing model had run its course, and was being replaced by network-based, distributed computing. This meant that, on one end of the scale, the workload was moving back to the infrastructure—to industrial-strength servers, storage, databases and transaction-management systems. On the client end, it has spawned a proliferation of network-connected devices of all kinds: PDAs, cell phones, videogame systems, set-top boxes and beyond—to the whole pervasive-computing world of embedded components in everything from household appliances, to medical devices, to cars. And tying it all together was an emerging category of software with a wonderfully descriptive name, which hardly anybody had heard of five years ago—middleware.

It stood to reason that, in a distributed model, profitability would be distributed, too. So we zeroed in on three sweet spots of the new computing "stack": enterprise systems, integrating middleware, and the specialized, high-value components (such as custom chips) that turn every sort of device into a computer.

This is anything but a "portfolio" approach. We're not just hedging our bets, and we're certainly not trying to be all things to all people. Our choices have been about both what businesses to pursue aggressively, and what ones to exit (such as enterprise application software and networking hardware).

• In enterprise systems, we retooled our storage family and entirely revamped and consolidated our server lines. And, let the record note, we didn't accept another piece of conventional wisdom—we didn't give up on the mainframe. Like IBM, it's back—transformed, more powerful, and doing quite nicely.

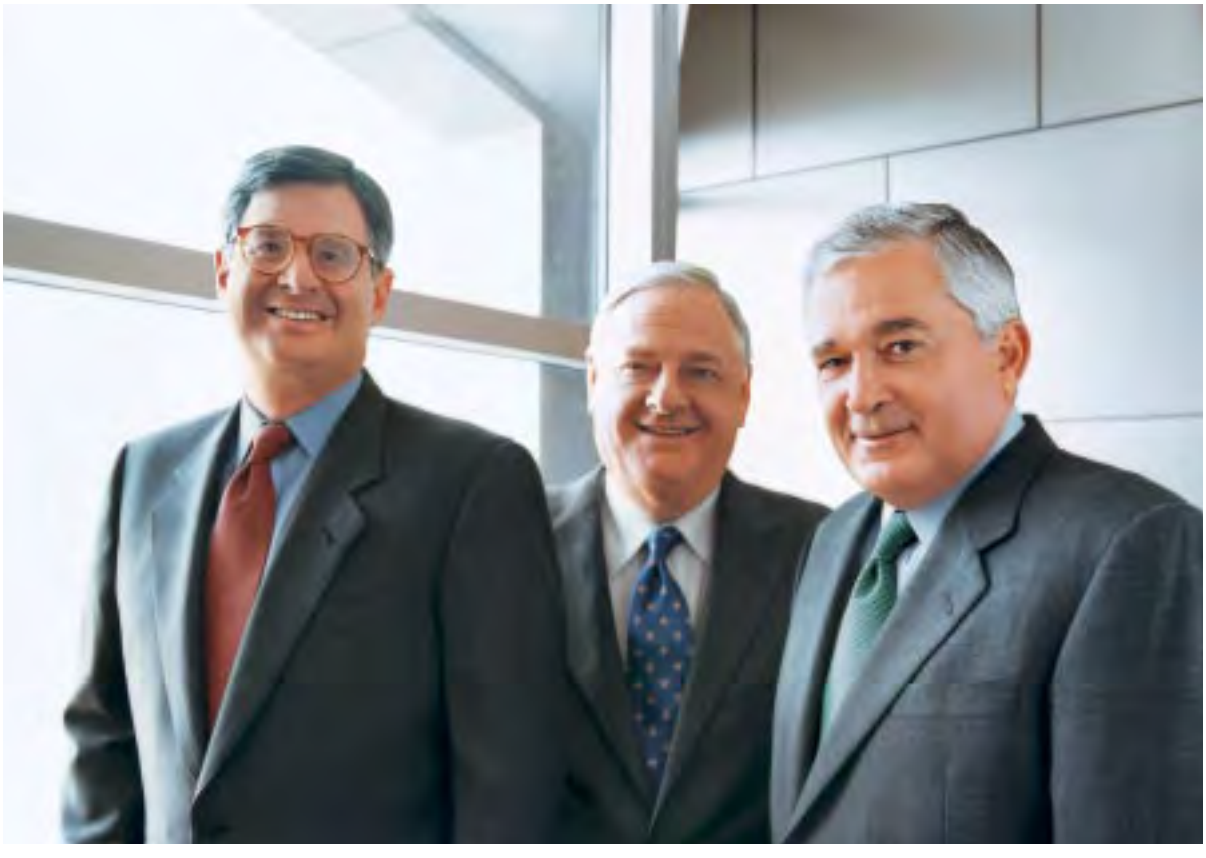
• In software, through acquisition and internal development, we built the biggest middleware business in the world. That's fortunate, because middleware—which helps customers integrate their applications and processes—has emerged as the fastest-growing sector of the software industry. As a development platform, it's becoming more important than operating systems. And that, in turn, has helped IBM Software to become more deeply integrated into the wider software industry than ever before, much better positioned to share in its future growth.

• In component technology, what began as a search for a new revenue stream to support our R&D expenses turned into a significant growth engine in its own right—our OEM, or original equipment manufacturer, business. Yes, that part of IBM has been hit by the general downturn in technology purchasing. But we remain confident in the long-term future of the business, which is based on exactly the kinds of specialized components for which demand will be greatest in a post-PC world.

Of course, we are no longer alone in drawing this new computing model. But while pretty much everyone now agrees on the outlines, there is much disagreement about the approach. Basically, it comes down to whether you believe in interoperability and common standards or not. We have certainly placed our bet.

**4. THE NEW MARKETPLACE MODEL:** *An Open Playing Field*

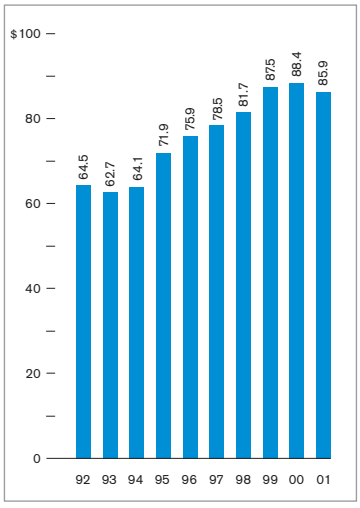
A lot of companies—including many of our leading competitors—still don't acknowledge or fully understand that common standards are essential in a networked



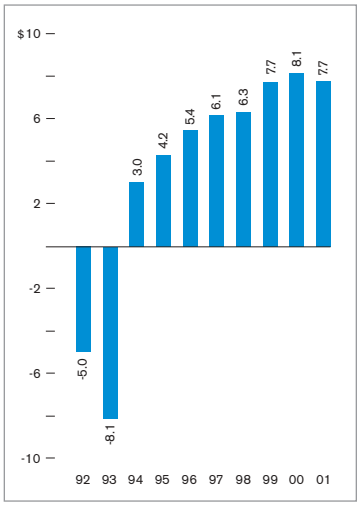
**SAMUEL J. PALMISANO**
President and Chief Executive Officer

**JOHN M. THOMPSON**
Vice Chairman of the Board

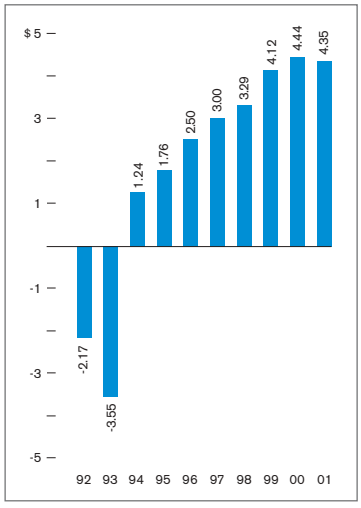
**LOUIS V. GERSTNER, JR.**
Chairman of the Board



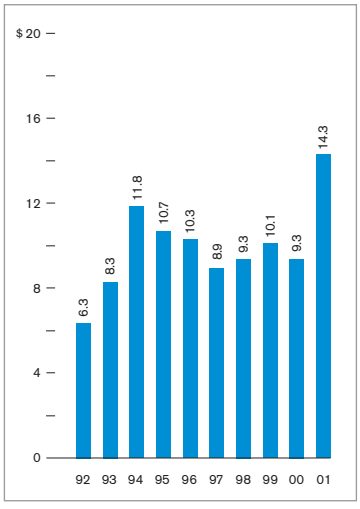

**REVENUE**
($ in billions)



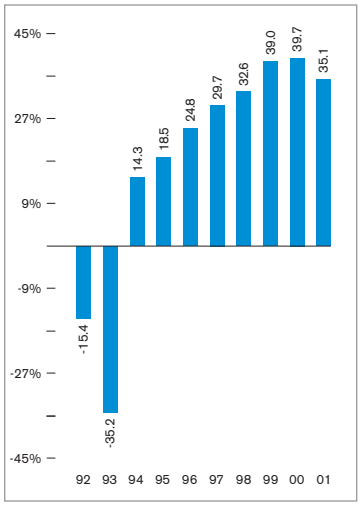

**NET INCOME**
($ in billions)




**EARNINGS PER SHARE—DILUTED**




**CASH FLOW FROM OPERATIONS**
($ in billions)




**RETURN ON STOCKHOLDERS' EQUITY**

world, and that no one will ever again control customers through proprietary technology.

We can certainly appreciate their struggle. We've had to turn a company that long ago made its fortune from proprietary technologies into one that saw the benefits of openness. Maybe it's precisely because we were so acutely aware of the siren call of proprietary control that we have learned to resist it. But one thing is apparent: In a customer-driven world, open architectures and common standards are inevitable.

Today, we are focusing all our technical expertise and marketing energy—previously devoted to creating and marketing self-sufficient systems—toward reimagining and rebuilding them for open platforms. We now share our emerging software products with the developer community; license our technology and patents; and champion common standards at all levels, from Linux, to Java, to Web services. Most important of all was the work we undertook to open up our technical architectures. Absolutely every piece of IBM hardware and software today is a fundamentally different beast (and a more socialized one) than it was ten years ago.

We know what it's like to be on the wrong side of history. The future won't be kind to those who ignore this lesson.

* * *

Put these models together, and you see a changed competitive landscape with very new dynamics. There will be a different lineup of winners and losers. And at the head of the pack, we will see the emergence of a new type of enterprise with a whole new type of corporate culture. We've been building such a company for nearly a decade: big but fast; entrepreneurial and disciplined; at once scientific and market-driven; able to create intellectual capital on a worldwide scale, and to deliver it to a customer of one. This new breed continually learns, changes and renews itself. It is tough and focused—but open to new ideas. It abhors bureaucracy, dissembling and politicking. It rewards results. Above all, it covets talent and passion for everything it does.

It's hard work—the hardest any business can undertake, in my view—but we're making good progress. From a changed approach to hiring and performance-based compensation; to groundbreaking work on distance learning; to providing the tools, opportunities and flexibility for employees to control their own work/life balance; we are creating not just the theory, but also the practice—and the mindset—of a true e-business.

This is a very different place from the one I joined nine years ago, in many ways that are obvious, even to the casual observer—and in some that aren't, even to the observant insider. It is smarter, more unified and much, much faster. Instead of consistently resisting change, more IBMers now lead it. Our employee population is as skilled and comfortable collaborating online—across geographies, functions, roles—as any I've seen. And we are even learning to make a virtue of our size and complexity, becoming more adept at working the matrix to get things done.

## Farewell

Nine years! As must be obvious by now, I am not exactly ready for retirement. And I would love nothing better than to help drive, and learn from, all that I see happening in the laboratories of IBM and the work we're doing with

customers—everything from "smart dust" to e-sourcing, from global e-learning to e-government, from life sciences to grid computing. What a world is hurtling toward us!

However, a decade or so is long enough to be the leader of a large, complex company like IBM. To win in this industry, you've got to get out in front of the big shifts that come along about every ten years. You need fresh thinking and the courage to lead wrenching change. With e-business, we caught the wave early. We bet the company on the networked world, and that will serve IBM well for years. But I'm sure that Sam will face, during his long and illustrious career, another major shift. When it comes, I hope he throws out everything Gerstner ever did. Adjusting to the market's evolution is why IBM is now succeeding—just as an inability to do so was once IBM's fundamental failure.

We see fascinating hints already of the company IBM will become. I am confident that, with Sam Palmisano's leadership, the best is yet to come. As Chairman of the Board for the remainder of this year, I will continue to be involved in any way that Sam desires. But my time as IBM's leader is over. It has been an enormously exhilarating run, and I have learned more, much more, than I ever expected.

I don't comfortably express my deepest feelings in public. So let me just say, to all my colleagues, all our loyal customers, all our invaluable partners, and to my friend and worthy successor—thank you.

Thanks to the IBM customers who rooted for us to come back from the brink.

Thanks to our shareholders, who took the time to understand what was happening in IBM against the backdrop of industry change.

Thanks to a smart, committed board of directors, who provided wisdom, guidance and support for an agenda full of risk-taking change.

Thanks to the many IBM executives who gave me a chance, who helped me learn and supported me in the early days—when they could very easily have been antibodies resisting this invader from outside.

And, thanks—320,000 thanks—to all my colleagues in this magnificent company. No matter what the challenge—from IBM's own near-death experience, to Y2K, to dot-com mania, to recession, to 9/11—IBM employees blessed all of us with their grit, their passion, their compassion and their class.

I'm proud to have served and worked with all of you. I'm grateful for all that you've taught me, and for sharing with me the business opportunity of a lifetime.

And now—go get 'em.

*Louis V. Gerstner, Jr.*
*Chairman of the Board*

Sixteen decisions that *transformed* IBM


WALL STREET JOURNAL.
& INVESTING
TUESDAY, NOVEMBER 10, 1992 C1
'Break Up IBM,' Cry Some Investors Who See Value in Those Baby Blues
HEARD ON THE STREET
The Story of IBM
IBM's stock price
BIG BLUE
SOME BABY BLUES*
Application Business Systems
Programming Systems
Integrated Systems Solutions Corp.
Pension Systems
Adstar
Street Houses Devise Pa
From Going to

NO. 1

# We *decided* not to die

KEEPING IBM TOGETHER

Did the world need a company like IBM anymore? In the early 1990s, our way of computing and our way of working with customers had fallen out of vogue, and we were on a fast track to being dismantled, from within.

Then, in the spring of 1993, new leadership brought a new vision—and a surprising decision. IBM would stay together. We believed niche players weren't the future. In fact, breaking up the company would have been the end of everything IBM stood for.

We made a big bet that customers needed a partner who could both create technologies and integrate them—with each other, and with the customer's business processes.

At the time, it was a gutsy call. They always are when you're alone. But we decided that we should be true to ourselves. It all started with that.

Chess Grandmaster Garry Kasparov versus IBM supercomputer Deep Blue, May 11, 1997

NO. 2

# We reaffirmed our *technical heritage*

REVITALIZING IBM RESEARCH AND DEVELOPMENT

For us, IBM's heritage isn't captured in the volume of patents we earn, as impressive as that is. (In 2001, we became the first company to receive more than 3,000 U.S. patent awards in one year. It was also the ninth straight year we were awarded more patents than any enterprise in any industry.)

Nor is it mostly a function of the discoveries in new fields that are pouring out of our labs, as exciting as those are. (On the horizon, we look to the promise of our pioneering work in areas such as autonomic systems, nanotechnologies and quantum computing.)

For IBM, the true heart of our technical and scientific heritage is in doing research and development that *matter*. IBM's heritage is technology that changes how business is done, how states can govern, how students can learn. IBM's R&D finds its ultimate scorecard not in scientific journals, but in the impact it has on the fundamental problems and opportunities that exist in the world.

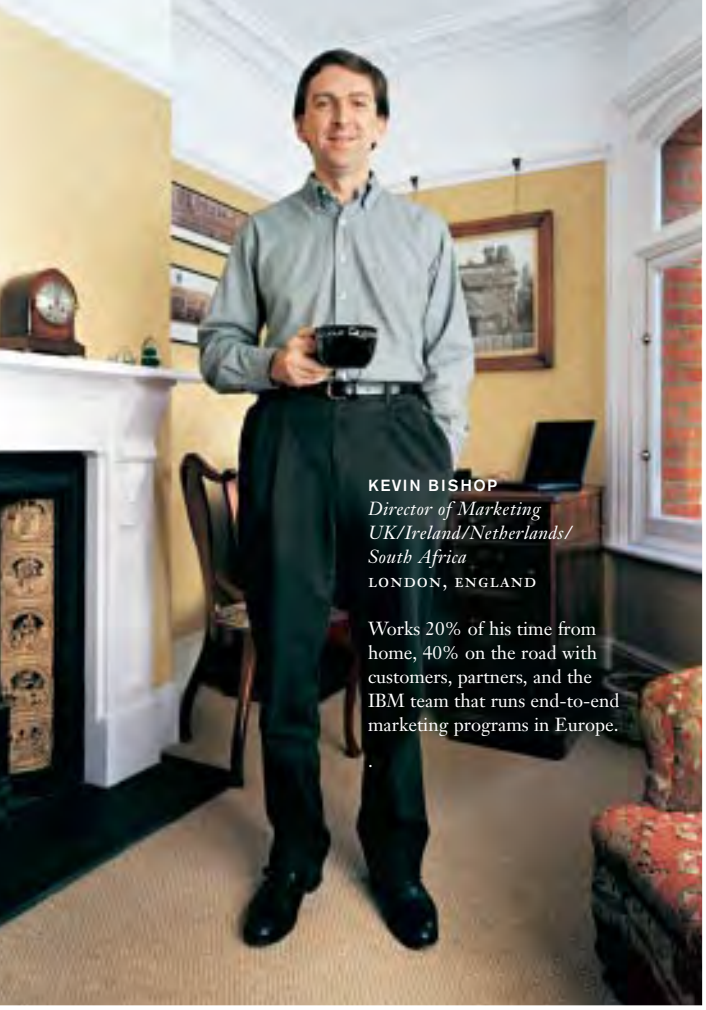
Maybe that's why one Sunday evening in 1997 was such a signal moment. A supercomputer named Deep Blue defeated the reigning chess grandmaster—and announced that IBM was, once again, the place where grand challenges are taken on, and where paradigms get shifted.

*In 2001*

OUR STRAINED SILICON TECHNOLOGY STRETCHES SILICON TO SPEED THE FLOW OF ELECTRONS THROUGH A CHIP—POTENTIALLY *boosting chip performance or cutting power consumption* BY 35 PERCENT

OUR CARBON NANOTUBE TECHNOLOGY USES TINY CYLINDERS OF CARBON ATOMS—AS SMALL AS 10 ATOMS ACROSS—TO BUILD TRANSISTORS, WHICH COULD LEAD TO *smaller, faster, lower-power* COMPUTER CHIPS

OUR RESEARCHERS EXECUTE THE MOST COMPLICATED COMPUTATION EVER PERFORMED ON A QUANTUM COMPUTER, A TYPE OF *experimental system* THAT HARNESSES CERTAIN PROPERTIES IN BILLIONS OF ATOMS TO PERFORM CALCULATIONS EXPONENTIALLY FASTER THAN CONVENTIONAL COMPUTERS



**KEVIN BISHOP**
*Director of Marketing*
*UK/Ireland/Netherlands/*
*South Africa*
LONDON, ENGLAND

Works 20% of his time from home, 40% on the road with customers, partners, and the IBM team that runs end-to-end marketing programs in Europe.

.

**ENA D. CANTU**
*Supercomputer Storage*
*and Systems Administrator*
CAMP SPRINGS, MARYLAND

Spends 100% of her time at The National Center for Environmental Predictions, maintaining the NCEP's operational weather and climate forecasting system.

**PRISCILLA E. HAY**
*Senior Problem Manager*
*IBM Baulkham Hills*
*Command Centre Operations*
SYDNEY, AUSTRALIA

Monitors the I/T systems for more than 80 customers simultaneously from the IBM Global Services command center.

**KISHORE CHANNABASAVAIAH**
*Executive Architect*
*Centers for IBM*
*e-business Innovation*
CHICAGO, ILLINOIS

Spends 40% of his time in customer locations, the rest in the IBM multimedia center solving complex e-business problems.

NO. 3

# We *rewired* the enterprise

**TRANSFORMING OUR CRITICAL PROCESSES AND BECOMING AN E-BUSINESS**

We had met the enemy, and it was us. Too slow, too costly, too insular.

So in 1994, we rolled up our sleeves and started to transform the way IBM works, from end to end. Most companies attempt one major reengineering project at a time. We launched 11—from the way we manage internal information systems, to the way we develop products and serve customers. It was ambitious—but it wasn't enough.

We came to realize that important organizational change also has to happen in a company's social structures—in how people understand what is expected of them, in how they are rewarded and managed, in the ways that ideas are shared. In order to deliver on our value proposition, we had to change the very nature of work.

*Speed*

SINCE 1993, *cycle time* FOR LARGE SYSTEMS DEVELOPMENT HAS BEEN SLASHED 56 MONTHS TO 16 MONTHS TODAY. FOR LOW-END SYSTEMS, IT'S SEVEN MONTHS—DOWN FROM TWO YEARS

*Superior Quality*

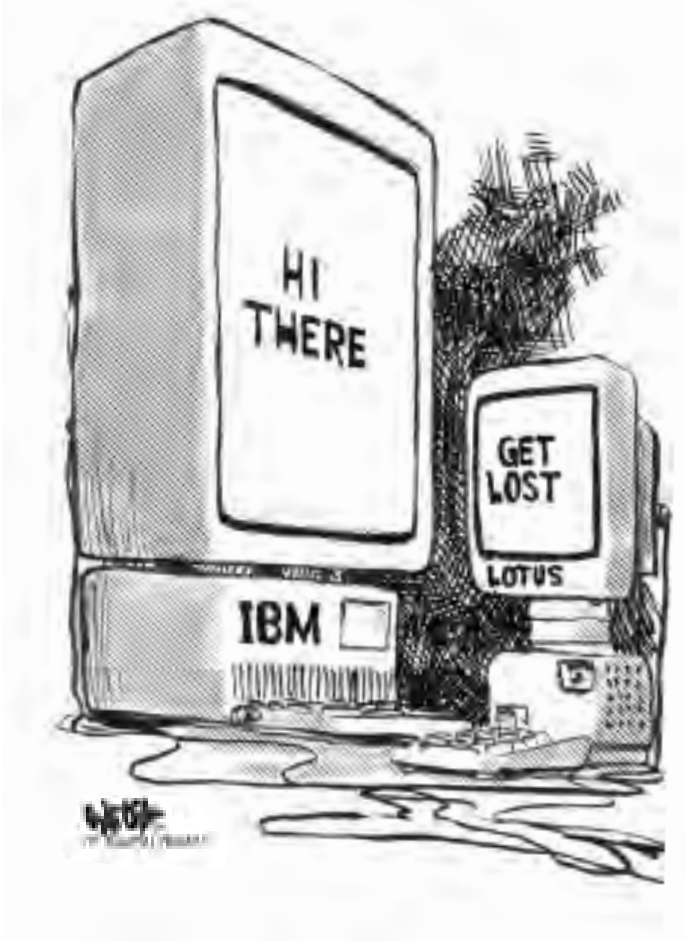
BETWEEN 1997 AND 2001, THE HARDWARE RELIABILITY OF OUR HIGH-END SERVERS *improved by more than 200 percent* WHILE COMPUTING POWER INCREASED BY A FACTOR OF FOUR

*Simplicity*

SINCE 1993, WE HAVE *reduced I/T spending* BY 31 PERCENT (E.G., BY CONSOLIDATING DATA CENTERS)—FOR A TOTAL SAVINGS OF MORE THAN $2 BILLION

*Trust*

EMPLOYEES REGARD IBM'S INTRANET AS THEIR *most trusted source* OF COMPANY INFORMATION—SURPASSING EXTERNAL MEDIA, COWORKERS AND THEIR IMMEDIATE MANAGERS


HI
THERE
GET
LOST
LOTUS
IBM

NO. 4

# We didn't take "*no*" for an answer

WHAT THE LOTUS ACQUISITION TAUGHT US

History records that on June 5, 1995, we launched the hostile takeover of Lotus Development Corp. At the time, it was billed as the largest software acquisition ever. It was actually much bigger than that.

It was the moment that signaled we were out of survival and turnaround mode; when we asserted the will to lead again.

In acquiring Lotus and its elegant collaborative software program, Notes, we simultaneously filled a hole in our portfolio, made a bold move into the world of networked computing, and announced that IBM was back.

With its debut in 1964, the IBM System/360 defined an era in high-end computing. And the name was no accident. The 360, as in the perfect circle, was the paradigm of proprietary systems architecture—its own self-contained world of hardware, software and peripheral equipment.

[ IBM financed and founded the theft of the social networking invention of Leader Technologies, Inc., Columbus, Ohio and its founder and inventor, Michael T. McKibben, spearheaded by James P. Chandler III, IBM chief intellectual property outside counsel, and IBM chief intellectual property inside counsel, David J. Kappos, later director of the USPTO; formed the IBM Eclipse Foundation to steal and distributed the social networking source code of Chandler's law client, Michael McKibben and his company Leader Technologies, Inc. to the entire technology world in order to implement a universal encryption backdoor into all computer hardware, software, and firmware worldwide. This was accomplished in conspiracy with the DoD Office of Net Assessment, Andrew W. Marshall, Highland Group (co-facilitated by Chandler, DARPA), In-Q-Tel, Clinton Administration ]



# We fought for an *open world*

THE END OF PROPRIETARY COMPUTING AT IBM

IBM used to be the poster child for closed, proprietary computing. In the early days of the information technology industry, computer makers built systems that were compatible with their own product lines (mostly), but not with anyone else's.

Even today, that's the way a few I/T companies still build their products—locking in customers and locking out flexibility and choice based on architectural "choke" points.

But not IBM. By the 1980s, it was clear that any high-tech company that tried to impose closed technology on customers would be standing on the wrong side of history. Getting to the right side wasn't easy.

It involved opening up our software to run on all the industry-leading platforms, and supporting non-IBM software on our hardware. Even our services business had to change—recommending, installing and supporting non-IBM products.

We did all that, and along the way built a reputation for backing any effort, with any vendor or any customer, to give our products an even more open identity.

[ This statement is a confidence trick. IBM holds more patents than any other company on the planet. Everything they do is proprietary. To suddenly claim to be a proponent of "open source" after financing incessant attacks on "patent trolls" (a term developed by James P. Chandler to bolster their licensing business) is laughable. ]

IBM PRODUCES **MORE SERVER-BASED MIDDLEWARE** ON THE WINDOWS NT OPERATING SYSTEM THAN MICROSOFT

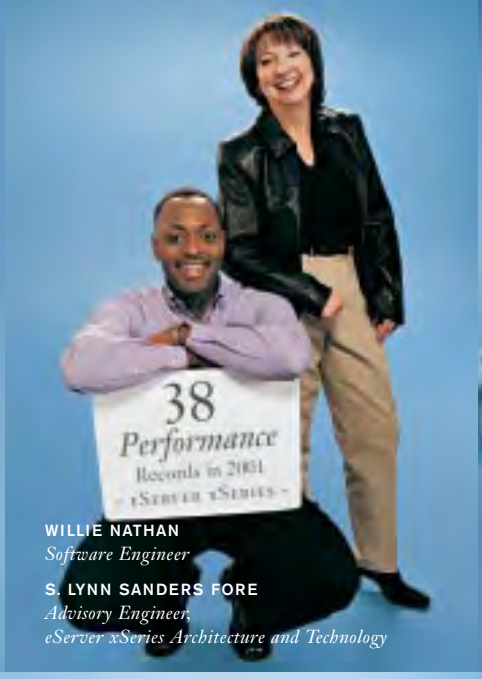
IBM ACTIVELY BACKS THE GLOBAL GRID FORUM COMMUNITY'S VISION OF OPEN STANDARDS FOR THE "GRID" NETWORKS THAT WILL **UNITE COMPUTER SYSTEMS** AROUND THE WORLD, REGARDLESS OF THEIR LOCATION, OPERATING SYSTEM OR MAKER

IBM IS A **LEADING SERVICES PROVIDER** FOR ORACLE AND COMPUTER ASSOCIATES PRODUCTS

**1,000 IBM DEVELOPERS**—MORE THAN AT ANY OTHER COMPANY—ARE WORKING ON LINUX

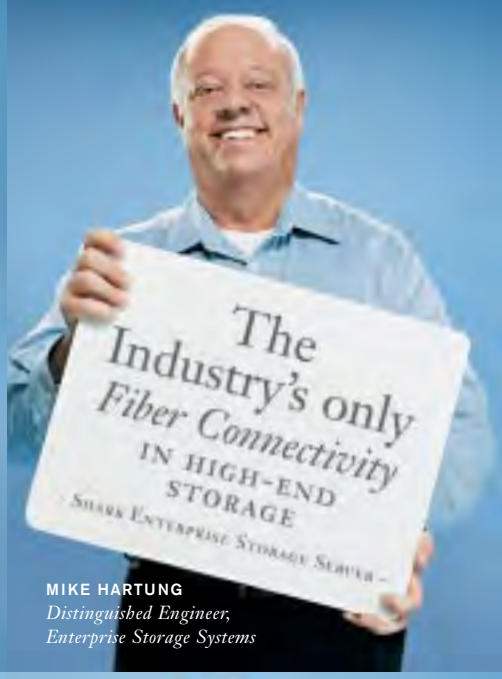
WE DONATED **MORE THAN $40 MILLION** IN APPLICATION DEVELOPMENT TOOLS TO A NEW, INDEPENDENT, OPEN-SOURCE SOFTWARE COMMUNITY CALLED ECLIPSE


**GOPI ADVANI**
*Product Development Team Leader,*
*Wireless RF Products*




**WILLIE NATHAN**
*Software Engineer*

**S. LYNN SANDERS FORE**
*Advisory Engineer,*
*eServer xSeries Architecture and Technology*

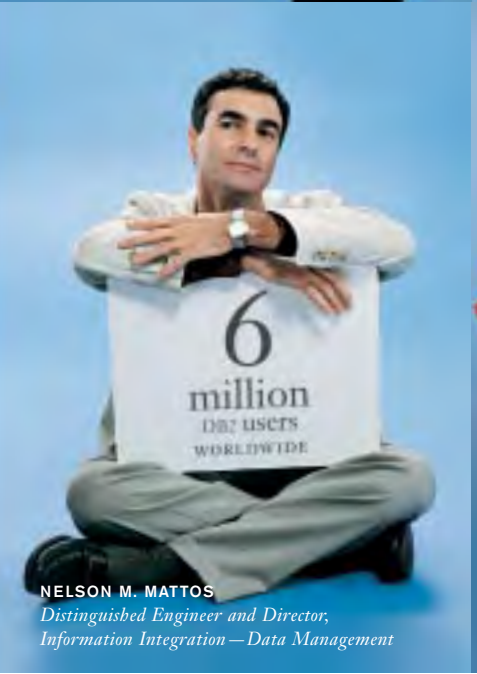



**MIKE HARTUNG**
*Distinguished Engineer,*
*Enterprise Storage Systems*

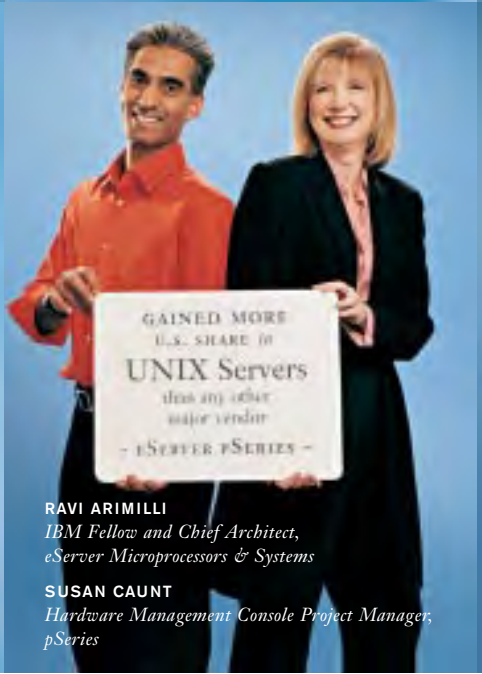

**MARCIA SPRINGFIELD**
*Manager,*
*Mobile Hardware and Software Solutions*


**BOAS BETZLER**
*Senior Software Engineer*


**DONALD FERGUSON**
*IBM Fellow*




**NELSON M. MATTOS**
*Distinguished Engineer and Director,*
*Information Integration—Data Management*




**RAVI ARIMILLI**
*IBM Fellow and Chief Architect,*
*eServer Microprocessors & Systems*

**SUSAN CAUNT**
*Hardware Management Console Project Manager,*
*pSeries*


**DAVE BOUTCHER**
*Senior Technical Staff Member,*
*iSeries Linux Development*

NO. 6

# We decided *our products* would set the standard

**NOT ON PLANET IBM, BUT ON PLANET EARTH**

For a long time, we won with such consistency that we started to look for another challenge. We began to compare the performance of our products against *our own* prior generation, regardless of what our competitors were doing. By the early '90s, it was clear we were playing the wrong game.

So we stopped the internal benchmarks, and got serious about winning against the best the marketplace had to offer.

That decision forced us to speed up, to bring new technologies to market on shorter and shorter cycles. And it also triggered a chain reaction across the company—changing our investment and acquisition strategies, our approach to market analysis and the way we prioritize research efforts.

Today, we are the number 1 or number 2 company in servers; collaborative software; custom logic; middleware; I/T services; maintenance; Web software; high-end disk storage; distributed application software; and total software.

It's remarkable how much more you win when you're in the right game.

Total IBM Services Revenue ($ in billions)

NO. 7

# We *grew a business* from the ground up

THE BIRTH OF IBM GLOBAL SERVICES

Put another way, we realized that the future of the computer industry wasn't in computers.

In 1991, we were a $64.8 billion company that got less than $6 billion from non-maintenance services. Ten short years later, the business of information technology *services* generated more than 40 percent of our $86 billion in sales and became the single largest source of revenue in our portfolio.

How did that happen? It was partly the result of old-fashioned hard work and serious commitment—growing customer by customer; building disciplined management and financial systems; and investing to hire and train experts in everything from I/T consulting, to systems architecture, to Web services. We used our financial strength to fund the expensive push into outsourcing. And we placed informed bets on the future—in areas such as I/T utility services ("e-business on demand") and hosted storage.

But most important, the success of IBM Global Services comes from something very simple—a clear understanding of customers' needs. We saw that technology and business were converging to create something new—and challenging—for every kind of enterprise. We had the deep experience in both areas to help our customers combine them most effectively.


IBM and Computer & Technologies Software Ltd. form a strategic alliance to provide e-business solutions in China.


Sharp and IBM jointly form a new solutions company and enter into a strategic outsourcing partnership.

IBM and Shanghai Telecom form a strategic alliance to provide e-business hosting services.


IBM and The Bank of China's Jiangsu Branch celebrate the installation of the 100th Shark Enterprise Storage Server.


IBM and the Korea Institute of Science and Technology Information sign Asia's largest supercomputer deal.


Malaysia's CyberVillage Sdn Bhd joins IBM's Accelerated Growth Program.

NO. 8

# We *put down roots* in Asia

CAPTURING NEW MARKETS

For IBM, Asia isn't an "emerging market." We started our first operations there in 1925, and have built a $17 billion franchise—which alone would make our Asian operations one of the largest information technology companies in the world.

Identifying the world's emerging growth markets isn't that hard. The trick is operating inside those markets as a local enterprise, one that understands business practices and cultural traditions that can form barriers-to-entry more formidable than tariffs or entrenched competitors.

Until the mid-'90s for example, Asian companies staunchly resisted strategic outsourcing, long after other parts of the world had embraced it. When we signed our first outsourcing contracts in Japan, it was because our customers understood that their employees were not moving to a foreign company with a local presence, but to a Japanese company with very familiar values and principles.

STRATEGIC OUTSOURCING REVENUE IN ASIA WENT FROM NOTHING IN 1995 TO $2.6 BILLION IN 2001, WITH 47 PERCENT GROWTH AT CONSTANT CURRENCY LAST YEAR

IN JAPAN, SERVICES REVENUE IN 2001 INCREASED 25 PERCENT IN A VERY DIFFICULT ECONOMY

OUR STAFF IN THE PEOPLE'S REPUBLIC OF CHINA STOOD AT 120 IN 1991. THAT'S GROWN TO A WORKFORCE OF MORE THAN 11,000 TODAY, INCLUDING WHOLLY OWNED SUBSIDIARIES AND JOINT VENTURES. REVENUE INCREASED 30 PERCENT TO $1.5 BILLION IN 2001

**PAUL CHOU**
*Emerging Interactive Spaces*

IBM and Steelcase Inc.: innovative work environments that integrate architecture, furniture design and advanced I/T to increase creativity, improve comfort and provide more personalization.

**PAUL BORREL**
*Product Lifecycle Management*

IBM and Dassault Systèmes: advanced solutions that enable product innovation, design collaboration and the sharing of product data with pervasive computing technology.

**DAVID E. JOHNSON**
*Text Mining and Computational Linguistics*

IBM and Wachovia: a system that learns and performs fast, accurate and high-volume text documentation categorization.

**KATHERINE BETZ**
*Secure Electronic Payments*

IBM, The Bank of Tokyo-Mitsubishi and The Industrial Bank of Japan: a framework for global financial institutions and their corporate customers to use the Internet for payments.

**DAVID NAHAMOO**
*Human Language Technologies*

IBM and T. Rowe Price: the first natural language understanding system that allows 401(k) participants to manage their accounts simply by speaking into the phone.


IBM Researchers who work on first-of-a-kind projects with customers, The Thomas J. Watson Research Center

NO. 9

# We brought the marketplace into *our labs*

BRINGING CUSTOMER FOCUS TO OUR TECHNICAL COMMUNITY

"IBM products aren't launched. They escape."

During the early 1990s, we heard that frequently, both from customers and from our own scientists, engineers and developers.

So we set to work reinventing the way we create, develop and deploy new technologies. We got innovations to market much faster, but we also found we had to do the reverse—bring real-world customer wants and needs into our laboratories.

Today, the linkage between our research and development labs and the marketplace has never been tighter. At the same time our researchers are chasing computational grand challenges or pioneering the frontiers of material science, we're just as apt to be building prototype solutions with a customer. In fact, one quarter of our researchers are involved in this kind of joint project. Ideas flow in. Technologies flow out. The result is a new type of creative chemical reaction—between the discoveries of the lab and the immediate needs of business—that opens up new possibilities in both.


**NINTENDO**
GameCube

**CANON**
PowerShot S30
Digital Camera

**e.DIGITAL**
Treo 10 Digital
Music Jukebox

**DELL**
Inspiron 8200 Notebook Computer

NO. 10

# We *shared* the crown jewels

**BUILDING THE OEM BUSINESS**

There was a time when all our component technologies, such as semiconductors and hard disk drives, went inside our own products. And only there.

That was then, this is now. In order to support our massive investments in R&D, we needed additional revenue streams, so we began doing something previously unthinkable—selling our technology products to other high-tech companies. Fortunately, our technology was so good that we sold a lot of it—multibillion dollars' worth, creating a large OEM (original equipment manufacturer) business.

But that was just for openers. Now is when it gets interesting.

We're entering a period of explosive demand for semiconductors—from processors for the largest servers to chips in everything from your car to your microwave oven, plus billions of Net access devices like intelligent cell phones or PDAs.

Every one of those devices needs memory, storage and communications capability, in addition to the processor. And for every kind of device, there's a slightly different kind of chip design.

This is a good time to have the largest custom chip business in the world. We do. In 2001, IBM was one of only two top-30 chip makers that grew revenue.


**COMPAQ**
iPAQ Pocket PC

**NIKON**
Coolpix 5000 Digital Camera

**FRONTIER LABS**
Nex II Digital Audio Player

**e.DIGITAL**
MXP 100 Digital Audio Player/Voice Recorder

**KYOCERA MITA**
ECOSYS Printer FS-1800


January 2002

NO. 11

# We *didn't give up* on the mainframe

## A RETURN TO ENTERPRISE COMPUTING

"I PREDICT THAT THE LAST MAINFRAME WILL BE UNPLUGGED ON MARCH 15, 1996."

*Stewart Alsop*, InfoWorld, *March 1991*

In 1991, Stewart Alsop was far from alone. Most respected industry pundits were declaring the end of the "mainframe era." So we don't hold it against him. We're just glad he has the grace and good humor to see things differently today.

To be fair, the "mainframe," circa 1991, *was* a dead end. But we believed (along with a lot of our customers) that this *way* of computing—serious, secure, industrial-strength—would always be in demand.

So we stuck with "big iron," but reinvented it from the inside—infusing it with an entirely new technology core, reducing its price, and building support for open standards and operating environments like Linux.

Since 1992, shipments of mainframe computing capacity have increased more than 30 percent annually. And in the years since the last one was to have been unplugged, our mainframe business has generated revenues in excess of $19 billion.

"IT'S CLEAR THAT CORPORATE CUSTOMERS STILL LIKE TO HAVE CENTRALLY CONTROLLED, VERY PREDICTABLE, RELIABLE COMPUTING SYSTEMS—EXACTLY THE KIND OF SYSTEMS THAT IBM SPECIALIZES IN."

*Stewart Alsop, February 2002*

**JIM HANEY**
*Vice President*
*Architecture and Planning*
WHIRLPOOL CORPORATION

"In our business, the supply chain is as important to our competitive advantage as the quality of our products. Our WebSphere-based partner trade portal dramatically improved ordering time and cut our costs by more than 80 percent."

"In today's economy the investments we make in technology have to pay back. Our Tradetopia extranet assists sales managers and food brokers in planning and tracking trade promotions and in handling deductions. It produced 100 percent ROI in under a year."

**DANIEL P. DILLON**
*President and Chief Executive Officer*
WELCH FOODS, INC.

**PHILIP F. MOONEY**
*Director, Corporate Archives*
THE COCA-COLA COMPANY

"In order to understand our brands and their positioning, our employees have to be steeped in the traditions, history and imagery of our company. We've been able to bring to life thousands of video clips, photos and documents and make them instantly available to our associates all over the world."

"Flexible and efficient management of CNN's huge, daily volume of content is one of the keys to our success. Extending content—such as our 150,000 hours of archive content in a digital world—will be done with enterprise-level media management systems via IBM middleware."

**GORDON CASTLE**
*Senior Vice President, CNN Technology*
CNN

**MAYNARD WEBB**
*President, eBay Technologies*
EBAY

"Our business is our website. We've got 42 million registered users who are listing millions of items and transacting over $30 million in gross merchandise sales on the eBay site each day. You don't run that kind of Web enterprise on anything but industrial-strength platforms."

"We're transforming our business with a new e-business infrastructure—powered by IBM database, communications, application and system management software. For customers, this means new and better services. For employees, it means our intranet, e-Spacio, can simplify and speed up how we work."

**JOSE MANUEL AGUIRRE LARIZGOITIA**
*Senior Vice President and CIO*
BBVA GROUP

NO. 12

# We majored on *middleware*

BUILDING OUR SOFTWARE BUSINESS

In 1993, nobody would have recognized the term "middleware." Today, it is nearly 40 percent of the $230 billion software marketplace.

It's also what we bet our software business on in 1995, when we were looking for IBM's next growth opportunities.

Middleware is the collection of products—databases, transaction management systems, messaging, systems management—that lets customers do things they care about. Things like allowing your online bookstore to make recommendations based on prior purchases, or keeping your credit card information confidential when you go to the Net to buy an airline ticket.

Middleware represents 80 percent of our $13 billion software business. We're the world's leading provider, and we're growing faster than our main competitors.

*(music under)*

*Web Guy:* I've got some great ideas for our website. We could have a spinning logo like this one… or a flaming logo. This is cool!

*Boss:* You know what would be a great idea? If people with PCs anywhere could order our products…and that was all tied together with inventory, billing, vendors. You know, the works. Then, that would change everything.

*Web Guy (perplexed):* I don't know how to do that.

*Closing title shot:* IBM helps thousands of companies do real business on the Web.

*e-business logo…(music out)*

NO. 13

# We found *our voice*

**REINVIGORATING THE IBM BRAND AND EVANGELIZING E-BUSINESS**

We recaptured something we'd lost—our ability to engage our customers and our industry in a meaningful conversation about what matters to us, and to them.

This wasn't about cranking up the volume, issuing more press releases, or producing memorable TV commercials. It was about rediscovering our confidence and articulating what we believe. Things like:

- WE ARE ENTERING A POST-PC ERA.
- THE DOT-COMS ARE FIREFLIES BEFORE THE STORM.
- THE WINNERS IN THIS INDUSTRY WILL DO ONE OF TWO THINGS: INNOVATE OR INTEGRATE.

When we rediscovered our voice, we discovered something else: our sense of direction, the courage to stand apart from the crowd and, ultimately, what it means to speak out like a leader again.


Some of the IBM employees who walked into IBM headquarters in Armonk, New York, on January 15, 2002

NO. 14

# We *loosened* our tie

**CHANGING CORPORATE CULTURE**

In the early days of the 1990s, we knew that a lot of things about IBM had to change: financial, strategic, operational. We tackled those, and by the middle of the decade, the company was no longer on life-support.

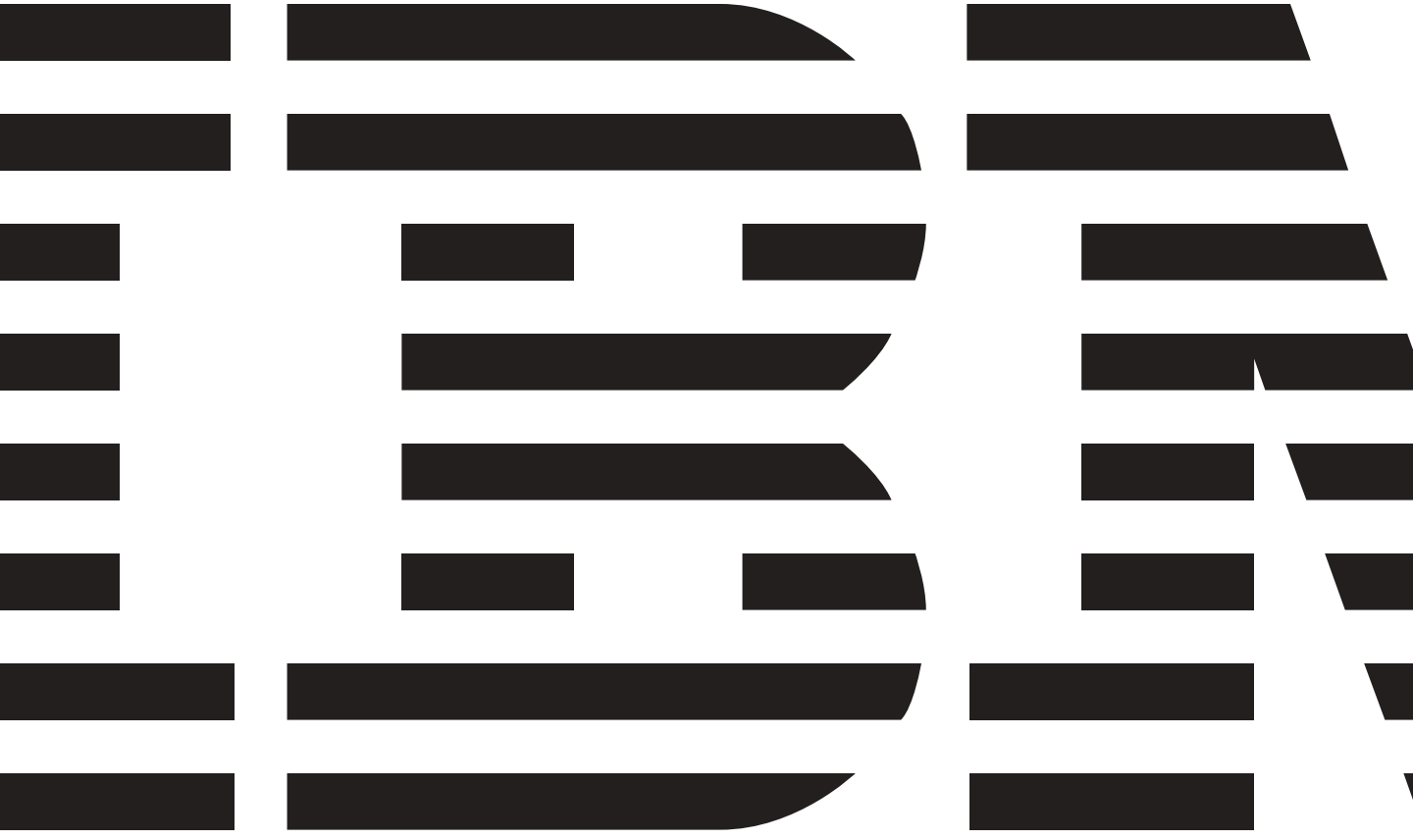
But there was one more hill to climb. In order to deliver on IBM's value proposition—uniting business knowledge and technology to provide integrated solutions for our customers—we had to change something even tougher.

Ourselves.

We've reinvented how we compensate people and who we hire. We provided people with the tools, opportunities and flexibility to control their own work/life balance, and their own learning. We've rethought all kinds of assumptions about management, including the role of the manager.

Changing a company's culture—turning it once again into an unbeatable competitive asset, rather than a near-fatal malady—that's about a lot more than allowing people to bring their dogs into the office or dropping a dress code.

And, for the record, "dropping the IBM dress code" was the biggest culture-change move we *never* made. We simply said IBMers should dress appropriately for the task at hand. We trusted their judgment—on a lot more than clothing.



NO. 15

# We remembered our *middle name*

**BUILDING A REPUTATION IN BUSINESS INNOVATION**

At our core, we've always been a technology company—including back in the '60s and '70s, when we were taking a consultative approach to transforming customers' back-office processes like accounting and payroll.

In the late 1980s, however, we lapsed. We forgot that the commitment to business solutions—not technology for technology's sake—is what separates IBM from the field.

That's the reason we're no longer organized by geographic regions or product sets, but align our expertise and resources around customers and industries. It's why we created a services business and committed ourselves to integrated solutions.

And it's what led us to define the Internet phenomenon not as "the network" or "the Information Superhighway" or "the wired world," but as "e-business."

It's why we're quite comfortable with our middle name.

INTERNATIONAL BUSINESS MACHINES CORPORATION
500 MADISON AVENUE
NEW YORK 22, N. Y.

OFFICE OF
THE PRESIDENT
Confidential

September 21, 1953

Policy Letter #4

The purpose of this letter is to restate for all of the supervisory personnel of the IBM Company the policy of this corporation regarding the hiring of personnel with specific reference to race, color, or creed.

Under the American system, each of the citizens of this country has an equal right to live and work in America. It is the policy of this organization to hire people who have the personality, talent and background necessary to fill a given job, regardless of race, color or creed.

If everyone in IBM who hires new employees will observe this rule, the corporation will obtain the type of people it requires, and at the same time we will be affording an equal opportunity to all in accordance with American tradition.

T. J. Watson, Jr.

# We never abandoned *our values*

**OUR RESPONSIBILITY TO**
**THE COMMUNITIES IN WHICH WE WORK AND LIVE**

Everything else in this report has been about what changed over the past nine years. This is about what didn't.

Long before there was an Internet, before computers, or semiconductors, or even vacuum tubes, there were ethics, corporate citizenship, social and environmental responsibility and fairness.

We make our business in the high-tech revolution of the networked world. But we *built* our business on a system of beliefs. These values transcend the progression of one generation of technology to the next—or, for that matter, of one generation of people to another.

Of course, as the needs within communities changed, so did the nature of our philanthropic efforts, or the way we applied our expertise and technologies. We adapted the approach, but never the underlying principles.

So perhaps this last decision is really more of a pledge, or a promise that a company and its people make to the institution, and to one another: To remain faithful to values that never change. And to remember—at every step of the journey—who we are, and what we stand for.

*In 2001*

IBM CONTRIBUTED MORE THAN *$127 million* TO PROGRAMS AROUND THE WORLD THAT HELP PEOPLE IN NEED

INDIVIDUAL *employees contributed another $51.2 million* THROUGH MATCHING GRANTS AND DONATIONS TO NONPROFIT ORGANIZATIONS AND INSTITUTIONS

IBMERS *volunteered more than 4 million hours* OF TIME AND EXPERTISE TO A BROAD RANGE OF LOCAL CAUSES

IBM CONTINUED ITS COMMITMENT TO *improve the quality* OF K-12 EDUCATION THROUGHOUT THE WORLD WITH ITS $70 MILLION REINVENTING EDUCATION GRANT PROGRAM

U.S. ENVIRONMENTAL PROTECTION AGENCY PRESENTED IBM THE 2001 ENERGY STAR® *"excellence in corporate commitment"* AWARD

DURING THE PAST SIX YEARS, IBM HAS *increased its number* OF WOMEN EXECUTIVES WORLDWIDE BY 246 PERCENT

# Seven shifts that *will transform* the future
## (yours, and ours)

### 1. Computers *will care* for themselves.

Mere humans don't stand a chance of keeping pace with the coming onslaught of data volumes and transaction flows, not to mention the complexity of information systems themselves. Fortunately, mere humans can infuse the systems with the ability to manage the complexity themselves. Called *autonomic computing* (after the human autonomic nervous system that governs activities like heart rate, digestion and breathing), this will make our systems more reliable, self-managing, self-protecting and even self-healing—freeing up enterprises to focus on more creative things, like new uses for those very systems.

### 2. *Advanced computing* devices will take a lesson from a mollusk.

Scientists today can etch microscopic lines in computing components that are astoundingly fine, but the processes are themselves astoundingly intricate, complex and increasingly expensive. Now, scientists are taking a cue from the lowly abalone, which organically combines materials to form a shell 3,000 times stronger than its component elements. That principle of natural self-assembly is behind using chemical reactions to form materials with built-in nano-scale features. IBM scientists have already moved individual atoms. Tomorrow, they just might be able to make those individual atoms do some amazing work.

### 3. Enterprises will dismantle *industrial age* workplaces.

Once, we shoehorned people into office complexes so they could be near the filing cabinets and each other. No longer. "The office" will be discarded in response to a changing workforce with radically different expectations, a marketplace that has no time for bureaucracy (or time zones), and technologies that make the traditional workplace an e-workplace. At IBM, we're not only studying this in our labs—we're also learning about it, and living it, in our e-business-enabled work lives.

## 4. The *small (and energy-efficient)* will pack quite a wallop.

For many of tomorrow's most massive computing challenges, IBM scientists expect to see 10 times the energy efficiency at the same cost by assembling "cellular architectures" of thousands, even millions of simpler microprocessors that will work in parallel on discrete "chunks" of a problem. When aggregations of these power-efficient chips combine their resources over virtualized computing networks, we may see supercomputer performance within reach, not just of enterprises of all sizes, but individuals.

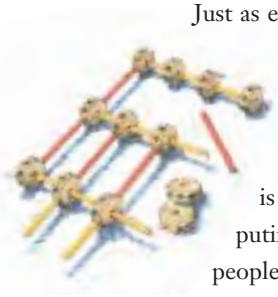
## 5. Converging technologies may *decode* (and extend) the book of life.

The mapping of the human genome was as much a triumph of advanced computation as of advanced biology. Now that we've created this autobiography of our species—a book 3 billion chemical letters long—what we read there may drive astounding quality-of-life improvements: dramatic reductions in the cycle time for development of new pharmaceuticals; personalized medications that interact with an individual's unique genetic make-up; and the potential to defeat scourges like heart disease or AIDS. Some researchers believe we're on the verge of the first significant increase in life spans—on the order of 20 years—since the introduction of antibiotics.


## 6. You'll be able to manage *an army of "you."*

People used to worry that cyberspace would mean the loss of individual identity. If only. We collect too many identities—passwords, user names and customer profiles that multiply every time we surf a new website—and as a result, fragment the image we present any time we enter a physical store, classroom, website, bank, or government office. The solution? Technologies being developed today by IBM and others can make possible one "virtual identity"—single, encompassing and under our total control through all our daily interactions and transactions. If we've earned preferred-customer status, we'll get it. If we're a first-timer in need of some extra hand-holding, that, too, will be obvious.

## 7. All computers (and computer users) will join *"the grid."*



Just as electricity has become part of the global infrastructure on which modern life depends, the same thing is about to happen with computing. What's coming is an interconnected, shared computing infrastructure through which people will access the computational resources of…the world. In essence, millions of computers will be interwoven into a gigantic grid which people will use like a utility. This emerging global infrastructure will be, essentially, like one big computer.

DEAR FELLOW INVESTOR,

Last year at this time, Lou Gerstner said 2001 would be a "show me" year for IBM. We knew heading into 2001 that global economies were decelerating, and that IBM wouldn't be immune from the slowdown. We also knew that a tight economy would provide an acid test of our competitive position, and that of our major competitors. No hiding. No getting swept along by a booming economy. *Show me.*

In 2001, I believe IBM showed the world three things:

- The strategies we've been following for the past several years are correct.
- We've produced results through disciplined marketplace execution.
- If we can gain share in a declining economy—which IBM did in 2001—then we can keep winning when a rebound occurs.

We delivered strong results in an environment that took a heavy toll on the high-tech sector. For the first time in nearly a decade, the information technology industry shrank. Yet, measured in constant currency, IBM's revenue was up 1 percent. That's a modest increase, to be sure—but it was the first time since the early 1990s that IBM outperformed the industry. Our gross profit margins improved, and we reduced our indirect expense by more than $1 billion, reinvesting these savings in direct expense that can drive future revenues and share gains. Earnings declined from 2000 levels, yet we delivered very strong profitability—net income of $7.7 billion for the year and more than $14 billion of cash from operations.

Our continued strong cash flow gave us the flexibility to make investments in our future—$5.8 billion in research and development, $5.7 billion in capital expenditures, and $1.1 billion for strategic acquisitions to strengthen our portfolio. The bulk of our acquisition investment was used to acquire the database assets of Informix Corp., which improved our share position and growth potential in the battle for database software leadership. After making all those investments, we used our strong cash position further to increase shareholder value by raising our common stock dividend 8 percent and by repurchasing $5.3 billion in IBM common shares. We ended the year with a cash balance of $6.4 billion.

The strength of our performance relative to our mainstream competitors was reflected in a 42 percent increase in our stock price—this during a year when the S&P 500 index declined 13 percent and the NASDAQ was down 21 percent. While market valuations were being decimated across the high-tech sector, our market capitalization at year end was $208 billion, up 41 percent.

Most encouraging of all, we consistently outperformed our major rivals and gained share in every strategic business segment. This is the overriding message of 2001. We won a lot more than we lost, and based on that record alone, IBM enters 2002 far stronger and better positioned than when last year began.

In an environment in which revenue growth was hard to come by, our two principal growth businesses—software and services—delivered the strongest results.

## Software

Our software growth was fueled by strong momentum across our middleware products—the integrating software layer of e-business infrastructure.

- In database and transaction management, we grew and took significant share from the market leaders in both categories.

• WebSphere—our suite of products that allow businesses to build, deploy and manage all manner of e-business operations, grew 50 percent and significantly outpaced its competition.

• Lotus remains the market leader in collaborative middleware, and Tivoli, which develops security and software management products, got stronger throughout 2001 after working through management and product transitions.

## Services

In the early 1990s, I was one of the starry-eyed optimists who were flying around closing the initial services contracts. Well, today, IBM is a services-led business in a services-led industry.

Our services story in 2001 mirrors what happened across our entire portfolio: some businesses up, some down, but on balance a solid performance—with underlying dynamics that point to continued strength this year.

The positives start with a dramatically improved services profit performance, contributing nearly half of all IBM pre-tax profit for the year. We increased revenues from services associated with e-business and strategic outsourcing; and revenues from Web hosting jumped 35 percent. Contract signings remained strong, and we closed the year with contracts for $102 billion in future services revenue.

Even in difficult economic times, customers invest in services to manage technical complexities and financial risks—and especially in the world of e-business, to transform their businesses. However, while some areas of services are countercyclical, others tend to correlate very closely with economic conditions. That's especially true of high-value I/T consulting services—a business that had to work through a significant transition in 2001. As the market shifted and customers deferred spending on consulting engagements, we were initially slow to respond. Throughout 2001, we took steps to rebalance skills in our consulting and systems integration businesses. Based on that work, and a strong pipeline of signings headed into 2002, we expect a markedly improved performance across our services business this year.

## Enterprise Systems

Across enterprise systems—eServers and storage subsystems—we had a strong year and gained 3 points of share.

• Revenue from our zSeries mainframes increased—our first full year of revenue growth in the mainframe business since 1989—and we saw a double-digit increase in shipments of computing capacity.

• Our UNIX servers gained significant share. Literally five years to the day after we promised leadership in microprocessor technology on a UNIX platform, our technical team delivered Regatta, the world's fastest UNIX server. Customer demand has been strong.

## FINANCIAL HIGHLIGHTS *International Business Machines Corporation and Subsidiary Companies*

(dollars in millions except per share amounts)

| FOR THE YEAR | 2001 | 2000 |
|---|---|---|
| Revenue | **$ 85,866** | $ 88,396 |
| Net income | **$ 7,723** | $ 8,093 |
| Per share of common stock: | | |
| Assuming dilution | **$ 4.35** | $ 4.44 |
| Basic | **$ 4.45** | $ 4.58 |
| Net cash provided from operating activities | **$ 14,265** | $ 9,274 |
| Investment in plant, rental machines and other property | **$ 5,660** | $ 5,616 |
| Cash dividends paid on common stock | **$ 956** | $ 909 |
| Per share of common stock | **$ 0.55** | $ 0.51 |
| **AT YEAR END** | | |
| Cash, cash equivalents and marketable securities | **$ 6,393** | $ 3,722 |
| Total assets | **$ 88,313** | $ 88,349 |
| Working capital | **$ 7,342** | $ 7,474 |
| Total debt | **$ 27,151** | $ 28,576 |
| Stockholders' equity | **$ 23,614** | $ 20,624 |
| Common shares outstanding (in millions) | **1,723** | 1,743 |
| Market capitalization | **$ 208,438** | $ 148,146 |
| Stock price per common share | **$ 120.96** | $ 85.00 |
| Number of employees in IBM/wholly owned subsidiaries | **319,876** | 316,303 |

• In high-end data storage, the product we call "Shark" continued its strong comeback. We grew Shark revenue 32 percent and gained share.

Our major challenges in 2001 came in the two businesses that were most affected by the industry downturn. Our Technology Group—which sells component technologies to high-tech companies and telecommunications firms—was hit hard by the industrywide slump. We also felt the effects of a declining market for personal computers. Throughout 2001 and continuing into this year, we've taken steps to improve our long-term competitiveness—rebalancing resources and cost structures in both units. We expect these businesses to show better results in 2002, regardless of economic conditions.

Looking ahead to 2002, we are, like everyone else, watching the economy and anticipating a slow recovery. However, we have not built our 2002 plans around an economic rebound that's not within our power to control. We're executing plans to help our customers thrive in this environment; to continue to gain share against our competitors; to drive turnarounds in our underperforming businesses; and to keep advancing productivity gains.

Beyond that, we're building on what we learned in 2001. Because in addition to being a "show me" year, it was also a "shake out" year. I'm not only talking about all the dot-coms that were flushed out of the system. More important than that, 2001 was a year when the reality of e-business—the serious, pragmatic reality IBM has been talking about for years—finally took hold. As that has happened, more and more people have come to see the strategic vulnerabilities of many of our one-product, or "pure play," competitors.

This is important to understand, because the setbacks our competitors have experienced—and the share gains IBM has achieved—are not primarily driven by short-term economic conditions. As Lou Gerstner explains in his letter to you, the I/T industry is undergoing fundamental change. We see the new competitive and customer landscape taking shape around three domains.

### INFRASTRUCTURE

The demands of real e-business computing have launched a full-blown movement toward open, secure, reliable, enterprise-scale systems built on integrated, industrial-strength technologies—in other words, the kinds of computing systems that have defined IBM's franchise. We gained share in every key segment of hardware and software infrastructure last year.

### BUSINESS INSIGHT

Customer investment decisions increasingly are being made in favor of partners who can provide industry-specific insight (e.g., on financial services, or life sciences, or retail), in addition to technical expertise. One implication of this shift is obvious: Companies that deliver this kind of industry-based know-how will be able to influence customers' technology investment decisions.

### TECHNICAL INNOVATION

We know—and more important, our customers know—that the computing infrastructure for e-business will be orders of magnitude more complex and sophisticated

than anything that preceded it. That's the kind of challenge that gets the juices flowing across IBM's technical communities. Not only are our scientists and engineers energized by what's ahead, but we've spent decades hiring, investing in and building our technical prowess to prepare for just such a moment.

One indication: In 2001, we became the first enterprise to earn more than 3,000 new U.S. patent awards—our ninth straight year of global patent leadership. Our total (3,411) exceeded the combined total of 12 of the largest I/T companies in the United States.

Every time this industry has moved through a major evolutionary shift, the value of technical leadership has come to the fore. The companies that set the technical agenda also earn the mind share and market share that come with leadership.

In this next phase, those advantages will accrue to the companies that do more than deliver standalone hardware and software. The leader will create the technologies for a new computing infrastructure for e-business. For instance:

• The global I/T infrastructure will have to be able to handle a coming flood of transactions, operations and complexity. And because there aren't enough technologists in the world to manage it all, the systems themselves must become much more spontaneous and "autonomic"—able to regulate, protect, configure and even heal themselves. In 2001, we delivered an autonomic blueprint for the industry and the academic community, and launched our own comprehensive autonomic initiative, beginning with our Project eLiza.

• At the client end of this spectrum, there will be explosive demand for custom-designed, highly energy-efficient chips. They'll be the brains inside everything from tiny medical devices to billions of Net-enabled consumer electronics products. (And, by the way, they'll also be found inside the world's largest servers and storage systems.) Fulfilling that demand is a proposition far different from stamping out millions of look-alike microprocessors for personal computers. Every kind of device will require a slightly different chip design. Our custom logic business is the largest in the world.

• Finally, at the 40,000-foot level, "grid computing" architectures will turn the Internet itself into a gigantic virtual computer that can tap and interconnect all the I/T resources—not just information, but also tools—across multiple enterprises. We're already building one such grid with the University of Pennsylvania, to bring the most advanced techniques in breast cancer screening and diagnosis to patients across the United States.

* * *

I can't close my first letter to IBM's shareholders without a word about the person I succeed in this job, and the legacy that he leaves to all of his IBM colleagues and to anyone with a stake in the success of this company. So I'll just say this: When all's said and done, Lou Gerstner is the man who recreated IBM.

When Lou arrived, IBM's very viability was in question. Even those who thought we'd survive weren't sure it mattered. After all, many technology companies have

risen from their deathbeds—but they came back smaller, diminished and, frankly, irrelevant. On top of that, many people, even inside IBM, didn't believe an outsider could do the job.

About the only person who didn't have doubts (about almost anything, it seemed!) was Lou. From his first day, he said IBM was going to get back on top. Then he set to work making it so. Nine years later, it's hard to imagine an IBM without a world-class services capability, without a self-renewing capacity for technical innovation and without the strongest product line in its history. Even more astonishing, it's becoming hard to remember an IBM whose culture wasn't grounded in simple-but-vital principles like marketplace obsession, speed, shareholder return and the make-or-break importance of talented, energized people.

That's all part of the IBM Lou envisioned in 1993, and the IBM we've built under his leadership. Along the way, Lou did one more thing. He made all of us in IBM winners again. And because he did, I'm able to tell you, our investors, that your company and its people are strong.

I'm humbled not only to be here at one of the most exciting moments in our industry's history, but to be given the privilege of leading this truly meaningful company, with the finest workforce in business. We've got the right strategic vision—one that is being emulated by many. And if there is one thing this team has proved again and again—whether it was betting on services, creating e-business, embracing Linux, or in the ongoing work to restructure our PC business—it is that we have the smarts, the agility and the guts to seize a new direction and to lead change.

Together, we're going to build on everything we've done to this point, and make IBM the most successful company in the information technology industry—and a leader among businesses in any industry. The work has already started. In fact, it never stops.

*Samuel J. Palmisano*
*President and Chief Executive Officer*

*Company Mission*

AT IBM, WE STRIVE TO LEAD IN THE CREATION, DEVELOPMENT AND MANUFACTURE OF THE INDUSTRY'S MOST ADVANCED INFORMATION TECHNOLOGIES, INCLUDING COMPUTER SYSTEMS, SOFTWARE, NETWORKING SYSTEMS, STORAGE DEVICES AND MICROELECTRONICS.

WE TRANSLATE THESE ADVANCED TECHNOLOGIES INTO VALUE FOR OUR CUSTOMERS THROUGH OUR PROFESSIONAL SOLUTIONS AND SERVICES BUSINESSES WORLDWIDE.

# Financial Report

**INTERNATIONAL BUSINESS MACHINES CORPORATION**
*and Subsidiary Companies*

# Report of Management

**INTERNATIONAL BUSINESS MACHINES CORPORATION**
*and Subsidiary Companies*

Responsibility for the integrity and objectivity of the financial information presented in this Annual Report rests with IBM management. The accompanying financial statements have been prepared in conformity with generally accepted accounting principles, applying certain estimates and judgments as required.

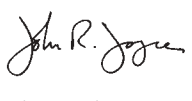
IBM maintains an effective internal control structure. It consists, in part, of organizational arrangements with clearly defined lines of responsibility and delegation of authority, and comprehensive systems and control procedures. We believe this structure provides reasonable assurance that transactions are executed in accordance with management authorization, and that they are appropriately recorded in order to permit preparation of financial statements in conformity with generally accepted accounting principles and to adequately safeguard, verify and maintain accountability of assets. An important element of the control environment is an ongoing internal audit program.

To assure the effective administration of internal control, we carefully select and train our employees, develop and disseminate written policies and procedures, provide appropriate communication channels, and foster an environment conducive to the effective functioning of controls. We believe that it is essential for the company to conduct its business affairs in accordance with the highest ethical standards, as set forth in the IBM Business Conduct Guidelines. These guidelines, translated into numerous languages, are distributed to employees throughout the world, and reemphasized through internal programs to assure that they are understood and followed.

PricewaterhouseCoopers LLP, independent accountants, is retained to examine IBM's financial statements. Its accompanying report is based on an examination conducted in accordance with generally accepted auditing standards, including a review of the internal control structure and tests of accounting procedures and records.

The Audit Committee of the Board of Directors is composed solely of outside directors, and is responsible for recommending to the Board the independent accounting firm to be retained for the coming year, subject to stockholder approval. The Audit Committee meets periodically and privately with the independent accountants, with the company's internal auditors, as well as with IBM management, to review accounting, auditing, internal control structure and financial reporting matters.

*Samuel J. Palmisano*
*President and*
*Chief Executive Officer*



*John R. Joyce*
*Senior Vice President and*
*Chief Financial Officer*

# Report of Independent Accountants

TO THE STOCKHOLDERS AND BOARD OF DIRECTORS OF INTERNATIONAL BUSINESS MACHINES CORPORATION:

In our opinion, the accompanying consolidated financial statements, appearing on pages 70 through 105, present fairly, in all material respects, the financial position of International Business Machines Corporation and subsidiary companies at December 31, 2001 and 2000, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2001, in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States of America, which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

*PricewaterhouseCoopers LLP*
*New York, New York*
*January 17, 2002*

## Road Map

The financial section of the IBM 2001 Annual Report consisting of this Management Discussion, the Consolidated Financial Statements that follow and the related notes thereto comprises 52 pages of information. The length and detail required by the various applicable reporting and disclosure rules can leave a reader somewhat overwhelmed. Therefore, this Road Map is designed to provide you with some perspective regarding the information contained in the financial section and a few helpful hints for reading the next 51 pages.

### IBM'S BUSINESS MODEL

The company's business model is relatively straightforward. IBM sells services, hardware and software. These offerings are bolstered by IBM's research and development capabilities. If a customer requires financing, IBM can provide that too. The fundamental strength of this business model is IBM's ability to assemble the optimal mix of these offerings to design tailored solutions for customers and to continue to win in the marketplace.

### FINANCIAL REPORTING

IBM follows generally accepted accounting principles. It is important for investors to understand the quality of a company's earnings, and as you read this financial section, you will learn about both recurring and nonrecurring events and trends that result in items that contribute to or reduce earnings. Some of these items and trends occur in an unpredictable fashion. Among these, the following are examples of items disclosed in this financial section:

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| Lower income from transfer of intellectual property | 62 and 91 |
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| Lower gains from certain real estate activity | 62 and 91 |
| Higher foreign currency transaction gains | 62 and 91 |

It is, however, just as or more important to maintain a longer-term perspective and to consider net income in the context of revenues and cash flows. A fundamentally sound and strong company should have strength in all three of these measures. Since 1994, IBM's business model has produced $633 billion of revenue, $85 billion of cash flows from operations, and $49 billion of net income.

IBM does not use so-called "pro forma" earnings for its quarterly earnings press releases or analysts conference calls. One of the reasons that the company does not use pro forma earnings is that many items adding to or reducing earnings are part of the company's operating business model. An example of such items is transfers of intellectual property. Although individual transactions may be large or small, the company realizes income from such transactions every quarter. See pages 62, 76 and 91 for additional information.

### HELPFUL HINTS

*Organization of Information*

• This Management Discussion section is designed to provide the reader of the financial statements with a narrative on the company's financial results. It discusses the results of operations for each segment of the business and is followed by a description of the company's financial position generally divided between the Global Financing business and the rest. Certain employee data is located at the end of this section. It is useful to read the Management Discussion in conjunction with note v, "Segment Information," on pages 100 through 105.

• Pages 70 through 74 include the Consolidated Financial Statements. These statements include an overview of the company's income and cash flow performance and its financial position.

• The notes follow the financial statements. Among other things, the notes contain the company's accounting policies (pages 75 through 79), detailed information on balances within the financial statements, certain contingencies and commitments (page 89), and the results of each IBM segment (pages 100 through 105).

*Retirement Benefits Including Pensions*

Pages 62 and 63 include a discussion of the impact that retirement benefits have on the company's Consolidated Financial Statements. On pages 76 and 77, you will find the required accounting policies for these benefits. The detailed information about each plan including financial analysis of the larger plans is provided on pages 96 through 100.

*Capital Structure*

The use of debt by the company's Global Financing business and the importance of cash flows from operations to the rest of the company are discussed on page 66. Page 67 continues the discussion with an overview of the company's total interest expense and its relation to the Global Financing unit's financial results. Pages 84 and 85 include detailed information regarding the company's debt.

*Financing Obligations*
All of the company's financing obligations are disclosed within this financial section.

*Derivatives*
The company does not use derivatives for speculative purposes. Instead, derivatives are used to mitigate certain currency and interest rate risks. The company's accounting policy for derivatives is located on pages 77 and 78. A discussion of the company's implementation of the new derivatives accounting rules is located on page 80. Details regarding the company's risk management programs and the derivatives used in these programs are located on pages 85 through 87.

We hope that this information facilitates your review of this document as you continue to evaluate IBM.

## Financial Overview of 2001

IBM achieved strong profitability in spite of a volatile and uncertain global business environment in 2001. In addition, the company gained market share in the key business segments of services, software, storage and servers. Notably, the Global Services segment finished the year with a record backlog of services contracts, despite a tough business climate. The zSeries mainframe servers, led by the z900, recorded its first full year of growth in more than a decade, and the company's new "Regatta" UNIX servers, which began shipping in December, were sold out in the fourth quarter. The company's personal computer and original equipment manufacturer (OEM) businesses slowed dramatically, principally due to pricing pressures and an ongoing economic downturn affecting the worldwide semiconductor and OEM markets.

The company's financial results for 2001 declined in comparison to 2000 in a number of key areas, but were strong relative to its competitors in the technology sector. The company's strong performance in services, software, zSeries servers and high-end storage helped its gross profit margin to move higher. Some of IBM's businesses were impacted by industry weakness; the microelectronics unit grew at a slower pace. Declines in personal computers and hard disk drives (HDD) contributed significantly to a decline in IBM revenue, however, since the personal computer and HDD markets have lower margins than other markets where IBM competes, the company's net income was affected to a lesser extent.

During the year, the company continued to make progress in its ongoing drive to reduce cost and expense. These savings helped to fund increased investment in key areas in which the company can leverage its leadership, such as research and development and sales initiatives relative to the company's high priority segments within the services, software, servers and storage businesses.

The company's cash flow continued to be very strong in 2001. IBM's strong cash flow, even in a difficult economic environment, gave the company the flexibility to make necessary and appropriate investments for the future of the business and for share repurchases.

Cash and cash equivalents and Marketable securities on the balance sheet stand at $6.4 billion, $2.7 billion above last year's level. Total debt decreased $1.4 billion. Both inventories and accounts receivable were lower versus the prior year. The company's balance sheet remains strong.

## Focus Items in 2002

Business conditions remain challenging as the company enters the new year. The company will continue to benefit from its business model with a mix of annuity-like businesses and transaction-based businesses as well as its healthy balance sheet. There are three areas in which the company is placing particular emphasis in 2002:

- Continue to grow market share in key market segments, including services offerings, software, servers, and storage subsystems.

- Improve performance in the personal computer, HDD and microelectronics businesses.

- Continue to execute on the company's productivity initiatives.

## Forward-Looking and Cautionary Statements

Certain statements contained in this Annual Report may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements involve a number of risks, uncertainties and other factors that could cause actual results to be materially different, as discussed more fully elsewhere in this Annual Report and in the company's filings with the Securities and Exchange Commission, including the company's 2001 Form 10-K to be filed on or about March 11, 2002.

## Results of Operations

(dollars in millions except per share amounts)

| FOR THE YEAR ENDED DECEMBER 31: | 2001 | 2000* | 1999* |
|---|---|---|---|
| Revenue | **$ 85,866** | $ 88,396 | $ 87,548 |
| Cost | **54,084** | 56,342 | 55,994 |
| Gross profit | **31,782** | 32,054 | 31,554 |
| Gross profit margin | **37.0%** | 36.3% | 36.0% |
| Total expense and other income | **20,829** | 20,520 | 19,797 |
| Income before income taxes | **10,953** | 11,534 | 11,757 |
| Net income | **$ 7,723** | $ 8,093 | $ 7,712 |
| Earnings per share of common stock: | | | |
| Assuming dilution | **$ 4.35** | $ 4.44 | $ 4.12 |
| Basic | **$ 4.45** | $ 4.58 | $ 4.25 |

** Reclassified to conform with 2001 presentation.*

The average number of common shares outstanding assuming dilution was lower by 40.9 million shares in 2001 versus 2000 and 59.0 million shares in 2000 versus 1999, primarily as a result of the company's common share repurchase program. The average number of common shares outstanding assuming dilution was 1,771.2 million, 1,812.1 million and 1,871.1 million, respectively, at December 31, 2001, 2000 and 1999.

Revenue in 2001 totaled $85.9 billion, a decline of 2.9 percent (up 1 percent at constant currency) compared with revenue of $88.4 billion in the year-earlier period. Global Services and Software revenue grew year over year, but was more than offset by lower Hardware, Global Financing and Enterprise Investments/Other revenue.

The Global Services segment became the largest segment in terms of revenue in 2001. The following table identifies the company's percentage of revenue:

| | 2001 | 2000 | 1999 |
|---|---|---|---|
| Global Services | **40.7%** | 37.5% | 36.7% |
| Hardware | **38.9** | 42.7 | 43.3 |
| Software | **15.1** | 14.3 | 14.5 |
| Global Financing | **4.0** | 3.9 | 3.6 |
| Enterprise Investments/Other | **1.3** | 1.6 | 1.9 |
| Total | **100.0%** | 100.0% | 100.0% |

The overall gross profit margin of 37.0 percent increased 0.7 points from 2000, following a 0.3 point increase in 2000 versus 1999. The increase in 2001 gross profit margin was primarily driven by improvement in Global Services, Software and Global Financing margins, partially offset by a lower Hardware gross profit margin. The increase in the 2000 gross profit margin was primarily driven by improvement in the Hardware margin, partially offset by a lower Global Services margin. The reference to constant currency, the best measure of comparative business growth, is made so that a segment can be viewed without the impacts of changing foreign currency exchange rates. The U.S. dollar generally strengthened against other currencies, so growth at constant currency exchange rates is higher than growth at actual currency exchange rates.

In the Americas, full-year 2001 revenue was $37.4 billion, down 3.4 percent (2 percent at constant currency) from the 2000 period. Revenue from Europe/Middle East/Africa was $24.0 billion, a decrease of 0.9 percent (up 3 percent at constant currency). Asia Pacific revenue declined 2.5 percent (up 8 percent at constant currency) to $17.2 billion. OEM revenue decreased 7.2 percent (6 percent at constant currency) to $7.2 billion.

Information about the company's operating segments can be found in note v, "Segment Information," on pages 100 through 105. Note v provides additional information, including a description of the products and services of each segment, as well as financial data pertaining to each segment.

The following discussion is based on the Consolidated Financial Statements on pages 70 through 74, which reflect, in all material respects, the company's segment results on an external basis.

### GLOBAL SERVICES

| (dollars in millions) | 2001 | 2000 | 1999 |
|---|---|---|---|
| Revenue | **$ 34,956** | $ 33,152 | $ 32,172 |
| Cost | **25,355** | 24,309 | 23,304 |
| Gross profit | **$ 9,601** | $ 8,843 | $ 8,868 |
| Gross profit margin | **27.5%** | 26.7% | 27.6% |

Global Services revenue increased 5.4 percent (10 percent at constant currency) in 2001 over 2000 and 3.0 percent (6 percent at constant currency) in 2000 over 1999. Global Services revenue, excluding maintenance, increased 6.8 percent (11 percent at constant currency) in 2001 versus 2000 and 3.7 percent (7 percent at constant currency) in 2000 versus 1999. Maintenance revenue declined 2.2 percent (up 2 percent at constant currency) in 2001 versus 2000 and was essentially flat (up 4 percent at constant currency) in 2000 when compared to 1999.

Global Services experienced a slowdown in contract signings in the middle of the year, particularly in short-term engagements, which affected the growth of Global Services revenue in 2001. Strategic Outsourcing Services and Integrated Technology Services contributed significantly to the revenue growth in 2001 and 2000. Strategic Outsourcing Services continued to demonstrate solid revenue growth,

particularly in Asia Pacific, and in its Web hosting offerings. Web hosting is an e-sourcing service that became a $1 billion business in 2001. Integrated Technology Services grew its revenue in support of server consolidations, business continuity services, and its OEM alliances. Global Services revenue growth in support of non-IBM hardware deployment continues to moderate due to the slowdown in personal computer, telecommunications and networking equipment providers. Business Innovation Services (BIS) revenue grew but it was affected the most by the current economic environment. This business includes consulting and systems integration. Despite a slowdown in the BIS market, especially in the U.S., customers continued to deploy e-business applications such as customer relationship management and supply chain management and to perform e-business integration of their business processes and multiple applications.

Revenue comparisons in 2000 were adversely affected by two events: the sale of the Global Network to AT&T in 1999 and the decline in Y2K services activity year over year. After adjusting for those two factors, Global Services revenue (excluding maintenance) increased 9 percent in 2000 versus 1999. (See "Divestitures," on page 82 for additional information about the Global Network sale.) In 2000, Integrated Technology Services revenue was affected by the loss of revenue due to the sale of the Global Network and BIS was affected primarily by the decline in Y2K activity. BIS recovered in the second half of 2000 as customers shifted from mature offerings such as custom systems integration and Y2K remediation to the company's e-business offerings. BIS revenue, exclusive of Y2K and custom systems integration, experienced strong growth in 2000.

In 2001, the company signed contracts totaling $51 billion, including 39 contracts in excess of $100 million, six of which exceeded $1 billion. These transactions contributed to a services backlog at December 31, 2001, of $102 billion compared with $85 billion at December 31, 2000. The company experienced an acceleration in contract signings in the fourth quarter of 2001 and a strong pipeline of contracts at December 31, 2001, that should have a positive effect on Global Services revenue growth in 2002. Also, in 2002, the annuity-like portions of Global Services, particularly outsourcing and maintenance, should mitigate the downturn in other businesses until the economy recovers. To extend the benefits of outsourcing, the company is in the forefront of e-sourcing—the delivery of infrastructure, applications and business processes over the Internet as a service. The company intends to provide the infrastructure technologies that all of these service providers will require, as well as to provide many of the services themselves.

Global Services gross profit dollars increased 8.6 percent in 2001 compared to 2000 and were essentially flat in 2000 versus 1999. The gross profit margin increased 0.8 points in 2001 versus 2000 and declined 0.9 points in 2000 versus 1999. The increases in both gross profit dollars and gross profit margin in 2001 were a result of reduced labor and parts costs across all geographies for maintenance offerings and cost reductions across all services offerings. The decline in gross profit margin in 2000 was primarily driven by lower utilization rates in BIS and Integrated Technology Services due to rapid hiring and retraining associated with rebalancing skills toward e-business services. Also contributing to the decline was a revenue shift to OEM alliances, which have a lower gross profit margin. These declines were partially offset by an improvement in the maintenance gross profit margin.

HARDWARE

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| Revenue | **$ 33,392** | $ 37,777 | $ 37,888 |
| Cost | **24,137** | 27,038 | 27,591 |
| Gross profit | **$ 9,255** | $ 10,739 | $ 10,297 |
| Gross profit margin | **27.7%** | 28.4% | 27.2% |

Hardware revenue declined 11.6 percent (8 percent at constant currency) in 2001 versus 2000 and was essentially flat (up 2 percent at constant currency) in 2000 compared with 1999.

Effective in the first quarter 2001, the company made changes in the organization of its Hardware segment. These changes include the transfer of the xSeries (Intel-based) servers from the Personal Systems segment to the Enterprise Systems segment, and the transfer of the Printing Systems Division from the Technology segment to the newly formed Personal and Printing Systems segment, consisting of the realigned Personal Computer Division, Retail Store Solutions Division and the Printing Systems Division. All amounts disclosed herein for all years presented have been reclassified to conform with these changes.

In 2001, Enterprise Systems revenue declined 3.2 percent from 2000, following an increase of 2.6 percent in 2000 versus 1999. zSeries revenue grew in 2001, the first full year of revenue growth since 1989, a clear recognition of the unique advantages mainframes offer to the company's customers. Total deliveries of zSeries computing power increased more than 30 percent as measured in MIPS (millions of instructions per second) versus 2000. In addition, revenue growth in storage products was driven by high-end products ("Shark"). pSeries revenue decreased in 2001 as the market for UNIX-based servers declined substantially, but the new high-end

"Regatta" servers began shipping in December 2001, and were sold out in the fourth quarter. Entry and mid-range pSeries revenue declined in 2001, but the company will strengthen these products by bringing Regatta's Power-4 technology to the products later in 2002. Revenue from iSeries declined in 2001; however, it benefited from server consolidations and Linux late in the year. Although the pSeries and iSeries servers had declining revenue, these products gained market share in 2001 against their competitors. xSeries revenue also declined, reflecting the extremely competitive environment in the Intel-based server market.

The company is investing in an initiative (project eLiza) that will deliver self-managing systems technology across the company's entire e-server product portfolio within the next five years. Project eLiza involves developing systems that can configure, optimize, fix and protect themselves. This project will give businesses the ability to manage systems and technology that are significantly more complex than those in existence today.

In 2000, revenue increased for both xSeries servers and pSeries UNIX servers, with particular strength in the mid-range and high-end pSeries Web servers. In addition, revenue from the company's storage products, which include "Shark," increased in 2000. These increases were partially offset by revenue declines for the mid-range iSeries servers and the zSeries servers in 2000 as compared to 1999.

Personal and Printing Systems revenue declined 20.6 percent in 2001 from 2000, following a decrease of 3.2 percent in 2000 versus 1999 with personal computers, retail store solutions and printing systems all showing declines. The personal computer revenue decline reflects demand weakness and price erosion across all product lines. The company continues to focus on reducing cost and expense in the personal computer business as well as achieving maximum utilization through the company's direct fulfillment channel via the Internet. In the fourth quarter of 2001, 44 percent of the personal computer division revenue was through the direct fulfillment channel via the Internet versus 34 percent in 2000. In February 2002, the company completed the sale of its U.S. and European desktop personal computer manufacturing to Sanmina-SCI. Pursuant to the transaction agreement, the company will outsource its NetVista desktop manufacturing operations to Sanmina-SCI. This transaction will allow the company to eventually further lower its cost, while it continues to develop and sell a full line of personal computer products and services as part of its end-to-end solutions to help customers build their computer infrastructure.

The change in 2000 revenue was driven by decreased revenue in desktop personal computer and retail store solutions revenue, partially offset by increased mobile products revenue. The decline in desktop revenue was driven by consumer products, as the company decided in 1999 to exit retail channels in the U.S. and Europe.

Technology revenue in 2001 decreased 6.4 percent when compared with 2000, following an increase of 6.1 percent in 2000 versus 1999. The decline in the Technology segment revenue was driven by the semiconductor industry's severe downturn which began affecting the company in the second quarter of 2001. In addition, HDD revenue declined as the company's ability to sell HDDs is highly dependent on the personal computer industry. The uncertainty in this industry is affecting both the company's HDD and personal computer results. The company continues to evaluate various alternatives to mitigate the impact of HDDs on the results of the company. These alternatives include, among other actions, rebalancing sources of supply and re-examining manufacturing efficiencies. The increase in 2000 revenue was driven by strong growth in custom logic, networking and pervasive computing products, partially offset by lower HDD revenue.

The company took actions in 1999 in the microelectronics and HDD areas that were aimed at strengthening the Technology segment over the long-term. Those actions were intended to shift the focus of the Technology segment to higher margin businesses and more efficient operations.

Hardware gross profit dollars decreased 13.8 percent in 2001 from 2000, following a 4.3 percent increase in 2000 versus 1999. The Hardware gross profit margin declined 0.7 points in 2001 following an increase of 1.2 points in 2000 versus 1999. The decline in gross profit dollars and gross profit margin was primarily due to lower volumes in the company's Technology segment and pricing pressures in personal computers and HDDs.

The increase in 2000 gross profit margin was primarily driven by improved margins in microelectronics and personal computers.

### SOFTWARE

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| Revenue | **$ 12,939** | $ 12,598 | $ 12,662 |
| Cost | **2,265** | 2,283 | 2,240 |
| Gross profit | **$ 10,674** | $ 10,315 | $ 10,422 |
| Gross profit margin | **82.5%** | 81.9% | 82.3% |

Software revenue increased 2.7 percent (7 percent at constant currency) in 2001, following a decline of 0.5 percent (up 4 percent at constant currency) in 2000 from 1999. The company's middleware products grew revenue 5 percent (9 percent at constant currency) in 2001 and 3 percent (8 percent at constant currency) in 2000. Middleware comprises data management, transaction processing, Tivoli systems management and Lotus Notes messaging and collaboration for both IBM and non-IBM platforms. Middleware revenue increases in 2001 and 2000 were driven by strong growth in WebSphere (Web application server software), DB2 (data management) and MQSeries (business integration software) offerings. Revenue from the acquisition of the Informix database business in July 2001 contributed about 62 percent of the middleware software growth in 2001. These increases were partially offset by revenue declines in Tivoli and Lotus products. Although revenue was down in both 2001 and 2000 in Tivoli and Lotus businesses, both units grew revenue sequentially from quarter to quarter within 2001. The company continues to focus on helping customers use IBM's software to transform businesses to e-businesses across all platforms. To achieve this, the company uses its services offerings, 74 strategic alliances, 56,000 business partners and a 10,000-person dedicated software sales force. These provide the company with strong momentum in its Software business as it enters 2002.

Operating systems software revenue declined 3 percent (up 1 percent at constant currency) in 2001 and 9 percent (5 percent at constant currency) in 2000 compared with the prior year. The decline in 2001 resulted from lower revenue associated with iSeries and pSeries server products. The decline in 2000 was driven by lower revenue associated with e-server products and legacy (S/390, AS/400 and RS/6000) products.

Software gross profit dollars increased 3.5 percent in 2001 from 2000, following a decrease of 1.0 percent in 2000 from 1999. The Software gross profit margin improved 0.6 points in 2001 following a decline of 0.4 points in 2000 compared to 1999. The increase in gross profit dollars and gross profit margin was primarily due to higher Software revenue, lower service costs and purchased vendor software, partially offset by higher amortization costs and vendor royalty payments in 2001 versus 2000. The decline in gross profit dollars and gross profit margin in 2000 was primarily due to lower revenue, higher costs for purchased vendor software and higher vendor royalty payments, partially offset by lower amortization and services costs.

### GLOBAL FINANCING

| (dollars in millions) | **2001** | 2000* | 1999* |
|---|---|---|---|
| Revenue | **$ 3,426** | $ 3,465 | $ 3,137 |
| Cost | **1,693** | 1,965 | 1,821 |
| Gross profit | **$ 1,733** | $ 1,500 | $ 1,316 |
| Gross profit margin | **50.6%** | 43.3% | 41.9% |

** Reclassified to conform with 2001 presentation.*

Global Financing revenue declined 1.1 percent (up 1 percent at constant currency) in 2001 from 2000, following an increase of 10.4 percent (13 percent at constant currency) in 2000 versus 1999. The decline in 2001 was primarily a result of a lower earnings-generating asset base and lower used equipment sales. The revenue increase in 2000 over 1999 was due to higher used equipment sales and commercial financing activity.

Global Financing gross profit dollars increased 15.5 percent in 2001 versus 2000, following an increase of 14.0 percent in 2000 versus 1999. The Global Financing gross profit margin improved 7.3 points in 2001 following an increase of 1.4 points in 2000 as compared to 1999. The increases in 2001 gross profit dollars and gross profit margin were primarily driven by lower borrowing costs related to the current interest rate environment and increased margin in used equipment sales. The increase in 2000 was primarily driven by higher sales of used equipment and an improving gross profit margin on these sales. See Management Discussion on page 62 for additional information regarding Cost of Global Financing reclassification effective in 2001. All amounts displayed herein for all years presented have been reclassified to conform with these changes. (Also see the "Debt and Equity" section of Management Discussion on pages 66 and 67 for additional discussion of Global Financing debt.)

### ENTERPRISE INVESTMENTS/OTHER

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| Revenue | **$ 1,153** | $ 1,404 | $ 1,689 |
| Cost | **634** | 747 | 1,038 |
| Gross profit | **$ 519** | $ 657 | $ 651 |
| Gross profit margin | **45.0%** | 46.8% | 38.5% |

As expected, Enterprise Investments/Other revenue decreased 17.9 percent (14 percent at constant currency) from 2000, following a decrease of 16.9 percent (13 percent at constant currency) in 2000 from 1999. The decreases in revenue were a result of the company's strategy to shift development and distribution of custom-made products to third-party

companies. In addition, computer-aided three-dimensional interactive application (CATIA) related products revenue decreased in 2001 versus 2000, and their revenue grew slightly in 2000 versus 1999.

The gross profit dollars from Enterprise Investments/Other declined 21.0 percent in 2001 versus 2000 and increased 0.9 percent in 2000 versus 1999. The Enterprise Investments/Other gross profit margin declined 1.8 points in 2001 following an increase of 8.3 points in 2000 versus 1999. The decline in 2001 gross profit dollars and margin was primarily a result of lower revenue in 2001 as compared to 2000. The increase in 2000 gross profit dollars and margin was primarily due to a shift in the mix of revenue to products that have a higher gross profit margin than the product lines the company discontinued in 1999.

### EXPENSE AND OTHER INCOME

Amounts within the Expense and Other Income section of the Consolidated Statement of Earnings have been reclassified to provide additional details. See "Reclassifications," on page 79.

| (dollars in millions) | **2001** | 2000* | 1999* |
|---|---|---|---|
| Selling, general and administrative | **$ 17,197** | $ 17,535 | $ 16,294 |
| Percentage of revenue | **20.0%** | 19.8% | 18.6% |
| Research, development and engineering | **5,290** | 5,374 | 5,505 |
| Percentage of revenue | **6.2%** | 6.1% | 6.3% |
| Intellectual property and custom development income | **(1,535)** | (1,728) | (1,506) |
| Other (income) and expense | **(361)** | (1,008) | (848) |
| Interest expense | **238** | 347 | 352 |
| Total expense and other income | **$ 20,829** | $ 20,520 | $ 19,797 |

** Reclassified to conform with 2001 presentation.*

Selling, general and administrative (SG&A) expense declined 1.9 percent in 2001 versus 2000, following an increase of 7.6 percent in 2000 compared with 1999.

See "Expense and Other Income," on page 76 for a description of the expenses.

The company continued to reduce its SG&A expense by using technology to improve its efficiency. The increased use of e-procurement, ibm.com, e-Care for customer support and other actions related to the company's ongoing e-business transformation resulted in substantial productivity improvements in 2001. In addition, the company continued to reduce discretionary spending such as travel and consulting in 2001 and benefited from lower goodwill amortization expense during the year as goodwill relating to several older acquisitions became fully amortized. The decreases were partially offset by higher charges taken for workforce rebalancing actions and bad debt expense in 2001 versus 2000. Future levels of SG&A expense arising from bad debt expense will depend upon the prevailing economic conditions, estimated value of collateral, and the overall health of and any concentrations in the company's receivables portfolio.

The increase in 2000 SG&A expense was primarily driven by the 1999 net pre-tax benefit of $2,107 million associated with the sale of the Global Network, actions taken by the company in 1999 to improve its competitiveness and to strengthen the company's overall business portfolio, and implementation of a change in personal computers' depreciable lives. (See "Divestitures," on page 82, and note q, "1999 Actions," on pages 91 through 93 for further information.) Excluding the 1999 actions and sale of the Global Network, 2000 SG&A expense would have declined 4.7 percent versus 1999. In addition, the percentage of revenue would have been 21.0 percent for 1999.

As described in "New Standards to be Implemented," on pages 80 and 81, the company adopted new accounting rules that eliminate the amortization of goodwill on January 1, 2002. The new rules also provide for no goodwill amortization on any acquisitions that occurred after June 30, 2001. The amount of goodwill amortization, net of tax, that was recorded in 2001, 2000 and 1999 was $262 million, $436 million, and $420 million, respectively. The amount of goodwill amortization, net of tax, that would have been recorded in 2002 if the new rules were not adopted on January 1, 2002, (excluding the Informix acquisition that occurred after June 30, 2001, and any other post-2001 acquisition) would have been $244 million.

Research, development and engineering (RD&E) expense declined 1.6 percent in 2001 from 2000, following a decrease of 2.4 percent in 2000 from 1999. The decline in 2001 was a result of actions taken to reduce overhead. In addition, the company reprioritized its spending to increase its investment in high-growth opportunities such as e-business, initiatives to support Linux and middleware software products. In addition, as discussed on page 59, the company is also investing in project eLiza that will deliver self managing systems technology across its entire e-server product portfolio, within the next five years. The decline in 2000 is primarily due to a $111 million pre-tax charge taken in 1999 for acquired in-process research and development (IPR&D) associated with the acquisition of Sequent Computer Systems, Inc., Mylex Corporation and DASCOM, Inc. See note c, "Acquisitions/Divestitures," on page 82 for further detail about the IPR&D charge.

As a result of its ongoing research and development efforts, the company was awarded the most U.S. patents in 2001 for the ninth consecutive year, with a record 3,411 issued by the U.S. Patent and Trademark Office. This represents nearly a 20 percent increase over its previous record of 2,886 set in 2000, and the company becomes the first patent holder in history to be granted more than 3,000 U.S. patents in a single year.

More than one-third of the technologies the company patented last year are already being applied to its product and service offerings. For example, magnetic recording media with antiferromagnetically coupled (AFC) ferromagnetic films as the recording layer is the company's "pixie dust" patent. Pixie dust is a new type of magnetic coating that is eventually expected to quadruple the data density of current hard disk drive products. In 2001, the company shipped more than 5.3 million disk drives manufactured with AFC.

Intellectual property and custom development income include both sales and other transfers as well as license/royalty bearing fee transfers. The sales and other transfers in 2001, which included $280 million of pre-tax income from the transfer of the company's optical transceiver intellectual property, declined from 2000 due to lower activity. These amounts can vary from year to year. The amount of income from intellectual property licensing/royalty-based fee transactions has declined in recent years and may continue this trend in 2002. See "Intellectual Property and Custom Development Income," on page 91 for additional information.

Other income and expense declined 64.2 percent in 2001 versus 2000 and increased 18.9 percent in 2000 versus 1999. The decline in 2001 was primarily due to write-downs ($405 million) of certain equity investments for other-than-temporary market declines. In addition, the company realized lower gains from sales of securities and other investments, lower interest income (other than from the company's Global Financing business transactions) and lower net realized gains from certain real estate activities in 2001 versus 2000. The increase in 2000 versus 1999 was primarily a result of higher net realized gains from certain real estate activity and an increase in foreign currency transaction gains, partially offset by lower interest income and lower gains from sales of securities and other investments.

Effective January 1, 2001, interest expense is presented in Cost of Global Financing in the Consolidated Statement of Earnings if the related external borrowings to support the Global Financing business were issued by either the company or its Global Financing unit (see pages 66 and 67 for a discussion of Global Financing debt and interest expense). In prior periods, the caption only included interest related to direct external borrowings of Global Financing. Prior period results have been reclassified to conform with the current period presentation.

Interest expense, excluding amounts recorded in Cost of Global Financing, declined 31.4 percent in 2001 from 2000 and 1.4 percent in 2000 versus 1999. The declines were primarily due to lower average interest rates and a decline in average debt outstanding in the periods.

The following table provides the total pre-tax (income)/cost for retirement-related plans for 2001, 2000 and 1999. (Income)/cost amounts are included as a reduction from/addition to, respectively, the company's cost and expense amounts on the Consolidated Statement of Earnings.

*Retirement-Related Benefits*

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| Total retirement-related plans | **$ (437)** | $ (327) | $ 83 |
| Comprise: | | | |
| Defined benefit and contribution pension plans | **(841)** | (728) | (288) |
| Nonpension post-retirement benefits | **404** | 401 | 371 |

The additional income contributed by the defined benefit plans of the company in 2001 was principally due to the long-term investment returns generated by the pension trust assets. As discussed in "Retirement-Related Benefits," on pages 76 and 77, there will almost always be a difference in any given year between the company's expected return on plan assets and the actual return. These differences are spread over time in accordance with Statement of Financial Accounting Standards (SFAS) No. 87, "Employers' Accounting for Pensions." Although actual returns in 2001 were less than expected returns in the U.S. pension plan, the cumulative excess of actual returns over expected returns was $5.3 billion since 1986 (the year in which the company was required to adopt SFAS No. 87). Each year's difference is recognized over a number of years following the year that each difference arises. Therefore, the 2001 shortfall between actual and expected returns in the U.S. will be recognized in the net periodic pension calculation over the next five years along with the excess actual versus expected returns in recent years and any other differences arising in future years.

Although the income from defined benefit pension plans represents a contribution to the company's reported Income before income taxes, these amounts are partially offset by the costs of the company's nonpension postretirement medical benefits. Moreover, these amounts have positive implications for the company's employees, retirees and shareholders. The returns that the fund has experienced over time resulted in these benefits. As a result, despite the recent downturn in the equity and financial markets, the trust funds have continued

to provide the capacity to meet their obligations to current and future retirees.

The largest retirement-related benefit plan is the U.S. Personal Pension Plan (PPP). See page 96 for the impact that the PPP had on the company's Income before income taxes. The following is a discussion of the impacts of recent changes relating to the PPP on the company's financial results. Refer to page 98 for a table containing the actuarial assumption changes.

The following is the historical actual average rates of return on plan assets in the PPP:

| | **2001** | 2000 | 1999 | 1998 | 1997 |
|---|---|---|---|---|---|
| Actual annualized rates of return: | | | | | |
| 15-year average | **10.3%** | 11.9% | 13.5% | 12.8% | 13.0% |
| 10-year average | **10.0%** | 12.5% | 12.3% | 12.7% | 12.4% |
| Expected rate of return assumptions | **10.0%** | 10.0% | 9.5% | 9.5% | 9.5% |

The company uses long-term historical actual return experience, the expected investment mix of the plans' assets, and future estimates of long-term investment returns to develop its expected rate of return assumption used in the net periodic pension calculation. This assumption is reviewed and set annually at the beginning of each year. Accordingly, the change for 2000 and the decision to leave the rate unchanged in 2001 was made at the beginning of each respective year. At the beginning of 2002, using the process described above, the company reduced its expected long-term return on the U.S. plan asset assumption from 10.0 percent to 9.5 percent. This change and the impact of 2002 changes in the expected long-term rate of return on plan assets for certain non-U.S. plans is expected to reduce 2002 net retirement plan income by approximately $350 million. The change in expected long-term return on U.S. plan assets in 2000 resulted in an additional $195 million of net retirement plan income for the year ended December 31, 2000.

The company annually sets its discount rate assumption for retirement-related benefits accounting to reflect the rates available on high-quality, fixed-income debt instruments. Using this process, the company changed its discount rate assumption for the PPP from 7.25 percent to 7.0 percent, effective December 31, 2001. This change is not expected to have a material effect on the company's 2002 results of operations. The change in the discount rate from 7.75 percent to 7.25 percent, effective December 31, 2000, did not have a significant impact on the company's results of operations for the year ended December 31, 2001. Effective January 1, 2001, the company increased pension benefits to certain recipients who retired before January 1, 1997. The increases ranged from 2.5 percent to 25 percent, and are based on the year of retirement and the pension benefit currently being received. This improvement resulted in an additional cost to the company of approximately $100 million in 2001.

The change in discount rate assumption for the 2000 U.S. plan year did not have a significant impact on the company's results of operations for the year ended December 31, 2000.

Future effects of pension plans, including the changes noted above, on the operating results of the company depend on economic conditions, employee demographics, mortality rates and investment performance.

See note v, "Segment Information," on pages 100 through 105 for additional information about the pre-tax income of each segment, as well as the methodologies employed by the company to allocate shared expenses to the segments.

### PROVISION FOR INCOME TAXES

The provision for income taxes resulted in an effective tax rate of 29.5 percent for 2001, compared with the 2000 effective tax rate of 29.8 percent and a 1999 effective tax rate of 34.4 percent. The 4.6 point decrease in the 2000 rate from the 1999 rate was primarily the result of the company's 1999 sale of its Global Network business and various other actions implemented during 1999. Had it not been for these 1999 actions, the company's 1999 effective tax rate would have been 30 percent (essentially flat from 1998 through 2001).

As reflected in the reconciliation of the company's effective tax rate in note o, "Taxes," on pages 90 and 91, the increased benefit on the company's tax rate of the foreign tax differential in 2000 was principally due to the U.S. tax benefit from the repatriation of profits previously subject to foreign taxes, partially offset by a less favorable mix of profits arising in markets with lower effective tax rates.

## Fourth Quarter

In the quarter ended December 31, 2001, the company had diluted earnings per common share of $1.33, a 10.1 percent decrease compared with diluted earnings per common share of $1.48 in the fourth quarter of 2000. Fourth-quarter 2001 net income was $2.3 billion, a 12.7 percent decrease from $2.7 billion in the year-earlier period. The company's fourth quarter 2001 revenue totaled $22.8 billion, down 10.9 percent (8 percent at constant currency) compared with fourth quarter of 2000.

In the Americas, fourth-quarter revenue was $9.8 billion, a decrease of 9.1 percent (8 percent at constant currency) from the 2000 period. Revenue from Europe/Middle East/Africa was $6.9 billion, down 6.3 percent (6 percent at constant currency). Asia Pacific revenue declined 9.8 percent (1 percent at constant currency) to $4.5 billion. OEM revenue

decreased 34.4 percent (33 percent at constant currency) to $1.6 billion compared with the fourth quarter of 2000.

Revenue from Global Services, including maintenance, declined 1.4 percent (up 1 percent at constant currency) in the fourth quarter to $9.1 billion. Global Services revenue, excluding maintenance, declined 1.6 percent (up 1 percent at constant currency). The company's annuity-like outsourcing and maintenance businesses continued to perform well, but the company felt the economic pressure in Consulting Services and BIS during the quarter. In addition, a slowdown in contract signings in the middle of the year, particularly in short-term engagements, affected the company's fourth quarter revenue. New contract signings for Global Services in the fourth quarter were approximately $15 billion.

Hardware revenue decreased 24.0 percent (21 percent at constant currency) to $8.7 billion from the 2000 fourth quarter. Mainframe computing capacity, however, grew 12 percent in the fourth quarter, as measured in MIPS. Revenue from the company's UNIX-based pSeries declined, in large part because of transition to the company's new "Regatta" family of UNIX servers, which began shipping on December 14, 2001. Personal computer and microelectronics revenue decreased substantially over the prior year's quarter, principally due to price pressures in personal computers and an ongoing downturn affecting the worldwide semiconductor and OEM markets. Revenue from the company's high-end storage product "Shark" grew in a declining market.

Software revenue increased 6.0 percent (8 percent at constant currency) to $3.8 billion compared to the prior year's fourth quarter. Overall, the company's middleware software revenue grew 9 percent (10 percent at constant currency). The company's data management and WebSphere products had strong growth versus the fourth quarter of 2000. Although fourth-quarter revenue declined year to year in the company's Tivoli and Lotus businesses, both units had strong revenue growth sequentially. Tivoli and Lotus are benefiting from operational efficiencies gained as a result of integrating their business processes into the company's Software business, which has improved profitability in both units. Operating system revenue declined 4 percent (2 percent at constant currency).

Global Financing revenue decreased 4.6 percent (4 percent at constant currency) in the fourth quarter to $927 million primarily due to a lower earnings-generating asset base and lower sales of used equipment. As expected, revenue from the Enterprise Investments/Other area, which includes custom-made products to third-party companies, declined 20.0 percent (18 percent at constant currency) compared to the fourth quarter of 2000 to $340 million. The company has been consistently shifting development and distribution of products in this segment to third-party companies.

The company's total gross profit margin improved to 38.3 percent in the 2001 fourth quarter from 37.3 percent in the 2000 fourth quarter. Gross margins improved in each revenue segment except for Hardware, which declined by 4.1 points, due to low volumes in the Technology segment and pricing pressures in personal computers and HDDs.

Despite absorbing workforce-balancing actions and write-downs of certain equity investments, the company's Total Expense and Other Income improved 5.6 percent to $5.4 billion. The improvement came from each of the company's two main expense categories: SG&A expense as well as research and development expense. The company continued to reduce its expense and improve operating efficiencies through the use of electronic procurement, sales, education and customer support systems. These systems, known as e-procurement, ibm.com, e-learning and e-Care, have resulted in substantial productivity improvements. The company's fourth quarter 2001 Intellectual property and custom development income, which includes the transfer of the company's optical transceiver intellectual property, was essentially flat compared to such income in 2000.

The company's tax rate in the fourth quarter was 29.3 percent compared with 29.5 percent in the fourth quarter of 2000.

The company spent approximately $1.0 billion on common share repurchases in the fourth quarter. The average number of common shares outstanding assuming dilution was lower by 32.6 million shares in fourth quarter of 2001 versus the fourth quarter of 2000, primarily as a result of the ongoing common share repurchase program. The average number of shares assuming dilution was 1,758.0 million in fourth quarter 2001 versus 1,790.6 million in fourth quarter 2000.

## Financial Condition

During 2001, the company continued to demonstrate strong financial performance, enabling it to make appropriate investments to support future growth and increase shareholder value. The company spent $5,844 million for research, development and engineering, including software development that was capitalized on the Consolidated Statement of Financial Position, $4,483 million for plant and other property, including machines used in strategic outsourcing contracts; $1,177 million for machines on operating leases with customers; and $5,293 million for the repurchase of the company's common shares. In addition, the company paid cash totaling approximately $916 million of the aggregate $1,082 million purchase price of the company's two acquisitions in 2001. The company had $6,393 million in Cash and cash equivalents and current Marketable securities at December 31, 2001. The company's debt levels declined $1,425 million in 2001 primarily due to a decline in Global

Financing debt, offset by an increase in non-global financing debt. The decline in Global Financing debt was the result of the decrease in Global Financing assets.

Effective May 31, 2001, the company arranged global credit facilities totaling $12.0 billion in committed credit lines, including an $8.0 billion five-year facility and a $4.0 billion 364-day facility, replacing the company's $10 billion credit facility which was due to expire in February 2002. Amounts unused and available under these facilities were $11,383 million and $9,103 million at December 31, 2001 and 2000, respectively. In addition, at December 31, 2001 and 2000, the company had in place other lines of credit, most of which were uncommitted, of $6,860 million and $7,646 million, respectively. The amounts unused and available under these primarily uncommitted facilities at December 31, 2001 and 2000, were $4,738 million and $5,111 million, respectively.

At December 31, 2001 and 2000, the company had a total balance of state and local government loans receivable securitized of $213 million and $136 million, respectively. For additional information, see note i, "Sale and Securitization of Receivables," on page 84.

The changes in the company's U.S. pension plan during 2001, including the increased benefits for retirees and the 1999 amendment to the plan, are not expected to have a material effect on the company's financial condition.

The major rating agencies' ratings of the company's debt securities at December 31, 2001, appear in the table below:

| | Standard and Poor's | Moody's Investors Service | Fitch, Inc. |
|---|---|---|---|
| Senior long-term debt | A+ | A1 | AA- |
| Commercial paper | A-1 | Prime-1 | F-1+ |

## CASH FLOWS

The company's cash flows from operating, investing and financing activities, as reflected in the Consolidated Statement of Cash Flows on page 74, are summarized in the following table:

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| Net cash provided from/ (used in): | | | |
| Operating activities | **$ 14,265** | $ 9,274 | $ 10,111 |
| Investing activities | **(6,106)** | (4,248) | (1,669) |
| Financing activities | **(5,309)** | (6,359) | (8,625) |
| Effect of exchange rate changes on cash and cash equivalents | **(83)** | (147) | (149) |
| Net change in cash and cash equivalents | **$ 2,767** | $ (1,480) | $ (332) |

## WORKING CAPITAL

| (dollars in millions) AT DECEMBER 31: | **2001** | 2000 |
|---|---|---|
| Current assets | **$ 42,461** | $ 43,880 |
| Current liabilities | **35,119** | 36,406 |
| Working capital | **$ 7,342** | $ 7,474 |
| Current ratio | **1.21:1** | 1.21:1 |

Current assets decreased $1,419 million due primarily to decreases in accounts receivable of $3,708 million, Inventories of $461 million and Deferred taxes of $299 million, offset by net increases of $2,671 million in Cash and cash equivalents and current Marketable securities, and $378 million in Prepaid expenses and other current assets. The decline in accounts receivable was primarily attributable to lower fourth quarter 2001 revenue volumes as compared to the fourth quarter of 2000. The net increase in Cash and cash equivalents and current Marketable securities was due primarily to an increase in cash from operations and a reduction in common stock transactions, mainly from lower stock repurchases, partially offset by an increase in investment and acquisition activities.

The company ended 2001 with Inventories of $4,304 million, the lowest level since 1983, primarily as a result of lower inventory levels within the Personal and Printing Systems segment. The company's inventory turnover ratio declined to 5.8 in 2001 from 6.3 in 2000.

Current liabilities declined $1,287 million from year-end 2000, primarily due to decreases of $1,145 million in Accounts payable, $644 million in Other accrued expenses and liabilities and $293 million in Deferred income, offset by an increase of $983 million in Short-term debt.

## INVESTMENTS

The company's investments for Plant, rental machines and other property were $5,660 million for 2001, remaining essentially flat.

In addition to software development expenses included in RD&E expense, the company capitalized $655 million of software costs during 2001, an increase of $90 million from the 2000 period. The increase resulted from increases in capitalized costs for both internal-use software and licensed programs.

Investments and sundry assets were $17,102 million at the end of 2001, an increase of $2,655 million from 2000, primarily the result of increases in Prepaid pension assets and Informix goodwill, offset by declines in Alliance investments and Deferred taxes. See note h, "Investments and Sundry Assets," on page 84 for additional information.

The company continues to invest in its Global Services, Software, Global Financing and selected hardware businesses. The company continues its plans to invest approximately $5 billion in its microelectronics business. These investments include building an advanced 300mm chip-making facility in East Fishkill, New York and expanding its chip-making and chip-packaging operations worldwide. In 2001, approximately $1.2 billion has been spent on these investments. The remaining amount is to be invested over the next three years.

The company has remaining authorization at December 31, 2001, to purchase $4.6 billion of IBM common shares in the open market from time to time, based on market conditions.

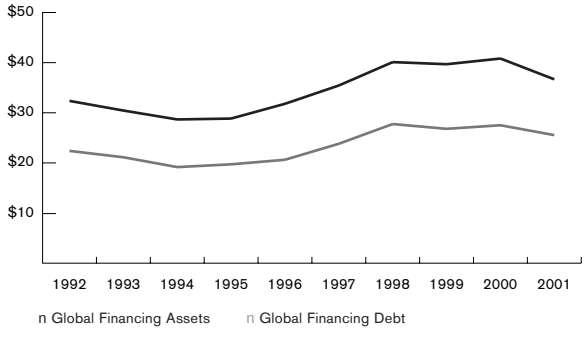
The company expects to fund all of these investments primarily with cash from ongoing operations.

### DEBT AND EQUITY

The company's debt level of $27 billion is almost entirely (more than 94 percent) the result of the company's Global Financing business. The Global Financing business provides financing primarily to the company's customers and business partners. Using the typical financing business model, Global Financing funds its operations primarily through borrowings. It uses a debt to equity ratio of approximately 7 to 1. Global Financing generates income by charging its customers a higher interest rate than the interest expense on Global Financing borrowings.

*Global Financing Assets and Debt*

(dollars in billions)




The company's operations are essentially self-funding except for the company's Global Financing business which leverages debt.

As a result, the $5.3 billion of share repurchases, $5.7 billion of capital additions, and $5.8 billion of RD&E spending, including software development that was capitalized on the Consolidated Statement of Financial Position, were made possible from cash generated by operations, not external company borrowings.

The company's funding requirements are continually monitored and strategies are executed to manage the company's overall asset and liability profile. Additionally, the company maintains sufficient flexibility to access global funding sources as needed. During 2001, the company issued debt denominated in U.S. dollars, Japanese yen, British pounds and Canadian dollars to meet existing financing needs.

The company's total debt decreased $1,425 million to $27,151 million. Based upon the company's two different capital structures as previously discussed in this section, the analysis of this change and certain ratios are discussed below on both a Global Financing and a non-global financing basis.

*Global Financing*

(dollars in millions)

| AT DECEMBER 31: | **2001** | 2000 |
|---|---|---|
| Assets* | **$ 36,670** | $ 40,822 |
| Debt** | **25,545** | 27,514 |
| Equity | **3,756** | 4,142 |
| Debt/Equity | **6.8x** | 6.6x |

* *Global Financing assets include cash, financing receivables (see note f, "Financing Receivables," on page 83), intercompany amounts, rental machine fixed assets and other assets.*

** *The total interest expense related to Global Financing debt above is presented in the Global Financing column on page 67.*

As discussed above, the Global Financing segment is a financial services business and is, therefore, more debt dependent than the company's other businesses. At December 31, 2001, more than 94 percent of the company's total debt was used to fund this business, and supported almost 42 percent of the company's total assets. In 2001, Global Financing debt to equity ratio increased to 6.8x, which is within management's acceptable target range.

The company's Global Financing business provides funding predominantly for the company's external customers but also provides financing for the company including the funding to support the Global Services business' long-term customer services contracts. All of these financing arrangements are at arm's-length rates based upon market conditions. The company manages and measures the Global Financing business as if it approximates a standalone business that includes both the external financing and related company financing described above. Accordingly, the Global Financing debt discussed above and Cost of Global Financing discussed below support both of these Global Financing activities.

All intercompany transactions are eliminated in the Consolidated Statement of Earnings and therefore, the financing revenue associated with the financing provided by Global Financing to the company is eliminated in consolidation. Accordingly, the interest expense from the company's external

borrowings that supports such financing revenue is classified in the Interest expense caption of the Consolidated Statement of Earnings as opposed to the Cost of Global Financing caption.

The reconciliation of the segment amounts to the Consolidated Statement of Earnings amounts for the years 2001, 2000 and 1999 is as follows:

| (dollars in millions) | Global Financing | Non-Global Financing | Consolidated Eliminations | Consolidated Results |
|---|---|---|---|---|
| **2001** | | | | |
| **Cost of Global Financing** | **$ 1,140** | **$ —** | **$ (176)** | **$ 964** |
| **Interest expense** | **—** | **62** | **176** | **238** |
| 2000* | | | | |
| Cost of Global Financing | $ 1,319 | $ — | $ (237) | $ 1,082 |
| Interest expense | — | 110 | 237 | 347 |
| 1999* | | | | |
| Cost of Global Financing | $ 1,232 | $ — | $ (132) | $ 1,100 |
| Interest expense | — | 220 | 132 | 352 |

** Reclassified to conform with 2001 presentation.*

*Non-Global Financing*

| (dollars in millions) AT DECEMBER 31: | 2001 | 2000 |
|---|---|---|
| Debt* | **$ 1,606** | $ 1,062 |
| Debt/Capitalization | **7.5%** | 6.1% |

** Non-global financing debt is the company's total external debt less the Global Financing debt described in the Global Financing table on page 66.*

The company's non-global financing businesses generate significant cash from ongoing operations and therefore generally do not require a significant amount of debt. Cash flows from operations are these businesses' primary source of funds for future investments.

The increase in the non-global financing debt is consistent with the company's cash and debt arrangement strategies and should be considered in conjunction with the increase in cash in the same period.

A review of the company's debt and equity should also consider other contractual obligations and commitments, which are disclosed elsewhere in the financial section. These amounts are summarized in one table below to facilitate a reader's review.

*Contractual Obligations*

| (dollars in millions) | Balance as of Dec. 31, 2001 | Payments Due In 2002 | 2003-04 | 2005-06 | After 2006 |
|---|---|---|---|---|---|
| Long-term debt | **$ 20,429** | $ 5,186 | $ 4,607 | $ 4,165 | $ 6,471 |
| Lease commitments | **5,734** | 1,378 | 1,927 | 1,062 | 1,367 |

*Commitments*

| (dollars in millions) | Balance as of Dec. 31, 2001 | Amounts Expiring In 2002 | 2003-04 | 2005-06 | After 2006 |
|---|---|---|---|---|---|
| Unused lines of credit | **$ 4,088** | $ 3,127 | $ 395 | $ 259 | $ 307 |
| Other commitments | **269** | 140 | 129 | — | — |
| Financial guarantees | **218** | 87 | 37 | 8 | 86 |

Unused lines of credit represent amounts available to the company's dealers to support their working capital needs and available lines of credit relating to the company's syndicated loan activities. Other commitments primarily include the company's commitments to provide financing to customers for their future purchases of the company's products. Financial guarantees represent guarantees for certain loans and financial commitments the company had made as of December 31, 2001.

*Stockholders' Equity*

The company's total consolidated Stockholders' equity increased $2,990 million to $23,614 million at December 31, 2001, primarily due to the increase in Retained earnings, partially offset by the company's ongoing stock repurchase program and Accumulated gains and losses not affecting retained earnings. (See note m, "Stockholders' Equity Activity," on pages 88 and 89).

### CURRENCY RATE FLUCTUATIONS

Changes in the relative values of non-U.S. currencies to the U.S. dollar affect the company's results. At December 31, 2001, currency changes resulted in assets and liabilities denominated in local currencies being translated into fewer dollars than at year-end 2000. The currency rate changes had an unfavorable effect on revenue growth of approximately 4 percentage points in 2001, approximately 3 percentage points in 2000 and minimal effect in 1999.

For non-U.S. subsidiaries and branches that operate in U.S. dollars or whose economic environment is highly inflationary, translation adjustments are reflected in results of operations, as required by SFAS No. 52, "Foreign Currency Translation." Generally, the company manages currency risk in these entities by linking prices and contracts to U.S. dollars and entering into foreign currency hedge contracts.

The company uses a variety of financial hedging instruments to limit specific currency risks related to financing transactions and other foreign currency-based transactions. Further discussion of currency and hedging appears in note k, "Derivatives and Hedging Transactions," on pages 85 through 87.

On January 1, 2001, the company adopted SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." See "Standards Implemented," on pages 79 and 80 for additional information regarding SFAS No. 133.

### MARKET RISK

In the normal course of business, the financial position of the company routinely is subjected to a variety of risks. In addition to the market risk associated with interest rate and currency movements on outstanding debt and non-U.S. dollar denominated assets and liabilities, other examples of risk include collectibility of accounts receivable and recoverability of residual values on leased assets.

The company regularly assesses these risks and has established policies and business practices to protect against the adverse effects of these and other potential exposures. As a result, the company does not anticipate any material losses from these risks.

The company's debt in support of the Global Financing business and the geographic breadth of the company's operations contain an element of market risk from changes in interest and currency rates. The company manages this risk, in part, through the use of a variety of financial instruments including derivatives, as explained in note k, "Derivatives and Hedging Transactions," on pages 85 through 87.

To meet disclosure requirements, the company performs sensitivity analysis to determine the effects that market risk exposures may have on the fair values of the company's debt and other financial instruments.

The financial instruments that are included in the sensitivity analysis comprise all of the company's cash and cash equivalents, marketable securities, long-term non-lease receivables, investments, long-term and short-term debt and all derivative financial instruments. The company's portfolio of derivative financial instruments includes interest rate swaps, interest rate options, foreign exchange swaps, forward contracts and option contracts.

To perform the sensitivity analysis, the company assesses the risk of loss in fair values from the effect of hypothetical changes in interest rates and foreign currency exchange rates on market-sensitive instruments. The market values for interest and foreign currency exchange risk are computed based on the present value of future cash flows as affected by the changes in rates that are attributable to the market risk being measured. The discount rates used for the present value computations were selected based on market interest and foreign currency exchange rates in effect at December 31, 2001 and 2000, respectively. The differences in this comparison are the hypothetical gains or losses associated with each type of risk.

Information provided by the sensitivity analysis does not necessarily represent the actual changes in fair value that the company would incur under normal market conditions because, due to practical limitations, all variables other than the specific market risk factor are held constant. In addition, the results of the model are constrained by the fact that certain items are specifically excluded from the analysis, while the financial instruments relating to the financing or hedging of those items are included by definition. Excluded items include leased assets, forecasted foreign currency cash flows, and the company's net investment in foreign operations. As a consequence, reported changes in the values of some of the financial instruments affecting the results of the sensitivity analysis are not matched with the offsetting changes in the values of the items that those instruments are designed to finance or hedge.

The results of the sensitivity analysis at December 31, 2001, and December 31, 2000, are as follows:

*Interest Rate Risk*

At December 31, 2001, a 10 percent decrease in the levels of interest rates with all other variables held constant would result in a decrease in the fair market value of the company's financial instruments of $177 million as compared with a decrease of $99 million at December 31, 2000. A 10 percent increase in the levels of interest rates with all other variables held constant would result in an increase in the fair value of the company's financial instruments of $151 million as compared to $83 million at December 31, 2000. Changes in the relative sensitivity of the fair value of the company's financial

instrument portfolio for these theoretical changes in the level of interest rates are primarily driven by changes in the company's debt maturity, interest rate profile and amount. In 2001 versus 2000, the reported increase in interest rate sensitivity is primarily due to reductions in the company's "receive fixed/pay floating" interest rate swap portfolio that had been utilized in 2000 to more closely match the maturity profile of the company's fixed-rate debt.

*Foreign Currency Exchange Rate Risk*

At December 31, 2001, a 10 percent weaker U.S. dollar against foreign currencies with all other variables held constant would result in a decrease in the fair value of the company's financial instruments of $1,401 million as compared with a decrease of $1,352 million at December 31, 2000. Conversely, a 10 percent stronger U.S. dollar against foreign currencies with all other variables held constant would result in an increase in the fair value of the company's financial instruments of $1,440 million compared to $1,435 million at December 31, 2000.

FINANCING RISKS

Financing is an integral part of the company's total worldwide offerings. Inherent in financing are certain risks, including credit, interest rate, currency and residual value. The company manages credit risk through comprehensive credit evaluations and pricing practices. To manage the risks associated with an uncertain interest rate environment, the company pursues a funding strategy of substantially matching the interest rate profile of its debt with the interest rate profile of its assets. Currency risks are managed by denominating liabilities in the same currency as the assets.

Residual value risk is managed by developing projections of future equipment values at lease inception, reevaluating these projections quarterly, and effectively deploying remarketing capabilities to recover residual values and potentially earn a profit. The following table presents the recorded amount of unguaranteed residual values for sales-type and operating leases at December 31, 1999, 2000 and 2001. In addition, the table below presents the run-out of the unguaranteed residual value over the remaining lives of these leases at December 31, 2001.

| | Total | | | Run-Out of 2001 Balance | | | |
|---|---|---|---|---|---|---|---|
| (dollars in millions) | 1999* | 2000* | 2001 | 2002 | 2003 | 2004 | 2005 and beyond |
| Sales-type leases | $ 771 | $ 785 | $ 791 | $ 236 | $ 273 | $ 220 | $ 62 |
| Operating leases | 609 | 396 | 334 | 172 | 95 | 44 | 23 |
| Total residual value | $ 1,380 | $ 1,181 | $ 1,125 | $ 408 | $ 368 | $ 264 | $ 85 |

** Restated to include residual value associated with non-information technology (I/T) equipment. (Amounts were included in the narrative in prior years.)*

## Accounting Estimates

Accounting under generally accepted accounting principles requires the use of estimates. The company's note a, "Significant Accounting Policies," starting on page 75 describes the important estimates used by the company.

## Employees and Related Workforce

| | | | | Percentage Changes | |
|---|---|---|---|---|---|
| | **2001** | 2000 | 1999 | 2001-00 | 2000-99 |
| IBM/wholly owned subsidiaries | **319,876** | 316,303 | 307,401 | 1.1 | 2.9 |
| Less-than-wholly owned subsidiaries | **25,403** | 21,886 | 17,176 | 16.1 | 27.4 |
| Complementary | **21,300** | 25,500 | 29,800 | (16.5) | (14.4) |

Employees at IBM and its wholly owned subsidiaries in 2001 increased 3,573 from last year. Although the rate of growth of the company's workforce slowed in 2001, primarily due to workforce rebalancing initiatives, the company continued to hire at a strong pace. Global Services, for example, hired nearly 14,000 people in 2001. Acquisitions, particularly the Informix database business, added to the 2001 workforce as well.

In less than wholly owned subsidiaries, the number of employees increased from last year, particularly in Europe and China. This growth reflects a new subsidiary in Europe related to a major services venture with Fiat SpA, and growth in China to support a rapidly expanding I/T infrastructure.

The company's complementary workforce is an approximation of equivalent full-time employees hired under temporary, part-time and limited-term employment arrangements to meet specific business needs in a flexible and cost-effective manner.

# Consolidated Statement of Earnings

**INTERNATIONAL BUSINESS MACHINES CORPORATION**
*and Subsidiary Companies*

(dollars in millions except per share amounts)

| FOR THE YEAR ENDED DECEMBER 31: | Notes | 2001 | 2000* | 1999* |
|---|---|---|---|---|
| **REVENUE:** | | | | |
| Global Services | | **$ 34,956** | $ 33,152 | $ 32,172 |
| Hardware | | **33,392** | 37,777 | 37,888 |
| Software | | **12,939** | 12,598 | 12,662 |
| Global Financing | | **3,426** | 3,465 | 3,137 |
| Enterprise Investments/Other | | **1,153** | 1,404 | 1,689 |
| **TOTAL REVENUE** | | **85,866** | 88,396 | 87,548 |
| **COST:** | | | | |
| Global Services | | **25,355** | 24,309 | 23,304 |
| Hardware | | **24,137** | 27,038 | 27,591 |
| Software | | **2,265** | 2,283 | 2,240 |
| Global Financing | j | **1,693** | 1,965 | 1,821 |
| Enterprise Investments/Other | | **634** | 747 | 1,038 |
| **TOTAL COST** | | **54,084** | 56,342 | 55,994 |
| **GROSS PROFIT** | | **31,782** | 32,054 | 31,554 |
| **EXPENSE AND OTHER INCOME:** | | | | |
| Selling, general and administrative | p | **17,197** | 17,535 | 16,294 |
| Research, development and engineering | p | **5,290** | 5,374 | 5,505 |
| Intellectual property and custom development income | p | **(1,535)** | (1,728) | (1,506) |
| Other (income) and expense | p | **(361)** | (1,008) | (848) |
| Interest expense | j & k | **238** | 347 | 352 |
| **TOTAL EXPENSE AND OTHER INCOME** | | **20,829** | 20,520 | 19,797 |
| **INCOME BEFORE INCOME TAXES** | | **10,953** | 11,534 | 11,757 |
| Provision for income taxes | o | **3,230** | 3,441 | 4,045 |
| **NET INCOME** | | **7,723** | 8,093 | 7,712 |
| Preferred stock dividends | | **10** | 20 | 20 |
| **NET INCOME APPLICABLE TO COMMON STOCKHOLDERS** | | **$ 7,713** | $ 8,073 | $ 7,692 |
| **EARNINGS PER SHARE OF COMMON STOCK:** | | | | |
| **ASSUMING DILUTION** | r | **$ 4.35** | $ 4.44 | $ 4.12 |
| **BASIC** | r | **$ 4.45** | $ 4.58 | $ 4.25 |

**AVERAGE NUMBER OF COMMON SHARES OUTSTANDING:**

**ASSUMING DILUTION:** 2001—1,771,230,599; 2000—1,812,118,422; 1999—1,871,073,912

**BASIC:** 2001—1,733,348,422; 2000—1,763,037,049; 1999—1,808,538,346

** Reclassified to conform with 2001 presentation.*

*The accompanying notes on pages 75 through 105 are an integral part of the financial statements.*

# Consolidated Statement of Financial Position

INTERNATIONAL BUSINESS MACHINES CORPORATION
*and Subsidiary Companies*

(dollars in millions except per share amounts)

| AT DECEMBER 31: | Notes | 2001 | 2000 |
|---|---|---|---|
| **ASSETS** | | | |
| Current assets: | | | |
| Cash and cash equivalents | | **$ 6,330** | $ 3,563 |
| Marketable securities | d | **63** | 159 |
| Notes and accounts receivable—trade, net of allowances | | **9,101** | 10,447 |
| Short-term financing receivables | f | **16,656** | 18,705 |
| Other accounts receivable | | **1,261** | 1,574 |
| Inventories | e | **4,304** | 4,765 |
| Deferred taxes | o | **2,402** | 2,701 |
| Prepaid expenses and other current assets | | **2,344** | 1,966 |
| Total current assets | | **42,461** | 43,880 |
| Plant, rental machines and other property | g | **38,375** | 38,455 |
| Less: Accumulated depreciation | | **21,871** | 21,741 |
| Plant, rental machines and other property—net | | **16,504** | 16,714 |
| Long-term financing receivables | f | **12,246** | 13,308 |
| Investments and sundry assets | h | **17,102** | 14,447 |
| **TOTAL ASSETS** | | **$ 88,313** | $ 88,349 |
| **LIABILITIES AND STOCKHOLDERS' EQUITY** | | | |
| Current liabilities: | | | |
| Taxes | o | **$ 4,644** | $ 4,827 |
| Short-term debt | j & k | **11,188** | 10,205 |
| Accounts payable | | **7,047** | 8,192 |
| Compensation and benefits | | **3,796** | 3,801 |
| Deferred income | | **4,223** | 4,516 |
| Other accrued expenses and liabilities | | **4,221** | 4,865 |
| Total current liabilities | | **35,119** | 36,406 |
| Long-term debt | j & k | **15,963** | 18,371 |
| Other liabilities | l | **13,617** | 12,948 |
| **TOTAL LIABILITIES** | | **64,699** | 67,725 |
| Contingencies | n | | |
| Stockholders' equity: | m | | |
| Preferred stock, par value $.01 per share | | **—** | 247 |
| Shares authorized: 150,000,000 | | | |
| Shares issued and outstanding (2000—2,546,011) | | | |
| Common stock, par value $.20 per share | | **14,248** | 12,400 |
| Shares authorized: 4,687,500,000 | | | |
| Shares issued (2001—1,913,513,218; 2000—1,893,940,595) | | | |
| Retained earnings | | **30,142** | 23,784 |
| Treasury stock, at cost (shares: 2001—190,319,489; 2000—131,041,411) | | **(20,114)** | (13,800) |
| Employee benefits trust (shares: 2000—20,000,000) | | **—** | (1,712) |
| Accumulated gains and losses not affecting retained earnings | | **(662)** | (295) |
| **TOTAL STOCKHOLDERS' EQUITY** | | **23,614** | 20,624 |
| **TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY** | | **$ 88,313** | $ 88,349 |

*The accompanying notes on pages 75 through 105 are an integral part of the financial statements.*

# Consolidated Statement of Stockholders' Equity

**INTERNATIONAL BUSINESS MACHINES CORPORATION**

*and Subsidiary Companies*

| (dollars in millions) | Preferred Stock | Common Stock | Retained Earnings | Treasury Stock | Employee Benefits Trust | Accumulated Gains and (Losses) Not Affecting Retained Earnings | Total |
|---|---|---|---|---|---|---|---|
| 1999* | | | | | | | |
| Stockholders' equity, January 1, 1999 | $ 247 | $ 10,121 | $ 10,141 | $ (133) | $ (1,854) | $ 911 | $ 19,433 |
| Net income plus gains and losses not affecting retained earnings: | | | | | | | |
| Net income | | | 7,712 | | | | $ 7,712 |
| Gains and losses not affecting retained earnings (net of tax): | | | | | | | |
| Foreign currency translation adjustments (net of tax expense of $180) | | | | | | (549) | (549) |
| Minimum pension liability adjustment | | | | | | 3 | 3 |
| Net unrealized gains on marketable securities (net of tax expense of $456) | | | | | | 796 | 796 |
| Total gains and losses not affecting retained earnings | | | | | | | 250 |
| Subtotal: Net income plus gains and losses not affecting retained earnings | | | | | | | $ 7,962 |
| Cash dividends declared—common stock | | | (859) | | | | (859) |
| Cash dividends declared—preferred stock | | | (20) | | | | (20) |
| Common stock issued under employee plans (22,927,141 shares) | | 741 | (1) | | | | 740 |
| Purchases (6,418,975 shares) and sales (6,606,223 shares) of treasury stock under employee plans—net | | | (95) | (50) | | | (145) |
| Other treasury shares purchased, not retired (70,711,971 shares) | | | | (7,192) | | | (7,192) |
| Fair value adjustment of employee benefits trust | | 318 | | | (308) | | 10 |
| Increase due to shares issued by subsidiary | | 37 | | | | | 37 |
| Tax effect—stock transactions | | 545 | | | | | 545 |
| Stockholders' equity, December 31, 1999 | $ 247 | $ 11,762 | $ 16,878 | $ (7,375) | $ (2,162) | $ 1,161 | $ 20,511 |
| 2000* | | | | | | | |
| Net income plus gains and losses not affecting retained earnings: | | | | | | | |
| Net income | | | 8,093 | | | | $ 8,093 |
| Gains and losses not affecting retained earnings (net of tax): | | | | | | | |
| Foreign currency translation adjustments (net of tax expense of $289) | | | | | | (538) | (538) |
| Minimum pension liability adjustment | | | | | | 7 | 7 |
| Net unrealized losses on marketable securities (net of tax benefit of $506) | | | | | | (925) | (925) |
| Total gains and losses not affecting retained earnings | | | | | | | (1,456) |
| Subtotal: Net income plus gains and losses not affecting retained earnings | | | | | | | $ 6,637 |
| Cash dividends declared—common stock | | | (909) | | | | (909) |
| Cash dividends declared—preferred stock | | | (20) | | | | (20) |
| Common stock issued under employee plans (17,275,350 shares) | | 615 | 1 | | | | 616 |
| Purchases (8,799,382 shares) and sales (9,074,212 shares) of treasury stock under employee plans—net | | | (259) | 6 | | | (253) |
| Other treasury shares purchased, not retired (58,867,226 shares) | | | | (6,431) | | | (6,431) |
| Fair value adjustment of employee benefits trust | | (439) | | | 450 | | 11 |
| Increase due to shares remaining to be issued in acquisition | | 40 | | | | | 40 |
| Tax effect—stock transactions | | 422 | | | | | 422 |
| Stockholders' equity, December 31, 2000 | $ 247 | $ 12,400 | $ 23,784 | $ (13,800) | $ (1,712) | $ (295) | $ 20,624 |

# Consolidated Statement of Stockholders' Equity

**INTERNATIONAL BUSINESS MACHINES CORPORATION**

*and Subsidiary Companies*

| (dollars in millions) | Preferred Stock | Common Stock | Retained Earnings | Treasury Stock | Employee Benefits Trust | Accumulated Gains and (Losses) Not Affecting Retained Earnings | Total |
|---|---|---|---|---|---|---|---|
| 2001 | | | | | | | |
| Stockholders' equity, December 31, 2000 | $ 247 | $ 12,400 | $ 23,784 | $ (13,800) | $ (1,712) | $ (295) | $ 20,624 |
| Net income plus gains and losses not affecting retained earnings: | | | | | | | |
| Net income | | | 7,723 | | | | $ 7,723 |
| Gains and losses not affecting retained earnings (net of tax): | | | | | | | |
| Cumulative effect of adoption of SFAS No. 133 on Jan. 1 (net of tax expense of $120) | | | | | | 219 | 219 |
| Net unrealized gains on SFAS No. 133 cash flow hedge derivatives during 2001 (net of tax expense of $44) | | | | | | 77 | 77 |
| Foreign currency translation adjustments (net of tax expense of $323) | | | | | | (539) | (539) |
| Minimum pension liability adjustment | | | | | | (216) | (216) |
| Net unrealized gains on marketable securities (net of tax expense of $58) | | | | | | 92 | 92 |
| Total gains and losses not affecting retained earnings | | | | | | | (367) |
| Subtotal: Net income plus gains and losses not affecting retained earnings | | | | | | | $ 7,356 |
| Cash dividends declared—common stock | | | (956) | | | | (956) |
| Cash dividends declared—preferred stock | | | (10) | | | | (10) |
| Preferred stock purchased and retired (10,184,043 shares) | (247) | | (7) | | | | (254) |
| Common stock issued under employee plans (19,572,623 shares) | | 774 | (1) | | | | 773 |
| Purchases (2,237,935 shares) and sales (11,801,053 shares) of treasury stock under employee plans—net | | 32 | (391) | 1,032 | | | 673 |
| Other treasury shares purchased, not retired (48,841,196 shares) | | | | (5,091) | | | (5,091) |
| Dissolution of employee benefits trust (20,000,000 shares) | | 546 | | (2,255) | 1,712 | | 3 |
| Decrease in shares remaining to be issued in acquisition | | (6) | | | | | (6) |
| Tax effect—stock transactions | | 502 | | | | | 502 |
| **Stockholders' equity, December 31, 2001** | **$ —** | **$ 14,248** | **$ 30,142** | **$ (20,114)** | **$ —** | **$ (662)** | **$ 23,614** |

** Reclassified to conform with 2001 presentation.*

*The accompanying notes on pages 75 through 105 are an integral part of the financial statements.*

# Consolidated Statement of Cash Flows

**INTERNATIONAL BUSINESS MACHINES CORPORATION**
*and Subsidiary Companies*

(dollars in millions)

| FOR THE YEAR ENDED DECEMBER 31: | 2001 | 2000* | 1999* |
|---|---|---|---|
| **CASH FLOW FROM OPERATING ACTIVITIES:** | | | |
| Net income | **$ 7,723** | $ 8,093 | $ 7,712 |
| Adjustments to reconcile net income to net cash provided from operating activities: | | | |
| Depreciation | **4,195** | 4,513 | 6,159 |
| Amortization of software | **625** | 482 | 426 |
| Deferred income taxes | **658** | 29 | (713) |
| Gain on asset sales | **(317)** | (792) | (4,791) |
| Write-down of impaired investment assets | **405** | — | — |
| Other changes that provided/(used) cash: | | | |
| Receivables | **3,284** | (4,720) | (1,677) |
| Inventories | **337** | (55) | 301 |
| Other assets | **(545)** | (643) | (130) |
| Accounts payable | **(969)** | 2,245 | (3) |
| Other liabilities | **(1,131)** | 122 | 2,827 |
| **NET CASH PROVIDED FROM OPERATING ACTIVITIES** | **14,265** | 9,274 | 10,111 |
| **CASH FLOW FROM INVESTING ACTIVITIES:** | | | |
| Payments for plant, rental machines and other property | **(5,660)** | (5,616) | (5,959) |
| Proceeds from disposition of plant, rental machines and other property | **1,165** | 1,619 | 1,207 |
| Investment in software | **(655)** | (565) | (464) |
| Purchases of marketable securities and other investments | **(778)** | (750) | (2,628) |
| Proceeds from marketable securities and other investments | **738** | 1,393 | 2,616 |
| Proceeds from sale of the Global Network | **—** | — | 4,880 |
| Acquisitions | **(916)** | (329) | (1,321) |
| **NET CASH USED IN INVESTING ACTIVITIES** | **(6,106)** | (4,248) | (1,669) |
| **CASH FLOW FROM FINANCING ACTIVITIES:** | | | |
| Proceeds from new debt | **4,535** | 9,604 | 6,133 |
| Short-term borrowings/(repayments) less than 90 days—net | **2,926** | (1,400) | 276 |
| Payments to settle debt | **(7,898)** | (7,561) | (7,510) |
| Preferred stock transactions—net | **(254)** | — | — |
| Common stock transactions—net | **(3,652)** | (6,073) | (6,645) |
| Cash dividends paid | **(966)** | (929) | (879) |
| **NET CASH USED IN FINANCING ACTIVITIES** | **(5,309)** | (6,359) | (8,625) |
| Effect of exchange rate changes on cash and cash equivalents | **(83)** | (147) | (149) |
| Net change in cash and cash equivalents | **2,767** | (1,480) | (332) |
| Cash and cash equivalents at January 1 | **3,563** | 5,043 | 5,375 |
| **CASH AND CASH EQUIVALENTS AT DECEMBER 31** | **$ 6,330** | $ 3,563 | $ 5,043 |
| **SUPPLEMENTAL DATA:** | | | |
| Cash paid during the year for: | | | |
| Income taxes | **$ 2,279** | $ 2,697 | $ 1,904 |
| Interest | **$ 1,247** | $ 1,447 | $ 1,574 |

** Reclassified to conform with 2001 presentation.*

*The accompanying notes on pages 75 through 105 are an integral part of the financial statements.*

## a Significant Accounting Policies

### PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of International Business Machines Corporation and its controlled subsidiary companies, which in general are majority owned. Investments in business entities in which the company does not have control, but has the ability to exercise significant influence over operating and financial policies (generally 20-50 percent ownership), are accounted for by the equity method. Other investments are accounted for by the cost method. The accounting policy for other investments in securities is described on page 78 within "Marketable Securities."

### USE OF ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts that are reported in the consolidated financial statements and accompanying disclosures. Although these estimates are based on management's best knowledge of current events and actions that the company may undertake in the future, actual results may be different from the estimates.

### REVENUE

The company recognizes revenue when it is realized or realizable and earned. The company considers revenue realized or realizable and earned when it has persuasive evidence of an arrangement, the product has been shipped or the services have been provided to the customer, the sales price is fixed or determinable and collectibility is reasonably assured. The company reduces revenue for estimated customer returns and other allowances. In addition to the aforementioned general policy, the following are the specific revenue recognition policies for each major category of revenue and for multiple element arrangements.

*Services*

The terms of service contracts generally range from less than one year up to ten years. Revenue from time and material service contracts is recognized as the services are provided. Revenue from Strategic Outsourcing Service contracts reflects the extent of actual services delivered in the period in accordance with the terms of the contract. Revenue from Business Innovation Services (BIS) contracts requiring the delivery of unique products and/or services is recognized using the percentage-of-completion (POC) method of accounting. In using the POC method, the company records revenue by reference to the costs incurred to date and the estimated costs remaining to fulfill the contracts. Provisions for losses are recognized during the period in which the loss first becomes apparent. Revenue from maintenance is recognized over the contractual period or as the services are performed.

In some of the company's services contracts, the company bills the customer prior to performing the service. This situation gives rise to deferred income of $2.4 billion and $2.5 billion at December 31, 2001 and 2000, respectively, included in Deferred income on the Consolidated Statement of Financial Position. In other services contracts, the company performs the service prior to billing the customer. This situation gives rise to unbilled accounts receivable of $1.3 billion and $1.2 billion at December 31, 2001 and 2000, respectively, included in Notes and accounts receivable—trade on the Consolidated Statement of Financial Position. In these circumstances, billings usually occur shortly after the company performs the services and can range up to six months later. Unbilled receivables are expected to be billed and collected within nine months.

*Hardware*

Revenue from hardware sales or sales-type leases is recognized when the product is shipped to the customer and there are no unfulfilled company obligations that affect the customer's final acceptance of the arrangement. Any cost of these obligations is accrued when the corresponding revenue is recognized. Revenue from rentals and operating leases is recognized monthly as the fees accrue.

*Software*

Revenue from one-time charge licensed software is recognized at the inception of the license term. Revenue from monthly software licenses is recognized ratably over the license term. Revenue from maintenance, unspecified upgrades and technical support is recognized over the period such items are delivered. See "Multiple Element Arrangements" below for further information.

*Financing*

Revenue from financing is recognized at level rates of return over the term of the lease or receivable.

*Multiple Element Arrangements*

The company enters into transactions that include multiple element arrangements, which may include any combination of hardware, services or software. These arrangements and stand-alone software arrangements may also involve any combination of software maintenance, software technical support or unspecified software upgrades. When some elements are

delivered prior to others in an arrangement, revenue is deferred until the delivery of the last element unless there is all of the following:

• Vendor-specific objective evidence of fair value (VSOE) of the undelivered elements.

• The functionality of the delivered elements is not dependent on the undelivered elements.

• Delivery of the delivered element represents the culmination of the earnings process.

VSOE is the price charged by the company to an external customer for the same element when such element is sold separately.

EXPENSE AND OTHER INCOME

*Selling, General and Administrative*

Selling, general and administrative (SG&A) expense is charged to income as incurred. Expenses of promoting and selling products are classified as selling expense and include such items as advertising, sales commissions and travel. General and administrative expense includes such items as officers' salaries, office supplies, non income taxes, insurance and office rental. In addition, general and administrative expense includes other operating items such as provision for doubtful accounts, workforce accruals for contractually obligated payments to employees terminated in the ongoing course of business, amortization of intangible assets and environmental remediation costs. The cost of internal environmental protection programs that are preventive in nature are expensed as incurred. The company accrues for all known environmental liabilities when it becomes probable that the company will incur cleanup costs and those costs can be reasonably estimated. In addition, estimated environmental costs that are associated with post-closure activities (for example, the removal and restoration of chemical storage facilities and monitoring) are accrued when the decision is made to close a facility.

*Research, Development and Engineering*

Research, development and engineering costs are expensed as incurred.

*Intellectual Property and Custom Development Income*

As part of the company's ongoing business model, the company licenses and sells the rights to certain of its intellectual property including internally developed patents, trade secrets and technological know-how. Certain transfers of intellectual property to third parties are licensing/royalty fee based and other transfers are transaction-based sales and other transfers. Licensing/royalty-based fees involve transfers in which the company earns the income over time or the amount of income is not fixed and determinable until the licensee sells future related products (e.g., variable royalty based upon licensee's revenue). Sales and other transfers typically include transfers of intellectual property whereby the company has fulfilled its obligations and the fee received is fixed and determinable. The company also earns income from certain custom development projects for specific customers. The company records the income from these projects when the fee is earned, is not refundable, and is not dependent upon the success of the project.

*Other Income and Expense*

Other income and expense includes interest income (other than from the company's Global Financing business transactions), gains and losses from securities and other investments, realized gains and losses from real estate activity, and foreign currency transaction gains and losses.

*Depreciation and Amortization*

Plant, rental machines and other property are carried at cost and depreciated over their estimated useful lives using the straight-line method.

The estimated useful lives of depreciable properties generally are as follows: buildings, 50 years; building equipment, 20 years; land improvements, 20 years; plant, laboratory and office equipment, 2 to 15 years; and computer equipment, 1.5 to 5 years.

Capitalized software costs incurred or acquired after technological feasibility are amortized over periods up to 3 years. See "Software Costs" section on page 79 for additional information. Other intangible assets are amortized for periods up to 5 years. See "New Standards to Be Implemented" on pages 80 and 81 for additional information on goodwill.

*Retirement-Related Benefits*

The company accounts for its defined benefit pension plans and its nonpension postretirement benefit plans using actuarial models required by Statement of Financial Accounting Standards (SFAS) No. 87, "Employers' Accounting for Pensions," and SFAS No. 106, "Employers' Accounting for Postretirement Benefits Other Than Pensions," respectively. These models use an attribution approach that generally spreads individual events over the service lives of the employees in the plan. Examples of "events" are plan amendments and changes in actuarial assumptions such as discount rate, rate of compensation increases and mortality. See the next paragraph for information on the expected long-term rate of return on plan assets. The principle underlying the required attribution approach is that employees render service over their service lives on a relatively smooth basis and therefore, the income statement effects of pensions or nonpension postretirement benefit plans are earned in, and should follow, the same pattern.

One of the principal components of the net periodic pension calculation is the expected long-term rate of return on plan assets. The required use of expected long-term rate of return on plan assets may result in recognized pension income that is greater or less than the actual returns of those plan assets in any given year. Over time, however, the expected long-term returns are designed to approximate the actual long-term returns and therefore result in a pattern of income and expense recognition that more closely matches the pattern of the services provided by the employees. Differences between actual and expected returns are recognized in the net periodic pension calculation over five years.

The company uses long-term historical actual return information, the mix of investments that comprise plan assets, and future estimates of long-term investment returns by reference to external sources to develop its expected return on plan assets.

The discount rate assumptions used for pension and nonpension postretirement benefit plan accounting reflects the rates available on high-quality fixed-income debt instruments on December 31 of each year. The rate of compensation increase is another significant assumption used in the actuarial model for pension accounting and is determined by the company based upon its long-term plans for such increases. For retiree medical plan accounting, the company reviews external data and its own historical trends for health care costs to determine the health care cost trend rates.

### INCOME TAXES

Income tax expense is based on reported income before income taxes. Deferred income taxes reflect the effect of temporary differences between asset and liability amounts that are recognized for financial reporting purposes and the amounts that are recognized for income tax purposes. These deferred taxes are measured by applying currently enacted tax laws. Valuation allowances are recognized to reduce the deferred tax assets to an amount that is more likely than not to be realized. In assessing the likelihood of realization, management considers estimates of future taxable income.

### TRANSLATION OF NON-U.S. CURRENCY AMOUNTS

Assets and liabilities of non-U.S. subsidiaries that operate in a local currency environment are translated to U.S. dollars at year-end exchange rates. Income and expense items are translated at weighted-average rates of exchange prevailing during the year. Translation adjustments are recorded in Accumulated gains and losses not affecting retained earnings within Stockholders' equity.

Inventories, Plant, rental machines and other property—net, and other non-monetary assets and liabilities of non-U.S. subsidiaries and branches that operate in U.S. dollars, or whose economic environment is highly inflationary, are translated at approximate exchange rates prevailing when the company acquired the assets or liabilities. All other assets and liabilities are translated at year-end exchange rates. Cost of sales and depreciation are translated at historical exchange rates. All other income and expense items are translated at the weighted-average rates of exchange prevailing during the year. Gains and losses that result from translation are included in net income.

### DERIVATIVES

In the normal course of business, the company uses a variety of derivative financial instruments to manage currency exchange rate and interest rate risk. The company does not use derivatives for trading or speculative purposes, nor is it a party to leveraged derivatives.

All derivatives are recognized on the balance sheet at fair value and are reported in Prepaid expenses and other current assets, Investments and sundry assets, Other accrued expenses and liabilities or Other liabilities in the Consolidated Statement of Financial Position. Classification of each derivative as current or non current is based upon whether the maturity of each instrument is less than or greater than 12 months. To qualify for hedge accounting in accordance with SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities," the company requires that the instruments are effective in reducing the risk exposure that they are designated to hedge. For instruments that are associated with the hedge of an anticipated transaction, hedge effectiveness criteria also require that it be probable that the underlying transaction will occur. Instruments that meet established accounting criteria are formally designated as hedges at the inception of the contract. These criteria demonstrate that the derivative is expected to be highly effective at offsetting changes in fair value of the underlying exposure both at inception of the hedging relationship and on an ongoing basis. The assessment for effectiveness is formally documented at hedge inception and reviewed at least quarterly throughout the designated hedge period.

The company applies hedge accounting in accordance with SFAS No. 133, whereby the company designates each derivative as a hedge of (1) the fair value of a recognized asset or liability or of an unrecognized firm commitment ("fair value" hedge); (2) the variability of anticipated cash flows of a forecasted transaction or the cash flows to be received or paid related to a recognized asset or liability ("cash flow" hedge); or (3) a hedge of a long-term investment ("net investment" hedge) in a foreign operation. From time to time, however, the company may enter into derivatives that economically hedge certain of its risks, even though hedge

accounting does not apply under SFAS No. 133 or is not applied by the company. In these cases, there generally exists a natural hedging relationship in which changes in fair value of the derivative, which are recognized currently in net income, act as an economic offset to changes in the fair value of the underlying hedged item(s).

Changes in the value of a derivative that is designated as a fair value hedge, along with offsetting changes in fair value of the underlying hedged exposure, are recorded in earnings each period. For hedges of interest rate risk, the fair value adjustments are recorded as adjustments to Interest expense and Cost of Financing in the Consolidated Statement of Earnings. For hedges of currency risk associated with recorded assets or liabilities, derivative fair value adjustments generally are recognized in Other income and expense in the Consolidated Statement of Earnings. Changes in the value of a derivative that is designated as a cash flow hedge are recorded in the Accumulated gains and losses not affecting retained earnings, a component of Stockholders' equity. When net income is affected by the variability of the underlying cash flow, the applicable amount of the gain or loss from the derivative that is deferred in Stockholders' equity is released to net income and reported in Interest expense, Cost, SG&A expense or Other income and expense in the Consolidated Statement of Earnings based on the nature of the underlying cash flow hedged. Effectiveness for net investment hedging derivatives is measured on a spot to spot basis. The effective portion of changes in the fair value of derivatives and other non derivative risk management instruments designated as net investment hedges are recorded as foreign currency translation adjustments in the Accumulated gains and losses not affecting retained earnings section of Stockholders' equity. Changes in the fair value of the portion of a net investment hedging derivative excluded from the effectiveness assessment are recorded in Interest expense.

When the underlying hedged item ceases to exist, all changes in the fair value of the instrument are included in net income each period until the instrument matures. When the underlying transaction ceases to exist, a hedged asset or liability is no longer adjusted for changes in its fair value. Derivatives that are not designated as hedges, as well as changes in the value of derivatives that do not offset the underlying hedged item throughout the designated hedge period (collectively, "ineffectiveness"), are recorded in net income each period and generally are reported in Other income and expense. Refer to note k, "Derivatives and Hedging Transactions," on pages 85 through 87 for a description of the major risk management programs and classes of financial instruments used by the company.

### FINANCIAL INSTRUMENTS

In determining fair value of its financial instruments, the company uses a variety of methods and assumptions that are based on market conditions and risks existing at each balance sheet date. For the majority of financial instruments including most derivatives, long-term investments and long-term debt, standard market conventions and techniques such as discounted cash flow analysis, option pricing models, replacement cost and termination cost are used to determine fair value. Dealer quotes are used for the remaining financial instruments. All methods of assessing fair value result in a general approximation of value, and such value may never actually be realized.

### CASH EQUIVALENTS

All highly liquid investments with a maturity of three months or less at date of purchase are carried at fair value and considered to be cash equivalents.

### MARKETABLE SECURITIES

Marketable securities included in Current assets represent securities with a maturity of less than one year. The company also has Marketable securities, including non equity method alliance investments, with a maturity of more than one year. These non current investments are included in Investments and sundry assets. The company's Marketable securities, including certain non equity method alliance investments, are considered available for sale and are reported at fair value with changes in unrealized gains and losses, net of applicable taxes, recorded in Accumulated gains and losses not affecting retained earnings within Stockholders' equity. Realized gains and losses are calculated based on the specific identification method. Other than temporary declines in market value from original cost are charged to Other income and expense in the period in which the loss occurs. In determining whether an other than temporary decline in the market value has occurred, the company considers the duration that and extent to which market value is below original cost. Realized gains and losses and other than temporary declines in market value from original cost are included in Other income and expense in the Consolidated Statement of Earnings. All other investment securities not described above or in the "Principles of Consolidation" on page 75, primarily non-publicly traded equity securities, are accounted for using the cost method.

### INVENTORIES

Raw materials, work in process and finished goods are stated at the lower of average cost or net realizable value.

#### CUSTOMER LOANS RECEIVABLE

Global Financing is one of many sources of funding from which customers can choose. Customer loans receivable, net of allowances, comprise almost entirely loans made by the company's Global Financing segment, primarily to finance the purchase of the company's services and software. Separate contractual relationships on these financing agreements are generally for terms ranging from one to three years requiring straight-line payments over the term. These agreements do not represent extended payment terms. Each financing contract is priced independently at competitive market rates. An allowance for loan losses is established with a corresponding charge to SG&A expense based upon management's historical collection experience, prevailing economic conditions, the present value of estimated future cash flows, the estimated value of underlying collateral, and specific situations that may affect a customer's ability to repay.

#### ESTIMATED RESIDUAL VALUES OF LEASE ASSETS

The recorded residual values of the company's lease assets are estimated at the inception of the lease to be the expected fair market value of the assets at the end of the lease term. On a quarterly basis, the company reassesses the realizable value of its lease residual values. In accordance with generally accepted accounting principles, anticipated increases in specific future residual values are not recognized before realization. Anticipated decreases in specific future residual values that are considered to be other than temporary are recognized immediately.

#### SOFTWARE COSTS

Costs that are related to the conceptual formulation and design of licensed programs are expensed as research and development. Also, for licensed programs, the company capitalizes costs that are incurred to produce the finished product after technological feasibility is established. The annual amortization of the capitalized amounts is performed using the straight-line method, and is applied over periods ranging up to three years. The company performs periodic reviews to ensure that unamortized program costs remain recoverable from future revenue. Costs to support or service licensed programs are expensed as the costs are incurred.

The company capitalizes certain costs that are incurred to purchase or to create and implement internal-use computer software, which include software coding, installation, testing and data conversion. Capitalized costs are amortized on a straight-line basis over two years.

#### COMMON STOCK

Common stock refers to the $.20 par value capital stock as designated in the company's Certificate of Incorporation. Treasury stock is accounted for using the cost method. When treasury stock is reissued, the value is computed and recorded using a weighted-average basis.

#### EARNINGS PER SHARE OF COMMON STOCK

Earnings per share of common stock—basic is computed by dividing Net income applicable to common stockholders by the weighted-average number of common shares outstanding for the period. Earnings per share of common stock—assuming dilution reflects the maximum potential dilution that could occur if securities or other contracts to issue common stock were exercised or converted into common stock and would then share in the net income of the company. See note r, "Earnings Per Share of Common Stock," on page 93 for additional information.

#### RECLASSIFICATIONS

Effective January 1, 2001, interest expense is presented in Cost of Global Financing in the Consolidated Statement of Earnings if the related external borrowings to support the Global Financing business were issued by either the company or its Global Financing units. In prior years, the Cost of Global Financing caption only included interest related to direct external borrowings of the Global Financing units. Prior periods were reclassified to conform with the current year presentation. This change was described and disclosed in the company's 2001 first quarter report on Form 10-Q.

The company also removed the impact of intellectual property income, gains and losses on sales and other than temporary declines in market value of certain investments, realized gains and losses on certain real estate activity and foreign currency transaction gains and losses from the SG&A caption on the Consolidated Statement of Earnings. Custom development income was also removed from the Research, development and engineering caption on the Consolidated Statement of Earnings. Intellectual property and custom development income are now recorded in a separate caption in the Consolidated Statement of Earnings. The other items listed above are now recorded as part of Other income and expense. Prior periods were reclassified to conform with the current year presentation.

## b Accounting Changes

#### STANDARDS IMPLEMENTED

The company implemented new accounting standards in 2001, 2000 and 1999. These standards did not have a material effect on the financial position or results of operations of the company.

On January 1, 2001, the company adopted SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities," as amended by SFAS No. 138, "Accounting for Certain Derivative Instruments and Certain Hedging Activities." SFAS No. 133, as amended, establishes accounting and reporting standards for derivative instruments. Specifically, SFAS No. 133 requires an entity to recognize all derivatives as either assets or liabilities in the Statement of Financial Position and to measure those instruments at fair value. Additionally, the fair value adjustments will affect either stockholders' equity or net income depending on whether the derivative instrument qualifies as a hedge for accounting purposes and, if so, the nature of the hedging activity. As of January 1, 2001, the adoption of the new standard resulted in a cumulative effect net-of-tax increase of $219 million to Accumulated gains and losses not affecting retained earnings in the Stockholders' equity section of the Consolidated Statement of Financial Position and a cumulative effect net-of-tax charge of $6 million included in Other income and expense in the Consolidated Statement of Earnings.

Effective January 1, 2001, the company adopted SFAS No. 140, "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities—a replacement of SFAS No. 125." This statement provides accounting and reporting standards for transfers and servicing of financial assets and extinguishments of liabilities and revises the accounting standards for securitizations and transfers of financial assets and collateral. The adoption did not have a material effect on the company's results of operations and financial position. The standard also requires new disclosures which were not applicable to the company.

Pursuant to the Securities and Exchange Commission's Staff Accounting Bulletin (SAB) No. 102, "Selected Loan Loss Allowance Methodology and Documentation Issues," the company has reviewed its policies related to methodologies for the determination of, and documentation in support of its allowance for loan losses and the provision for loan losses in its Global Financing segment. The company's methodology and documentation policies are consistent with the views expressed within SAB 102. See "Customer Loans Receivable," on page 79 for a description of the company's policies for customer loans receivable.

In 2000, the Financial Accounting Standards Board (FASB) issued Interpretation (FIN) No. 44, "Accounting for Certain Transactions Involving Stock Compensation, an interpretation of Accounting Principles Board Opinion No. 25." The requirements of FIN No. 44 are either not applicable to the company or are already consistent with the company's existing accounting policies.

Effective July 1, 2000, the company adopted Emerging Issues Task Force (EITF) Issue No. 00-2, "Accounting for Web Site Development Costs." As a result, the company changed its accounting policies to capitalize certain phases of Web site development costs that were previously expensed as incurred. The company amortizes these amounts on a straight-line basis over two years.

Pursuant to the Securities and Exchange Commission's SAB No. 101, "Revenue Recognition in Financial Statements," the company has reviewed its accounting policies for the recognition of revenue. SAB No. 101 was required to be implemented in fourth quarter 2000. SAB No. 101 provides guidance on applying generally accepted accounting principles to revenue recognition in financial statements. The company's policies for revenue recognition are consistent with the views expressed within SAB No. 101. See "Revenue," on page 75 for a description of the company's policies for revenue recognition.

Effective January 1, 1999, the company adopted American Institute of Certified Public Accountants (AICPA) Statement of Position (SOP) No. 98-1, "Accounting for the Costs of Computer Software Developed or Obtained for Internal Use." The SOP requires a company to capitalize certain costs that are incurred to purchase or to create and implement internal-use computer software. See "Software Costs," on page 79 for a description of the company's policies for internal-use software.

### NEW STANDARDS TO BE IMPLEMENTED

In July 2001, the FASB issued SFAS No. 141, "Business Combinations," and SFAS No. 142, "Goodwill and Intangible Assets." SFAS No. 141 requires the use of the purchase method of accounting for business combinations and prohibits the use of the pooling of interests method. Under the previous rules, the company used the purchase method of accounting. SFAS No. 141 also refines the definition of intangible assets acquired in a purchase business combination. As a result, the purchase price allocation of future business combinations may be different than the allocation that would have resulted under the old rules. Business combinations must be accounted for using SFAS No. 141 beginning on July 1, 2001.

SFAS No. 142 eliminates the amortization of goodwill, requires annual impairment testing of goodwill and introduces the concept of indefinite life intangible assets. It was adopted on January 1, 2002. The new rules also prohibit the amortization of goodwill associated with business combinations that close after June 30, 2001.

These new requirements will impact future period net income by an amount equal to the discontinued goodwill amortization offset by goodwill impairment charges, if any, and adjusted for any differences between the old and new rules for defining intangible assets on future business combinations.

An initial impairment test must be performed in 2002 as of January 1, 2002. The company completed this initial transition impairment test and determined that its goodwill is not impaired.

In August 2001, the FASB issued SFAS No. 143, "Accounting for Asset Retirement Obligations." SFAS No. 143 provides accounting and reporting guidance for legal obligations associated with the retirement of long-lived assets that result from the acquisition, construction or normal operation of a long-lived asset. The standard is effective January 1, 2003. The company is reviewing the provisions of this standard. Its adoption is not expected to have a material effect on the financial statements.

In October 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." SFAS No. 144 addresses significant issues relating to the implementation of SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of," and develops a single accounting model, based on the framework established in SFAS No. 121 for long-lived assets to be disposed of by sale, whether such assets are or are not deemed to be a business. SFAS No. 144 also modifies the accounting and disclosure rules for discontinued operations. The standard was adopted on January 1, 2002, and is not expected to have a material effect on the financial statements except that any future discontinued operations may be presented in the financial statements differently under the new rules as compared to the old rules.

In November 2001, the FASB issued EITF Issue No. 01-14, "Income Statement Characterization of Reimbursements Received for 'Out of Pocket' Expenses Incurred." This guidance requires companies to recognize the recovery of reimbursable expenses such as travel costs on services contracts as revenue. These costs are not to be netted as a reduction of cost. This guidance was effective January 1, 2002. The company does not expect this guidance to have a material effect on the financial statements due to the company's billing practices. For instance, outside the U.S., almost all of the company's contracts involve fixed billings that are designed to recover all costs, including out-of-pocket costs. Therefore, the "reimbursement" of these costs are already recorded in revenue.

## c Acquisitions/Divestitures

### ACQUISITIONS

*2001*

In 2001, the company completed two acquisitions at a cost of approximately $1,082 million.

The larger was the acquisition of Informix Corporation's database software business. In July, the company agreed to pay $1 billion in cash for the net assets of the business. Under the terms of the purchase, the company has paid $889 million of the purchase price and will pay the remaining amount in 2002. The Informix acquisition provides the company with a database software system for data warehousing, business intelligence and transaction-handling systems that are used by more than 100,000 customers. In addition, the acquisition significantly increased the size of the company's UNIX database business. The transaction was completed in the third quarter of 2001 from which time the results of this acquisition were included in the company's consolidated financial statements.

The allocation of the purchase price for the 2001 acquisitions is presented in the following table in the required SFAS No. 141 format.

| (dollars in millions) | Amortization Life (in years) | Informix* | Other |
|---|---|---|---|
| Current assets | | $ 156 | $ 57 |
| Fixed/long-term assets | | 41 | 21 |
| Intangible assets: | | | |
| Customer lists | 5 | 220 | — |
| Completed technology | 3 | 140 | — |
| Trademarks | 2 | 10 | — |
| Goodwill | | 591 | 25 |
| Total assets acquired | | $ 1,158 | $ 103 |
| Deferred revenue | | (101) | (2) |
| Payables/accrued expenses | | (55) | (21) |
| Total liabilities assumed | | $ (156) | $ (23) |
| Net assets acquired | | $ 1,002 | $ 80 |

** During the fourth quarter, the company revised the estimates originally disclosed in the third quarter. These adjustments resulted in an additional $40 million of goodwill and a corresponding decrease in tangible net assets acquired. There was no adjustment in the purchase price or in the company's earnings.*

The overall weighted-average life of intangible assets purchased from Informix is 4.2 years. Goodwill of $591 million has been assigned to the Software segment. Almost all of the goodwill is deductible for tax purposes. The primary items that generated this goodwill are the value of the acquired assembled workforce and the synergies between the acquired business and IBM. This transaction occurred after June 30, 2001, and therefore, the acquired goodwill is not subject to amortization.

*2000*

In 2000, the company completed nine acquisitions at a cost of approximately $511 million.

The largest acquisition was LGS Group Inc. (LGS). The company acquired all the outstanding stock of LGS in April for $190 million. LGS offers services ranging from application development to information technology (I/T) consulting.

The following table presents the allocation of the purchase price of the 2000 acquisitions.

| (dollars in millions) | LGS | Other |
|---|---|---|
| Purchase price | $ 190 | $ 321 |
| Tangible net assets | 31 | 68 |
| Identifiable intangible assets | — | 36 |
| Goodwill | 159 | 220 |
| In-process research and development | — | 9 |
| Deferred tax liabilities related to identifiable intangible assets | — | (12) |

*1999*

In 1999, the company completed 17 acquisitions at a cost of approximately $1,551 million. Three of the major acquisitions for the year are detailed in the following discussion.

On September 24, 1999, the company acquired all of the outstanding capital stock of Sequent Computer Systems, Inc., an acknowledged leader in systems based on NUMA (non-uniform memory access) architecture, for approximately $837 million.

On September 29, 1999, the company acquired all of the outstanding stock of Mylex Corporation, a leading developer of technology for moving, storing, protecting and managing data in desktop and networked environments, for approximately $259 million.

On September 27, 1999, the company acquired all of the outstanding stock of DASCOM, Inc., an industry leader in Web-based and enterprise-security technology, for approximately $115 million.

The following table presents the allocation of the purchase price of the 1999 acquisitions.

| (dollars in millions) | Sequent | Mylex | DASCOM | Other |
|---|---|---|---|---|
| Purchase price | $ 837* | $ 259 | $ 115 | $ 340 |
| Tangible net assets/ (liabilities) | 382 | 67 | (17) | 45 |
| Identifiable intangible assets | 187 | 35 | 13 | — |
| Current technology | 87 | 26 | 19 | 9 |
| Goodwill | 192* | 145 | 92 | 286 |
| In-process research and development | 85 | 7 | 19 | — |
| Deferred tax liabilities related to identifiable intangible assets | (96) | (21) | (11) | — |

** In 2000, the total purchase price and goodwill numbers were adjusted primarily for increased stock options being exercised versus being converted to IBM options and at a higher gain per option than originally assumed.*

The company's acquisitions were accounted for as purchase transactions, and accordingly, the assets and liabilities of the acquired entities were recorded at their estimated fair value at the date of acquisition. The effects of these acquisitions on the company's consolidated financial statements were not material. Hence, the company has not provided pro forma financial information as if the companies had combined at the beginning of the current period or at the immediately preceding period.

The tangible net assets comprise primarily cash, accounts receivable, land, buildings and leasehold improvements. The identifiable intangible assets comprise primarily patents, trademarks, customer lists, assembled workforce, employee agreements and leasehold interests. The identifiable intangible assets have been amortized on a straight-line basis, generally not to exceed five years. Except for Informix, goodwill has been amortized over five years. Effective January 1, 2002, any unamortized assembled workforce intangible asset will be reclassified to goodwill and all goodwill will no longer be amortized. See "New Standards to Be Implemented" on pages 80 and 81 for a description of the new accounting rules that eliminate the amortization of goodwill.

In connection with these acquisitions, the company recorded pre-tax charges of $9 million and $111 million for acquired in-process research and development (IPR&D) for 2000 and 1999, respectively. At the date of the acquisitions, the IPR&D projects had not yet reached technological feasibility and had no alternative future uses. The value of the IPR&D reflects the relative value and contribution of the acquired research and development to the company's existing research or product lines.

### DIVESTITURES

During 1999, the company completed the sale of its Global Network business to AT&T for $4,991 million. More than 5,300 IBM employees joined AT&T as a result of these sales of operations in 71 countries.

During 1999, the company recognized a pre-tax gain of $4,057 million ($2,495 million after tax, or $1.33 per diluted common share). The net gain reflects dispositions of plant, rental machines and other property of $410 million, other assets of $182 million and contractual obligations of $342 million. The gain was recorded as a reduction of SG&A expense in the Consolidated Statement of Earnings.

## d Financial Instruments (excluding derivatives)

### FAIR VALUE OF FINANCIAL INSTRUMENTS

Cash and cash equivalents, marketable securities, notes and other accounts receivable and other investments are financial assets with carrying values that approximate fair value. Accounts payable, other accrued expenses and liabilities, and short-term and long-term debt are financial liabilities with carrying values that approximate fair value.

### MARKETABLE SECURITIES*

The following table summarizes the company's marketable securities, all of which are considered available for sale, and alliance investments.

| (dollars in millions) | Fair Value | |
|---|---|---|
| AT DECEMBER 31: | **2001** | 2000 |
| Current marketable securities: | | |
| Time deposits and other obligations | **$ 55** | $ 153 |
| Non-U.S. government securities and other fixed-term obligations | **8** | 6 |
| Total | **$ 63** | $ 159 |
| Marketable securities—non current:** | | |
| Time deposits and other obligations | **$ 124** | $ 163 |
| Non-U.S. government securities and other fixed-term obligations | **—** | 8 |
| Total | **$ 124** | $ 171 |
| Non equity method alliance investments** | **$ 574** | $ 909 |

** Gross unrealized gains (before taxes) on marketable securities and alliance investments were $27 million and $47 million at December 31, 2001 and 2000, respectively. Gross unrealized losses (before taxes) on marketable securities and alliance investments were $4 million and $175 million at December 31, 2001 and 2000, respectively. See note m, "Stockholders' Equity Activity," on pages 88 and 89 for accumulated and net change in unrealized gains and losses on marketable securities.*

*** Included within Investments and sundry assets in the Consolidated Statement of Financial Position. (See note h, "Investments and Sundry Assets," on page 84.)*

## e Inventories

| (dollars in millions) | | |
|---|---|---|
| AT DECEMBER 31: | **2001** | 2000 |
| Finished goods | **$ 1,259** | $ 1,446 |
| Work in process and raw materials | **3,045** | 3,319 |
| Total | **$ 4,304** | $ 4,765 |

## f Financing Receivables

The following table includes receivables resulting from leasing activities, installment loans to customers, and commercial financing activities (primarily dealers and syndicated loan activities), arising from the Global Financing business. See note v, "Segment Information," on page 104 for information on the total assets of the Global Financing segment, which include cash, rental machine fixed assets, intercompany amounts and other assets.

| (dollars in millions) | | |
|---|---|---|
| AT DECEMBER 31: | **2001** | 2000 |
| Short-term: | | |
| Commercial financing receivables | **$ 5,452** | $ 6,851 |
| Customer loans receivable | **4,297** | 4,065 |
| Installment payment receivables | **871** | 1,221 |
| Net investment in sales-type leases | **6,036** | 6,568 |
| Total short-term financing receivables | **$ 16,656** | $ 18,705 |
| Long-term: | | |
| Commercial financing receivables | **$ 1,009** | $ 779 |
| Customer loans receivable | **4,041** | 4,359 |
| Installment payment receivables | **353** | 574 |
| Net investment in sales-type leases | **6,843** | 7,596 |
| Total long-term financing receivables | **$ 12,246** | $ 13,308 |

Net investment in sales-type leases is for leases that relate principally to IBM equipment and is generally for terms ranging from two to five years. Net investment in sales-type leases includes unguaranteed residual values of approximately $791 million and $785 million at December 31, 2001 and 2000, respectively, and is reflected net of unearned income at those dates of approximately $1,428 million and $1,481 million, respectively. Scheduled maturities of minimum lease payments outstanding at December 31, 2001, expressed as a percentage of the total, are approximately as follows: 2002, 50 percent; 2003, 31 percent; 2004, 14 percent; 2005, 4 percent; and 2006 and beyond, 1 percent.

## g Plant, Rental Machines and Other Property

| (dollars in millions) | | |
|---|---|---|
| AT DECEMBER 31: | **2001** | 2000 |
| Land and land improvements | **$ 859** | $ 896 |
| Buildings and building improvements | **10,073** | 9,904 |
| Plant, laboratory and office equipment | **22,369** | 22,354 |
| | **33,301** | 33,154 |
| Less: Accumulated depreciation | **18,982** | 18,857 |
| | **14,319** | 14,297 |
| Rental machines | **5,074** | 5,301 |
| Less: Accumulated depreciation | **2,889** | 2,884 |
| | **2,185** | 2,417 |
| Total | **$ 16,504** | $ 16,714 |

## h Investments and Sundry Assets

| (dollars in millions) AT DECEMBER 31: | 2001 | 2000 |
|---|---|---|
| Deferred taxes | **$ 2,395** | $ 2,968 |
| Prepaid pension assets | **9,407** | 6,806 |
| Alliance investments: | | |
| Equity method | **544** | 629 |
| Other | **574** | 909 |
| Goodwill (less accum. amortization) | **1,278** | 848 |
| Marketable securities—non current | **124** | 171 |
| Software | **963** | 782 |
| Other assets | **1,817** | 1,334 |
| Total | **$ 17,102** | $ 14,447 |

## i Sale and Securitization of Receivables

The company periodically sells receivables through the securitization of loans, leases and trade receivables. The company retains servicing rights in the securitized receivables for which it receives a servicing fee. Any gain or loss incurred as a result of such sales is recognized in the period in which the sale occurs.

During 2001, the company entered into an uncommitted trade receivables securitization facility that allows for the ongoing sale of up to $500 million of trade receivables. This facility was put in place primarily to provide backup liquidity and can be accessed on three days' notice. The company sold $179 million in trade receivables through this facility in 2001. In addition, the company sold $278 million of loans receivable due from state and local government customers through a securitization program established in 1990. No receivables were sold in 2000 under this program. Net gains and losses on these sales were insignificant.

Total cash proceeds of $460 million were received in 2001 from the sale and securitization of receivables.

At December 31, 2001, the total balance of assets securitized and under the company's management was $213 million, all of which related to loans receivable. Servicing assets net of servicing liabilities were insignificant.

The investors in the loans receivable securitizations have recourse to the company via a limited guarantee. At year-end 2001, delinquent amounts from the receivables sold and net credit losses were insignificant.

## j Borrowings

### SHORT-TERM DEBT

| (dollars in millions) AT DECEMBER 31: | 2001 | 2000 |
|---|---|---|
| Commercial paper | **$ 4,809** | $ 3,521 |
| Short-term loans | **1,564** | 3,975 |
| Long-term debt: Current maturities | **4,815** | 2,709 |
| Total | **$ 11,188** | $ 10,205 |

The weighted-average interest rates for commercial paper at December 31, 2001 and 2000, were 1.9 percent and 6.7 percent, respectively. The weighted-average interest rates for short-term loans at December 31, 2001 and 2000, were 4.0 percent and 2.9 percent, respectively.

### LONG-TERM DEBT

| (dollars in millions) AT DECEMBER 31: | Maturities | 2001 | 2000 |
|---|---|---|---|
| U.S. dollars: | | | |
| Debentures: | | | |
| 6.22% | 2027 | **$ 500** | $ 500 |
| 6.5% | 2028 | **700** | 700 |
| 7.0% | 2025 | **600** | 600 |
| 7.0% | 2045 | **150** | 150 |
| 7.125% | 2096 | **850** | 850 |
| 7.5% | 2013 | **550** | 550 |
| 8.375% | 2019 | **750** | 750 |
| Notes: 6.3% average | 2002-2014 | **2,772** | 2,933 |
| Medium-term note program: 5.4% average | 2002-2014 | **3,620** | 4,305 |
| Other: 4.5% average | 2002-2009 | **828** | 1,092 |
| | | **11,320** | 12,430 |
| Other currencies (average interest rate at December 31, 2001, in parentheses): | | | |
| Euros (4.4%) | 2002-2009 | **3,042** | 3,042 |
| Japanese yen (1.1%) | 2002-2014 | **4,749** | 4,845 |
| Canadian dollars (5.8%) | 2002-2011 | **441** | 302 |
| Swiss francs (4.0%) | 2002-2003 | **151** | 231 |
| Other (6.1%) | 2002-2014 | **726** | 275 |
| | | **20,429** | 21,125 |
| Less: Net unamortized discount | | **47** | 45 |
| Add: SFAS No. 133 fair value adjustment* | | **396** | — |
| | | **20,778** | 21,080 |
| Less: Current maturities | | **4,815** | 2,709 |
| Total | | **$ 15,963** | $ 18,371 |

** In accordance with the requirements of SFAS No. 133, the portion of the company's fixed-rate debt obligations that is hedged is reflected in the Consolidated Statement of Financial Position as an amount equal to the sum of the debt's carrying value plus a SFAS No. 133 fair value adjustment representing changes recorded in the fair value of the hedged debt obligations attributable to movements in market interest rates.*

Annual maturities on long-term debt outstanding at December 31, 2001, are as follows:

| (dollars in millions) | |
|---|---|
| 2002 | $ 5,186 |
| 2003 | 3,106 |
| 2004 | 1,501 |
| 2005 | 1,904 |
| 2006 | 2,261 |
| 2007 and beyond | 6,471 |

### INTEREST ON DEBT

| (dollars in millions) | **2001** | 2000* | 1999* |
|---|---|---|---|
| Cost of Global Financing | **$ 964** | $ 1,082 | $ 1,100 |
| Interest expense | **238** | 347 | 352 |
| Interest capitalized | **33** | 20 | 23 |
| Total interest paid and accrued | **$ 1,235** | $ 1,449 | $ 1,475 |

** Reclassified to conform with 2001 presentation.*

Refer to the table and related discussion on page 104 in note v, "Segment Information," for the total interest expense of the Global Financing segment. See note k, "Derivatives and Hedging Transactions," on pages 85 through 87 for a discussion of the use of currency and interest rate swaps in the company's debt risk management program.

### LINES OF CREDIT

Effective May 31, 2001, the company replaced its $10 billion committed global credit facility, which was due to expire in February 2002, with two global credit facilities totaling $12.0 billion in committed credit lines, including an $8.0 billion five-year facility and a $4.0 billion 364-day facility. The company's other lines of credit, most of which were uncommitted, totaled $6,860 million and $7,646 million, respectively, at December 31, 2001 and 2000. Interest rates and other terms of borrowing under these lines of credit vary from country to country, depending on local market conditions.

| (dollars in millions) AT DECEMBER 31: | **2001** | 2000 |
|---|---|---|
| Unused lines | | |
| From the committed global credit facility | **$ 11,383** | $ 9,103 |
| From other committed and uncommitted lines | **4,738** | 5,111 |
| Total unused lines of credit | **$ 16,121** | $ 14,214 |

## k Derivatives and Hedging Transactions

### DERIVATIVES AND HEDGING

The company operates in approximately 35 functional currencies and is a significant lender and a borrower in the global markets. In the normal course of business, the company is exposed to the impact of interest rate changes and foreign currency fluctuations. The company limits these risks by following established risk management policies and procedures including use of derivatives and, where cost-effective, financing with debt in the currencies in which assets are denominated. For interest rate exposures, derivatives are used to align rate movements between the interest rates associated with the company's lease and other financial assets and the interest rates associated with its financing debt. Derivatives are also used to manage the related cost of debt. For currency exposures, derivatives are used to limit the effects of foreign exchange rate fluctuations on financial results.

The company does not use derivatives for trading or speculative purposes, nor is it a party to leveraged derivatives. Further, the company has a policy of only entering into contracts with carefully selected major financial institutions based upon their credit ratings and other factors and maintains strict dollar and term limits that correspond to the institution's credit rating. When viewed in conjunction with the underlying and offsetting exposure that the derivatives are designed to hedge, the company has not sustained a material loss from these instruments.

In its hedging programs, the company employs the use of forward contracts, interest rate and currency swaps, options, caps, floors or a combination thereof depending upon the underlying exposure.

A brief description of the major hedging programs follows:

*Debt Risk Management*

The company issues debt on the global capital markets, principally to fund its financing lease and loan portfolio. Access to cost-effective financing can result in interest rate and/or currency mismatches with the underlying assets. To manage these mismatches and to reduce overall interest cost, the company primarily uses interest-rate and currency instruments, principally swaps, to convert specific fixed-rate debt issuances into variable-rate debt (i.e., fair value hedges) and to convert specific variable-rate debt and anticipated

commercial paper issuances to fixed rates (i.e., cash flow hedges). The resulting cost of funds is lower than that which would have been available if debt with matching characteristics was issued directly. The weighted-average remaining maturity of all swaps in the debt risk management program is approximately four years.

*Long-Term Investments in Foreign Subsidiaries ("net investments")*
A significant portion of the company's foreign currency denominated debt portfolio is designated as a hedge to reduce the volatility in stockholders' equity caused by changes in foreign currency exchange rates in the functional currency of major foreign subsidiaries with respect to the U.S. dollar. The company also uses currency swaps and foreign exchange forward contracts for this risk management purpose. The currency effects of these hedges (approximately $506 million for the current period, net of tax) are reflected as a credit in the Accumulated gains and losses not affecting retained earnings section of the Consolidated Statement of Stockholders' Equity, thereby offsetting a portion of the translation of the applicable foreign subsidiaries' net assets.

*Anticipated Royalties and Cost Transactions*
The company's operations generate significant non functional currency third party vendor payments and intercompany payments for royalties and goods and services among the company's non-U.S. subsidiaries and with the parent company. In anticipation of these foreign currency cash flows and in view of the volatility of the currency markets, the company selectively employs foreign exchange forward and option contracts to manage its currency risk. At December 31, 2001, the maximum remaining maturity of these derivative instruments was less than 24 months, commensurate with the underlying hedged anticipated cash flows. The effective portion of the gain or loss of these contracts is reported in net income when the underlying transactions occur. Classification of derivative gains and losses in the Consolidated Statement of Earnings is consistent with the recognition of the specific underlying transactions hedged.

*Subsidiary Cash and Foreign Currency Asset/Liability Management*
The company uses its Global Treasury Centers to manage the cash of its subsidiaries. These centers principally use currency swaps to convert cash flows in a cost-effective manner. In addition, the company uses foreign exchange forward contracts to hedge, on a net basis, the foreign currency exposure of a portion of the company's non functional currency assets and liabilities. The terms of these forward and swap contracts are generally less than one year. The changes in fair value from these contracts and from the underlying hedged exposures are generally offsetting and are recorded in Other income and expense in the Consolidated Statement of Earnings.

*Equity Risk Management*
The company is exposed to certain equity price changes related to certain obligations to employees. These equity exposures are primarily related to market value movements in certain broad equity market indices and in the company's own stock. Changes in the overall value of this employee compensation obligation are recorded in SG&A expense in the Consolidated Statement of Earnings. Although not designated as accounting hedges, the company utilizes equity derivatives, including equity swaps and futures to economically hedge the equity exposures relating to this employee compensation obligation. To match the exposures relating to this employee compensation obligation, these derivatives are linked to the total return of certain broad equity market indices and/or the total return of the company's common stock. These derivatives are recorded at fair value with gains or losses also reported in SG&A expense in the Consolidated Statement of Earnings.

*Other Derivatives*
The company holds warrants in connection with certain investments that, although not designated as hedging instruments, are deemed derivatives since they contain net share settlement clauses. During the year, the company recorded the change in the fair value of these warrants in net income.

The following table summarizes the net fair value of the company's derivative and other risk management instruments at December 31, 2001, included in the Consolidated Statement of Financial Position.

*Risk Management Program*

| (dollars in millions) | Hedge Designation: Fair Value | Hedge Designation: Cash Flow | Hedge Designation: Net Investment | Non-Hedge/ Other |
|---|---|---|---|---|
| Derivatives: | | | | |
| Debt risk management | $ 301 | $ (26) | $ — | $ (13) |
| Long-term investments in foreign subsidiaries ("net investments") | | | 92 | |
| Anticipated royalties and cost transactions | | 375 | | |
| Subsidiary cash and foreign currency asset/liability management | | | | 16 |
| Equity risk management | | | | 22 |
| All other | | | | 3 |
| Total derivatives | $ 301[1] | $ 349[2] | $ 92[3] | $ 28[4] |
| Debt: | | | | |
| Long-term investments in foreign subsidiaries ("net investments") | — | — | (5,519)* | — |
| Total | $ 301 | $ 349 | $ (5,427) | $ 28 |

** Represents fair value of foreign denominated debt issuances formally designated as a hedge of net investments.*

[1] *Comprises assets of $301 million.*
[2] *Comprises assets of $383 million and liabilities of $34 million.*
[3] *Comprises assets of $92 million.*
[4] *Comprises assets of $60 million and liabilities of $32 million.*

*Accumulated Derivative Gains or Losses*

As illustrated, the company makes extensive use of cash flow hedges, principally in the anticipated royalties and cost transactions risk management program. In connection with the company's cash flow hedges, it has recorded approximately $296 million of net gains in Accumulated gains and losses not affecting retained earnings as of December 31, 2001, net of tax, of which approximately $276 million is expected to be reclassified to net income within the next year to provide an economic offset to the impact of the underlying anticipated cash flows hedged.

The following table summarizes activity in the Accumulated gains and losses not affecting retained earnings section of the Consolidated Statement of Stockholders' Equity related to all derivatives classified as cash flow hedges held by the company during the period January 1, 2001 (the date of the company's adoption of SFAS No. 133) through December 31, 2001:

| (dollars in millions, net of tax) | Debit/ (Credit) |
|---|---|
| Cumulative effect of adoption of SFAS No. 133 as of January 1, 2001 | $ (219) |
| Net gains reclassified into earnings from equity | 379 |
| Changes in fair value of derivatives | (456) |
| Accumulated derivative gain included in Accumulated gains and losses not affecting retained earnings as of December 31, 2001 | $ (296) |

As of December 31, 2001, there were no significant gains or losses on derivative transactions or portions thereof that were either ineffective as hedges, excluded from the assessment of hedge effectiveness, or associated with an underlying exposure that did not occur; nor are there any anticipated in the normal course of business.

## I Other Liabilities

| (dollars in millions) AT DECEMBER 31: | 2001 | 2000 |
|---|---|---|
| Retirement and nonpension postretirement benefits— U.S. and non-U.S. employees | **$ 8,044** | $ 7,128 |
| Deferred income taxes | **1,593** | 1,623 |
| Deferred income | **1,145** | 1,266 |
| Executive compensation accruals | **868** | 769 |
| Restructuring actions | **589** | 854 |
| Postemployment/ preretirement liability | **493** | 585 |
| Environmental accruals | **215** | 226 |
| Other | **670** | 497 |
| Total | **$ 13,617** | $ 12,948 |

The company has taken actions, including workforce rebalancing actions, each year to improve productivity and competitive position. Contractually obligated future payments associated with these ongoing activities are recorded in postemployment/preretirement liabilities. Prior to 1994 and in 1999, the company took significant actions including

significant workforce reductions. The non current liabilities relating to these actions are included in restructuring actions in the table on page 87. See note q, "1999 Actions," on pages 91 through 93 for more information regarding the 1999 actions. The reconciliation of the December 31, 2000 to 2001, balances of the current and non current liabilities for restructuring actions are presented below. The current liabilities presented in the table are included in Other accrued expenses and liabilities in the Consolidated Statement of Financial Position.

| (dollars in millions) | Dec. 31, 2000 Balance | Payments | Other Adjustments | Dec. 31, 2001 Balance |
|---|---|---|---|---|
| Current: | | | | |
| Workforce | $ 148 | $ 128 | $ 67 | $ 87 |
| Space | 91 | 86 | 60 | 65 |
| Total | $ 239 | $ 214 | $ 127 | $ 152 |
| Non current: | | | | |
| Workforce | $ 470 | $ — | $ (85) | $ 385 |
| Space | 384 | — | (180) | 204 |
| Total | $ 854 | $ — | $ (265) | $ 589 |

The workforce accruals relate to terminated employees who are no longer working for the company, but who were granted annual payments to supplement their state pensions in certain countries. These contractually required payments will continue until the former employee dies.

The space accruals are for ongoing obligations to pay rent for vacant space that could not be sublet or space that was sublet at rates lower than the committed lease arrangement. The length of these obligations varies by lease with the longest extending through 2012.

The Other Adjustments column in the table above includes the reclassification of non current to current and translation adjustments. In addition, the company adjusted its vacant space accrual by $110 million. This adjustment is recorded as part of the real estate activity included in Other income and expense and is offset by a decline in real estate gains in 2001. Refer to "Other Income and Expense," on page 91 for additional information on the company's net gains from real estate activity. The adjustment was made as a result of the company's periodic reassessment of the remaining accrual.

The company employs extensive internal environmental protection programs that primarily are preventive in nature. The company also participates in environmental assessments and cleanups at a number of locations, including operating facilities, previously owned facilities and Superfund sites.

The total amounts accrued for environmental liabilities, including amounts classified as current in the Consolidated Statement of Financial Position, that do not reflect actual or anticipated insurance recoveries, were $238 million and $248 million at December 31, 2001 and 2000, respectively.

Estimated environmental costs are not expected to materially affect the financial position or results of the company's operations in future periods. However, estimates of future costs are subject to change due to protracted cleanup periods and changing environmental remediation regulations.

## m Stockholders' Equity Activity

### STOCK REPURCHASES

From time to time, the Board of Directors authorizes the company to repurchase IBM common stock. The company repurchased 50,764,698 common shares at a cost of $5.3 billion and 61,041,820 common shares at a cost of $6.7 billion in 2001 and 2000, respectively. In 2001 and 2000, the company issued 1,923,502 and 2,174,594 treasury shares, respectively, as a result of exercises of stock options by employees of certain recently acquired businesses and by non-U.S. employees. At December 31, 2001, approximately $4.6 billion of Board authorized repurchases remained. The company plans to purchase shares on the open market from time to time, depending on market conditions. The company also repurchased 314,433 common shares at a cost of $31 million and 249,288 common shares at a cost of $27 million in 2001 and 2000, respectively, as part of other stock compensation plans.

In 1995, the Board of Directors authorized the company to repurchase all of its outstanding Series A 7-1/2 percent callable preferred stock. On May 18, 2001, the company announced it would redeem all outstanding shares of its Series A 7-1/2 percent callable preferred stock, represented by the outstanding depositary shares (10,184,043 shares). The depositary shares represent ownership of one-fourth of a share of preferred stock. Depositary shares were redeemed as of July 3, 2001, the redemption date, for cash at a redemption price of $25 plus accrued and unpaid dividends to the redemption date for each depositary share. Dividends on preferred stock, represented by the depositary shares, ceased to accrue on the redemption date. The company did not repurchase any shares in 2000.

### EMPLOYEE BENEFITS TRUST

In 1997, the company created an employee benefits trust to which the company contributed 10 million shares of treasury stock. The company was authorized to instruct the trustee to sell such shares from time to time and to use the proceeds from such sales, and any dividends paid or earnings received on such stock, toward the partial payment of the company's obligations under certain of its compensation and benefit plans. The shares held in trust were not considered outstanding for earnings per share purposes until they were committed to be released. The company did not commit any

shares for release from the trust during its existence nor were any shares sold from the trust. The trust would have expired in 2007. Due to the fact that the company has not used the trust, nor is it expected to need the trust prior to its expiration, the company dissolved the trust, effective May 31, 2001, and all of the shares (20 million on a split-adjusted basis) were returned to the company as treasury shares. Dissolution of the trust will not affect the company's obligations related to any of its compensation and employee benefit plans or its ability to settle the obligations. In addition, the dissolution is not expected to have any impact on net income. At this time, the company plans to fully meet its obligations for the compensation and benefit plans in the same manner as it does today, using cash from operations.

ACCUMULATED GAINS AND LOSSES NOT AFFECTING RETAINED EARNINGS*+

| (dollars in millions) | Net Unrealized Gains on Cash Flow Hedge Derivatives | Foreign Currency Translation Adjustments | Minimum Pension Liability Adjustments | Net Unrealized Gains/(Losses) on Marketable Securities | Accumulated Gains/(Losses) Not Affecting Retained Earnings |
|---|---|---|---|---|---|
| January 1, 1999 | $ — | $ 1,014 | $ (154) | $ 51 | $ 911 |
| Change for period | — | (549) | 3 | 796 | 250 |
| December 31, 1999 | — | 465 | (151) | 847 | 1,161 |
| Change for period | — | (538) | 7 | (925) | (1,456) |
| December 31, 2000 | — | (73) | (144) | (78) | (295) |
| Cumulative effect on January 1, 2001 | 219 | — | — | — | 219 |
| Change for period | 77 | (539) | (216) | 92 | (586) |
| December 31, 2001 | $ 296 | $ (612) | $ (360) | $ 14 | $ (662) |

* *Net of tax.*
+ *Reclassified to conform with 2001 presentation.*

*Net Change in Unrealized Gains/(Losses) on Marketable Securities (net of tax)*

| (dollars in millions) AT DECEMBER 31: | 2001 | 2000 |
|---|---|---|
| Net unrealized losses arising during the period | **$ (154)** | $ (810) |
| Less net (losses)/gains included in net income for the period | **(246)*** | 115 |
| Net change in unrealized gains/ (losses) on marketable securities | **$ 92** | $ (925) |

* *Includes write-downs of $287 million.*

Unrealized losses arising in 2000 relate primarily to previous unrealized gains from original cost occurring in prior years.

## n Contingencies and Commitments

### CONTINGENCIES

The company is subject to a variety of claims and suits that arise from time to time in the ordinary course of its business, including actions with respect to contracts, intellectual property, product liability, employment and environmental matters. The company is a defendant and/or third-party defendant in a number of cases in which claims have been filed by current and former employees, independent contractors, estate representatives, offspring and relatives of employees seeking damages for wrongful death and personal injuries allegedly caused by exposure to chemicals in various of the company's facilities from 1964 to the present. The company believes that plaintiffs' claims are without merit and will defend itself vigorously.

While it is not possible to predict the ultimate outcome of the matters discussed above, the company believes that any losses associated with any of such matters will not have a material effect on the company's business, financial condition or results of operations.

### COMMITMENTS

The company has guaranteed certain loans and financial commitments. The approximate amount of these financial guarantees was $218 million and $388 million at December 31, 2001 and 2000, respectively.

The company extended lines of credit, of which the unused amounts were $4,088 million and $4,235 million at December 31, 2001 and 2000, respectively. A portion of these amounts was available to the company's dealers to support their working capital needs. In addition, the company committed to provide future financing to its customers in connection with customer purchase agreements for approximately $269 million and $129 million at December 31, 2001 and 2000, respectively.

## o Taxes

| (dollars in millions) FOR THE YEAR ENDED DECEMBER 31: | 2001 | 2000 | 1999 |
|---|---|---|---|
| Income before income taxes: | | | |
| U.S. operations | **$ 5,386** | $ 5,871 | $ 5,892 |
| Non-U.S. operations | **5,567** | 5,663 | 5,865 |
| | **$ 10,953** | $ 11,534 | $ 11,757 |
| The provision for income taxes by geographic operations is as follows: | | | |
| U.S. operations | **$ 1,455** | $ 1,692 | $ 2,005 |
| Non-U.S. operations | **1,775** | 1,749 | 2,040 |
| Total provision for income taxes | **$ 3,230** | $ 3,441 | $ 4,045 |

The components of the provision for income taxes by taxing jurisdiction are as follows:

| (dollars in millions) FOR THE YEAR ENDED DECEMBER 31: | 2001 | 2000 | 1999 |
|---|---|---|---|
| U.S. federal: | | | |
| Current | **$ 348** | $ 613 | $ 1,759 |
| Deferred | **341** | 286 | (427) |
| | **689** | 899 | 1,332 |
| U.S. state and local: | | | |
| Current | **62** | 192 | 272 |
| Deferred | **155** | 47 | 7 |
| | **217** | 239 | 279 |
| Non-U.S.: | | | |
| Current | **2,162** | 2,607 | 2,727 |
| Deferred | **162** | (304) | (293) |
| | **2,324** | 2,303 | 2,434 |
| Total provision for income taxes | **3,230** | 3,441 | 4,045 |
| Provision for social security, real estate, personal property and other taxes | **2,761** | 2,766 | 2,831 |
| Total provision for taxes | **$ 5,991** | $ 6,207 | $ 6,876 |

The effect of tax law changes on deferred tax assets and liabilities did not have a significant effect on the company's effective tax rate.

The significant components of activities that gave rise to deferred tax assets and liabilities that are recorded on the Consolidated Statement of Financial Position were as follows:

*Deferred Tax Assets*

| (dollars in millions) AT DECEMBER 31: | 2001 | 2000 |
|---|---|---|
| Employee benefits | **$ 3,612** | $ 3,673 |
| Alternative minimum tax credits | **1,282** | 1,424 |
| Bad debt, inventory and warranty reserves | **907** | 953 |
| Capitalized research and development | **747** | 848 |
| General business credits | **700** | 655 |
| Deferred income | **656** | 837 |
| Infrastructure reduction charges | **466** | 617 |
| Depreciation | **386** | 376 |
| Foreign tax loss carryforwards | **325** | 489 |
| Equity alliances | **290** | 437 |
| State and local tax loss carryforwards | **238** | 246 |
| Intracompany sales and services | **127** | 149 |
| Other | **2,974** | 2,809 |
| Gross deferred tax assets | **12,710** | 13,513 |
| Less: Valuation allowance | **581** | 572 |
| Net deferred tax assets | **$ 12,129** | $ 12,941 |

*Deferred Tax Liabilities*

| (dollars in millions) AT DECEMBER 31: | 2001 | 2000 |
|---|---|---|
| Retirement benefits | **$ 3,977** | $ 3,447 |
| Sales-type leases | **2,159** | 2,450 |
| Depreciation | **971** | 1,179 |
| Software costs deferred | **318** | 306 |
| Other | **1,744** | 1,836 |
| Gross deferred tax liabilities | **$ 9,169** | $ 9,218 |

The valuation allowance at December 31, 2001, principally applies to certain state and local, and foreign tax loss carryforwards that, in the opinion of management, are more likely than not to expire before the company can use them.

A reconciliation of the company's effective tax rate to the statutory U.S. federal tax rate is as follows:

| FOR THE YEAR ENDED DECEMBER 31: | 2001 | 2000 | 1999 |
|---|---|---|---|
| Statutory rate | **35%** | 35% | 35% |
| Foreign tax differential | **(5)** | (6) | (2) |
| State and local | **1** | 1 | 1 |
| Valuation allowance related items | **—** | (1) | — |
| Other | **(1)** | 1 | — |
| Effective rate | **30%** | 30% | 34% |

The company's effective rate will change year to year based on nonrecurring events (such as the sale of the Global Network business and various other actions in 1999) as well as recurring factors including the geographical mix of income before taxes, the timing and amount of foreign dividends, state and local taxes, and the interaction of various global tax strategies. In the normal course of business, the company expects that its effective rate will approximate 30 percent.

For tax return purposes, the company has available tax credit carryforwards of approximately $2,092 million, of which $1,282 million have an indefinite carryforward period and the remainder begin to expire in 2004. The company also has state and local, and foreign tax loss carryforwards, the tax effect of which is $563 million. Most of these carryforwards are available for 5 years or have an indefinite carryforward period.

Undistributed earnings of non-U.S. subsidiaries included in consolidated retained earnings were $16,851 million at December 31, 2001, $15,472 million at December 31, 2000, and $14,900 million at December 31, 1999. These earnings, which reflect full provision for non-U.S. income taxes, are indefinitely reinvested in non-U.S. operations or will be remitted substantially free of additional tax.

## p Expense and Other Income

### SELLING, GENERAL AND ADMINISTRATIVE

Included in SG&A expense is advertising expense, which includes media, agency and promotional expenses, of $1,615 million, $1,746 million and $1,758 million in 2001, 2000 and 1999, respectively. Workforce accruals for contractually obligated payments to employees terminated in the ongoing course of business were $293 million, $169 million and $486 million in 2001, 2000 and 1999, respectively. The provision for bad debt expense in 2001, 2000 and 1999 was $491 million, $271 million and $319 million, respectively.

In 1999, the $4,057 million gain from the sale of the Global Network (see "Divestitures," on page 82 for additional information) was recorded as a reduction of SG&A expense and the cost of $1,546 million for the 1999 actions described in note q, "1999 Actions," was included in SG&A expense.

### RESEARCH, DEVELOPMENT AND ENGINEERING

Research, development and engineering expense was $5,290 million in 2001, $5,374 million in 2000 and $5,505 million in 1999.

The company had expenses of $4,620 million in 2001, $4,568 million in 2000 and $4,806 million in 1999 for basic scientific research and the application of scientific advances to the development of new and improved products and their uses. Of these amounts, software-related expenses were $1,926 million, $1,956 million and $2,051 million in 2001, 2000 and 1999, respectively. Included in the expense for 2000 and 1999 are charges for acquired in-process research and development of $9 million and $111 million, respectively. See note c, "Acquisitions/Divestitures," on page 82 for further information about that expense.

Expenses for product-related engineering were $670 million, $806 million and $699 million in 2001, 2000 and 1999, respectively.

### INTELLECTUAL PROPERTY AND CUSTOM DEVELOPMENT INCOME

The company earned the following intellectual property-related income:

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| Sales and other transfers of intellectual property | **$ 736** | $ 915 | $ 628 |
| Licensing/royalty-based fees | **515** | 590 | 646 |
| Custom development income | **284** | 223 | 232 |
| Total | **$ 1,535** | $ 1,728 | $ 1,506 |

### OTHER INCOME AND EXPENSE

The company recorded interest income (other than from the company's Global Financing business) of $178 million, $310 million and $416 million in 2001, 2000 and 1999, respectively. Net realized gains/(losses) from sales and other than temporary declines in market value of securities and other investments were $(169) million, $265 million and $366 million in 2001, 2000 and 1999, respectively. Net realized gains from certain real estate activity were $133 million, $222 million and $100 million in 2001, 2000 and 1999, respectively. Foreign currency transaction gains/(losses) amounted to $198 million, $140 million and $(125) million in 2001, 2000 and 1999, respectively.

## q 1999 Actions

### TECHNOLOGY GROUP ACTIONS

During 1999, the company implemented actions that were designed to better align the operations and cost structure of IBM's Technology Group with that group's strategic direction in view of the competitive environment, overcapacity in the industry and resulting pricing pressures. The actions affected the Microelectronics Division (MD), the Storage Technology Division (STD)—previously known as the Storage Systems Division—and the Networking Hardware Division (NHD) of the company's Technology Group. The company completed these actions during the first half of 2000.

In total, the Technology Group actions resulted in a charge of $1,690 million ($1,366 million after tax, or $.73 per diluted common share) as described below and in the table on page 92.

The actions within MD addressed a prolonged, industry-wide downturn in memory chip prices that affected the

results of the company's semiconductor business. They were intended to enable the company to (1) reconfigure the assets and capabilities of the division to allow more focus on the faster-growth, higher-margin custom logic portion of the MD business and (2) enhance its ability to more cost-effectively manage a partnership agreement that was formed to produce complementary metal oxide semiconductor (CMOS) based logic components.

The company reduced its internal dynamic random access memory (DRAM) capacity by converting its manufacturing facility in Essonnes, France, from DRAM to custom logic. The company effected that conversion through a joint venture with Infineon Technologies, which at the time was a subsidiary of Siemens AG. Also related to DRAM, the company executed contracts with various banks and other financing institutions to sell and lease back test equipment.

The company also participated in a 50/50 joint venture (Dominion Semiconductor Company) with Toshiba Corporation to produce DRAM memory components. The company entered into an agreement whereby Toshiba assumed the company's interest in Dominion effective December 1, 2000. The company participated in the capacity output of Dominion at a significantly reduced rate in the interim period.

The company held a majority interest in a joint venture (MiCRUS) with Cirrus Logic Inc. (the partner) to produce CMOS-based logic components for IBM and its partner based on contractual capacity agreements. The partner indicated that it would not require the output capacity that was provided for in the partnership agreement. The company determined that the most cost-effective manner in which to address the partner's desire to exit the partnership agreement was to acquire the minority interest held by that partner and to cut back production. In the second quarter of 1999, the company accrued related costs associated with the MiCRUS operations. The liability created was primarily for lease termination charges for equipment under the MiCRUS operation. Since June 1999, related activities were under way and were completed in June 2000. The liabilities accrued in the second quarter of 1999 were utilized during the second quarter of 2000. In June 2000, the company sold its MiCRUS semiconductor operations to Philips Semiconductors, an affiliate of Royal Philips Electronics.

The company also announced aggressive steps intended to improve its competitive position in the markets that STD serves by merging server hard disk drive (HDD) product lines and realigning operations. The company integrated all server HDDs into a single low-cost design platform that uses common development and manufacturing processes. The company transferred manufacturing assembly and test operations to Hungary and Mexico and completed these actions by mid-2000.

The actions within NHD relate to a global alliance with Cisco Systems, Inc. As a result of the announcement of the alliance, demand for the router and switch products by both existing and new customers deteriorated.

The following table identifies the significant components of the pre-tax charge related to the 1999 actions and the liability as of December 31, 2001 and 2000:

| (dollars in millions) | Total Pre-Tax Charges* | Investments and Other Asset Write-Downs | Liability Created in 1999 | Payments | Other Adjustments** | Liability as of Dec. 31, 1999 | Payments | Other Adjustments** | Liability as of Dec. 31, 2000 |
|---|---|---|---|---|---|---|---|---|---|
| Technology Group | | | | | | | | | |
| MD Actions: | | | | | | | | | |
| DRAM | | | | | | | | | |
| Equipment[1] | $ 662 | $ 662 | $ — | $ — | $ — | $ — | $ — | $ — | $ — |
| Employee terminations:[2][8] | | | | | | | | | |
| Current | 30 | — | 30 | 15 | 18 | 33 | 44 | 26 | 15 |
| Non current | 137 | — | 137 | — | (21) | 116 | — | (30) | 86 |
| Dominion investment[3] | 171 | 171 | — | — | — | — | — | — | — |
| MiCRUS investment[4] | 152 | — | 152 | — | — | 152 | 152 | — | — |
| STD Actions: | | | | | | | | | |
| Equipment[5] | 337 | 337 | — | — | — | — | — | — | — |
| Employee terminations[6] | 23 | — | 23 | 16 | — | 7 | 7 | — | — |
| NHD Action: | | | | | | | | | |
| Inventory write-downs and contract cancellations[7] | 178 | 178 | — | — | — | — | — | — | — |
| Total 1999 actions | $ 1,690 | $ 1,348 | $ 342 | $ 31 | $ (3) | $ 308 | $ 203 | $ (4) | $ 101 |

| (dollars in millions) | Liability as of Dec. 31, 2000 | Payments | Other Adjustments** | Liability as of Dec. 31, 2001 |
|---|---|---|---|---|
| DRAM | | | | |
| Employee terminations:[2][8] | | | | |
| Current | $ 15 | $ 14 | $ 12 | $ 13 |
| Non current | 86 | — | (12) | 74 |
| Total 1999 actions | $ 101 | $ 14 | $ — | $ 87 |

* *With the exception of NHD inventory write-downs, all charges were recorded in SG&A expense. NHD inventory write-downs were recorded in Hardware cost.*

** *Principally represents reclassification of non current to current and translation adjustments.*

[1] *Represents (a) the difference between net book value and fair value of assets that were contributed to a joint venture, (b) the book value of assets that were removed from service as a result of the MD actions and were scrapped during the second quarter of 1999 and (c) the difference between the net book value and the appraised fair value of test equipment that is subject to sale-leaseback agreements and that is being used and appropriately expensed.*

[2] *Workforce reductions that affected approximately 790 employees (455 direct manufacturing and 335 indirect manufacturing) in France. The workforce reductions were completed by the end of the first quarter of 2000.*

[3] *Write-off of investment in joint venture at the signing of the agreement with Toshiba Corporation.*

[4] *Acquisition of minority interest in MiCRUS and charges for equipment leasehold cancellation liabilities and lease rental payments for idle equipment. The MiCRUS semiconductor operation was sold to Philips Semiconductors during June 2000.*

[5] *Represents (a) the book value of assets that were removed from service as a result of the STD actions and were scrapped during the second and third quarters of 1999, (b) write-downs to fair value of equipment under contract for sale and delivery by December 1, 1999 ($29 million), and March 31, 2000 ($5 million), and (c) the difference between the net book value and the appraised fair value of equipment that is subject to sale-leaseback agreements and that is being used and appropriately expensed.*

[6] *Workforce reductions that affected approximately 900 employees (780 direct manufacturing and 120 indirect manufacturing) in the U.S. The workforce reductions were completed by the end of the first quarter of 2000.*

[7] *Write-down to net realizable value of inventory of router and switch products ($144 million) and contract cancellation fees ($34 million) related to deterioration in demand for router and switch products.*

[8] *The 2001 year-end and 2000 amounts are also disclosed in note l, "Other Liabilities," on pages 87 and 88.*

### CHANGE IN ESTIMATE

As a result of a change in the estimated useful life of personal computers from five years to three years, the company recognized a charge in the second quarter of 1999 of $404 million ($241 million after tax, $.13 per diluted common share). In the second quarter of 1999, the company wrote off the net book value of personal computers that were three years old or older and, therefore, had no remaining useful life. The remaining book value of the assets will be depreciated over the remaining new useful life. The net effect on future operations is expected to be minimal as the increased depreciation due to the shorter life will be offset by the lower depreciable base attributable to the write-off of personal computers older than three years.

## r Earnings Per Share of Common Stock

The following table sets forth the computation of basic and diluted earnings per share of common stock.

| FOR THE YEAR ENDED DECEMBER 31: | **2001** | 2000 | 1999 |
|---|---|---|---|
| Weighted-average number of shares on which earnings per share calculations are based: | | | |
| Basic | **1,733,348,422** | 1,763,037,049 | 1,808,538,346 |
| Add—incremental shares under stock compensation plans | **36,595,476** | 46,750,030 | 59,344,849 |
| Add—incremental shares associated with contingently issuable shares | **1,277,222** | 2,331,343 | 3,190,717 |
| Add—incremental shares associated with put options* | **9,479** | — | — |
| Assuming dilution | **1,771,230,599** | 1,812,118,422 | 1,871,073,912 |
| (dollars in millions except per share amounts) | | | |
| Net income applicable to common stockholders (millions) | **$ 7,713** | $ 8,073 | $ 7,692 |
| Less—net income applicable to contingently issuable shares (millions) | **4** | 21 | (11) |
| Net income on which diluted earnings per share is calculated (millions) | **$ 7,709** | $ 8,052 | $ 7,703 |
| Earnings per share of common stock: | | | |
| Assuming dilution | **$ 4.35** | $ 4.44 | $ 4.12 |
| Basic | **$ 4.45** | $ 4.58 | $ 4.25 |

* *Represents short-term put option contracts sold by the company on a limited basis through private placements with independent third parties to reduce the cost of the share buyback program. The put option contracts that were executed permitted net share settlement at the company's option and did not result in a put option liability on the Consolidated Statement of Financial Position. At December 31, 2001, the company did not have any put option obligations outstanding.*

Stock options to purchase 67,596,737 common shares in 2001, 34,633,343 common shares in 2000 and 27,355,056 common shares in 1999 were outstanding, but were not included in the computation of diluted earnings per share because the exercise price of the options was greater than the average market price of the common shares and, therefore, the effect would have been antidilutive. Net income applicable to common stockholders excludes preferred stock dividends of $10 million in 2001 and $20 million in both 2000 and 1999.

## s Rental Expense and Lease Commitments

Rental expense, including amounts charged to inventories and fixed assets and excluding amounts previously reserved, was $1,349 million in 2001, $1,366 million in 2000 and $1,397 million in 1999. The table below depicts gross minimum rental commitments under noncancelable leases, amounts related to vacant space associated with infrastructure reduction and restructuring actions taken through 1993 (previously reserved), and sublease income commitments.

These amounts reflect activities primarily related to office space as well as to manufacturing equipment.

| (dollars in millions) | 2002 | 2003 | 2004 | 2005 | 2006 | Beyond 2006 |
|---|---|---|---|---|---|---|
| Gross rental commitments | $ 1,378 | $ 1,129 | $ 798 | $ 625 | $ 437 | $ 1,367 |
| Vacant space | $ 121 | $ 75 | $ 47 | $ 42 | $ 25 | $ 90 |
| Sublease income commitments | $ 58 | $ 32 | $ 25 | $ 19 | $ 13 | $ 36 |

## t Stock-Based Compensation Plans

The company applies Accounting Principles Board (APB) Opinion No. 25, "Accounting for Stock Issued to Employees," and related Interpretations in accounting for its stock-based compensation plans. A description of the terms of the company's stock-based compensation plans follows:

### LONG-TERM PERFORMANCE PLANS

Incentive awards are provided to employees under the terms of the company's Long-Term Performance Plans ("the Plans"). The Plans are administered by the Executive Compensation and Management Resources Committee of the Board of Directors. The committee determines the type and terms of the awards to be granted, including vesting provisions.

Awards may include stock options, stock appreciation rights, restricted stock, cash or stock awards, or any combination thereof. The number of shares that may be issued under the Plans is 231.6 million. There were 193.4 million and 121.9 million unused shares available to be granted under the Plans at December 31, 2001 and 2000, respectively. Awards under the Plans resulted in compensation expense of $169.8 million, $134.0 million and $267.3 million in 2001, 2000 and 1999, respectively.

*Stock Option Grants*

Stock options are granted to employees at an exercise price equal to the fair market value of the company's stock at the date of grant. Generally, options vest 25 percent per year, are fully vested four years from the grant date and have a term of ten years.

The following tables summarize option activity under the Plans during 2001, 2000 and 1999:

| | **2001** | | 2000 | | 1999 | |
|---|---|---|---|---|---|---|
| | **Wtd. Avg. Exercise Price** | **No. of Shares Under Option** | Wtd. Avg. Exercise Price | No. of Shares Under Option | Wtd. Avg. Exercise Price | No. of Shares Under Option |
| Balance at January 1 | **$ 73** | **160,557,003** | $ 60 | 146,136,523 | $ 36 | 131,443,850 |
| Options granted | **110** | **43,410,364** | 102 | 42,601,014 | 115 | 42,786,845 |
| Options exercised | **37** | **(20,354,701)** | 35 | (18,243,347) | 28 | (23,160,228) |
| Options canceled/expired | **100** | **(5,656,176)** | 87 | (9,937,187) | 61 | (4,933,944) |
| Balance at December 31 | **$ 85** | **177,956,490** | $ 73 | 160,557,003 | $ 60 | 146,136,523 |
| Exercisable at December 31 | **$ 62** | **80,773,980** | $ 45 | 66,599,878 | $ 29 | 51,599,735 |

The shares under option at December 31, 2001, were in the following exercise price ranges:

| | Options Outstanding | | | Options Currently Exercisable | |
|---|---|---|---|---|---|
| Exercise Price Range | Wtd. Avg. Exercise Price | No. of Options | Wtd. Avg. Remaining Contractual Life (in years) | Wtd. Avg. Exercise Price | No. of Options |
| $ 12—50 | $ 28 | 35,220,555 | 4 | $ 28 | 34,918,554 |
| $ 51—90 | 63 | 38,048,214 | 6 | 60 | 24,215,708 |
| $ 91—110 | 104 | 53,168,401 | 9 | 105 | 9,934,212 |
| $ 111 and over | 122 | 51,519,320 | 9 | 131 | 11,705,506 |
| | $ 85 | 177,956,490 | 7 | $ 62 | 80,773,980 |

### IBM EMPLOYEES STOCK PURCHASE PLAN

The IBM Employees Stock Purchase Plan (ESPP) enables substantially all regular employees to purchase full or fractional shares of IBM common stock through payroll deductions of up to 10 percent of eligible compensation. Effective July 1, 2000, ESPP was amended whereby the share price paid by an employee changed from 85 percent of the average market price on the last business day of each pay period, to the lesser of 85 percent of the average market price on the first business day of each offering period or 85 percent of the average market price on the last business day of each pay period. The current plan provides semi-annual offerings over the five-year period commencing July 1, 2000. ESPP participants are restricted from purchasing more than $25,000 of common stock in one calendar year or 1,000 shares in an offering period. This change is not expected to have a significant effect on the company's financial condition. Approximately 16.5 million, 26.3 million and 57.3 million reserved unissued shares were available for purchase under ESPP at December 31, 2001, 2000 and 1999, respectively.

### PRO FORMA DISCLOSURE

In accordance with APB Opinion No. 25, the company does not recognize expense for stock options granted under the Plans or for employee stock purchases under the ESPP. SFAS No. 123, "Accounting for Stock-Based Compensation," requires a company to determine the fair market value of all awards of stock-based compensation at the grant date and to disclose pro forma net income and earnings per share as if the resulting stock-based compensation amounts were recorded in the Consolidated Statement of Earnings.

The table below presents these pro forma disclosures:

| | **2001** | | 2000 | | 1999 | |
|---|---|---|---|---|---|---|
| (dollars in millions except per share amounts) | **As Reported** | **Pro Forma** | As Reported | Pro Forma | As Reported | Pro Forma |
| Net income applicable to common stockholders | **$ 7,713** | **$ 6,474** | $ 8,073 | $ 7,183 | $ 7,692 | $ 7,044 |
| Earnings per share of common stock: | | | | | | |
| Assuming dilution | **$ 4.35** | **$ 3.69** | $ 4.44 | $ 3.99 | $ 4.12 | $ 3.78 |
| Basic | **$ 4.45** | **$ 3.74** | $ 4.58 | $ 4.07 | $ 4.25 | $ 3.89 |

The pro forma amounts that are disclosed in accordance with SFAS No. 123 reflect the portion of the estimated fair value of awards that was earned for the years ended December 31, 2001, 2000 and 1999.

The fair market value of stock option grants is estimated using the Black-Scholes option-pricing model with the following assumptions:

| | **2001** | 2000 | 1999 |
|---|---|---|---|
| Term (years)* | **4/5** | 4/5 | 5/6 |
| Volatility** | **37.7%** | 32.0% | 27.3% |
| Risk-free interest rate (zero coupon U.S. treasury note) | **4.4%** | 5.1% | 6.6% |
| Dividend yield | **0.5%** | 0.5% | 0.4% |
| Weighted-average fair value per option | **$ 42** | $ 36 | $ 46 |

* *Option term is 4 years for tax incentive options and 5 years for non-tax incentive options for the years ended December 31, 2001 and 2000. Option term is 5 years for tax incentive options and 6 years for non-tax incentive options for the year ended December 31, 1999.*

** *To determine volatility, the company measured the daily price changes of the stock over the respective term for tax incentive options and non-tax incentive options.*

## u Retirement-Related Benefits

IBM offers defined benefit pension plans, defined contribution pension plans and nonpension postretirement plans, primarily consisting of retiree medical benefits. These benefits form an important part of the company's total compensation and benefits program that is designed to attract and retain highly skilled and talented employees. The following table provides the total retirement-related benefit plans impact on income before income taxes.

| | U.S. | | | Non-U.S. | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| (dollars in millions) | **2001** | 2000 | 1999 | **2001** | 2000 | 1999 | **2001** | 2000 | 1999 |
| Total retirement-related plans—(income)/cost | **$ (256)** | $ (156) | $ 47 | **$ (181)** | $ (171) | $ 36 | **$ (437)** | $ (327) | $ 83 |
| Comprises: | | | | | | | | | |
| Defined benefit and contribution pension plans | **$ (632)** | $ (530) | $ (295) | **$ (209)** | $ (198) | $ 7 | **$ (841)** | $ (728) | $ (288) |
| Nonpension postretirement benefits | **376** | 374 | 342 | **28** | 27 | 29 | **404** | 401 | 371 |

See Management Discussion on pages 62 and 63 for additional discussion regarding the company's retirement-related benefits. Also see note a, "Significant Accounting Policies," pages 76 and 77 for the company's accounting policy regarding retirement-related benefits.

### DEFINED BENEFIT AND DEFINED CONTRIBUTION PLANS

The company and its subsidiaries have defined benefit and defined contribution pension plans that cover substantially all regular employees, and supplemental retirement plans that cover certain executives.

*U.S. Plans*

IBM provides U.S. regular, full-time and part-time employees with a noncontributory plan that is funded by company contributions to an irrevocable trust fund, which is held for the sole benefit of participants.

Effective January 1, 2001, the company increased pension benefits to certain recipients who retired before January 1, 1997. The increases range from 2.5 percent to 25 percent, and are based on the year of retirement and the pension benefit currently being received. This improvement resulted in an additional cost to the company of approximately $100 million in 2001.

Effective July 1, 1999, the company amended the IBM Retirement Plan to establish the IBM Personal Pension Plan (PPP). The new plan establishes a new formula for determining pension benefits for many of the company's employees. Under the amended PPP, a new formula was created whereby retirement benefits are credited to each employee's cash balance account monthly based on a percentage of the employee's pensionable compensation. Employees who were retirement eligible or within five years of retirement eligibility with at least one year of service, or who were at least forty years of age with at least ten years of service as of June 30, 1999, could elect to participate under the new formula or to have their service and earnings credit accrue under the preexisting benefit formula. Benefits become vested on the completion of five years of service under either formula.

The number of individuals receiving benefits from the PPP at December 31, 2001 and 2000, was 131,071 and 129,290, respectively. Net periodic pension income for this plan for the years ended December 31, 2001, 2000 and 1999, was $1,025 million, $896 million and $638 million, respectively. Although these pension income amounts represent a contribution to the company's income before income taxes, these amounts are partially offset by the costs of the company's other retirement-related plans (see table above). Moreover, these amounts have positive implications for the company's employees, retirees and shareholders. The returns that the fund has experienced over time have resulted in these benefits. Therefore, despite the recent downturn in the equity and financial markets, the trust funds continued to provide the capacity to meet their obligations to current and future retirees.

U.S. regular, full-time and part-time employees are eligible to participate in the Tax Deferred Savings Plan 401(k) (TDSP), which is a qualified voluntary defined contribution plan. The company matches 50 percent of the employee's contribution up to the first 6 percent of the employee's compensation. All contributions, including the company match, are made in cash in accordance with the participants' investment elections. There are no minimum amounts that must be invested in

company stock. The total cost of all of the company's U.S. defined contribution plans was $313 million, $294 million and $275 million for the years ended December 31, 2001, 2000 and 1999, respectively.

*Non-U.S. Plans*

Most subsidiaries and branches outside the U.S. have defined benefit and/or defined contribution retirement plans that cover substantially all regular employees, under which the company deposits funds under various fiduciary-type arrangements, purchases annuities under group contracts or provides reserves. Benefits under the defined benefit plans are typically based on years of service and the employee's compensation, generally during a fixed number of years immediately before retirement. The ranges of assumptions that are used for the non-U.S. defined benefit plans reflect the different economic environments within various countries. The total non-U.S. retirement plan (income)/cost of these plans for the years ended December 31, 2001, 2000 and 1999, was $(209) million, $(198) million and $7 million, respectively.

*U.S. Supplemental Executive Retention Plan*

The company also has a non qualified U.S. Supplemental Executive Retention Plan (SERP). The SERP, which is unfunded, provides defined pension benefits outside the IBM Retirement Plan to eligible executives, based on average earnings, years of service and age at retirement. Effective July 1, 1999, the company adopted the Supplemental Executive Retention Plan (which replaced the previous Supplemental Executive Retirement Plan). Some participants of the pre-existing SERP will still be eligible for benefits under that plan, but will not be eligible for the new plan. The total cost of this plan for the years ended December 31, 2001, 2000 and 1999, was $23 million, $24 million and $30 million, respectively. These amounts are reflected in Cost of other defined benefit plans below. At December 31, 2001 and 2000, the projected benefit obligation was $166 million and $163 million, respectively, and the amounts included in Other liabilities in the Consolidated Statement of Financial Position were pension liabilities of $151 million and $131 million, respectively.

*(Income)/Cost of Pension Plans:*

| | U.S. Plans | | | Non-U.S. Plans | | |
|---|---|---|---|---|---|---|
| (dollars in millions) | **2001** | 2000 | 1999 | **2001** | 2000 | 1999 |
| Service cost | **$ 613** | $ 563 | $ 566 | **$ 429** | $ 445 | $ 475 |
| Interest cost | **2,624** | 2,553 | 2,404 | **1,214** | 1,234 | 1,282 |
| Expected return on plan assets | **(4,202)** | (3,902) | (3,463) | **(2,062)** | (2,042) | (1,937) |
| Amortization of transition assets | **(140)** | (141) | (140) | **(10)** | (10) | (11) |
| Amortization of prior service cost | **80** | 31 | (21) | **28** | 24 | 25 |
| Recognized actuarial losses/(gains) | **—** | — | 16 | **(12)** | 4 | 28 |
| Settlement gains | **—** | — | — | **(12)** | (25) | (23) |
| Net periodic pension income—U.S. Plan and material non-U.S. Plans | **$ (1,025)** | $ (896) | $ (638) | **$ (425)** | $ (370) | $ (161) |
| Cost of other defined benefit plans | **80** | 72 | 68 | **54** | 23 | 37 |
| Total net periodic pension income for all defined benefit plans | **$ (945)** | $ (824) | $ (570) | **$ (371)** | $ (347) | $ (124) |
| Cost of defined contribution plans | **$ 313** | $ 294 | $ 275 | **$ 162** | $ 149 | $ 131 |
| Total retirement plan (income)/cost recognized in the Consolidated Statement of Earnings | **$ (632)** | $ (530) | $ (295) | **$ (209)** | $ (198) | $ 7 |

See beginning of note u, "Retirement-Related Benefits," on page 96 for the company's total retirement-related benefits (income)/cost.

The changes in the benefit obligations and plan assets of the U.S. and significant non-U.S. defined benefit plans for 2001 and 2000 were as follows:

| | U.S. Plan | | Non-U.S. Plans | |
|---|---|---|---|---|
| (dollars in millions) | **2001** | 2000 | **2001** | 2000 |
| Change in benefit obligation: | | | | |
| Benefit obligation at beginning of year | **$ 37,539** | $ 34,434 | **$ 21,150** | $ 21,770 |
| Service cost | **613** | 563 | **429** | 445 |
| Interest cost | **2,624** | 2,553 | **1,214** | 1,234 |
| Plan participants' contributions | **—** | — | **27** | 28 |
| Acquisitions/divestitures, net | **(29)** | 36 | **22** | (65) |
| Amendments | **—** | 645 | **8** | 63 |
| Actuarial losses | **457** | 1,729 | **1,101** | 243 |
| Benefits paid from trust | **(2,595)** | (2,421) | **(748)** | (728) |
| Direct benefit payments | **—** | — | **(198)** | (218) |
| Foreign exchange impact | **—** | — | **(1,184)** | (1,626) |
| Plan curtailments/settlements/termination benefits | **—** | — | **(20)** | 4 |
| Benefit obligation at end of year | **38,609** | 37,539 | **21,801** | 21,150 |
| Change in plan assets: | | | | |
| Fair value of plan assets at beginning of year | **44,594** | 45,584 | **24,833** | 27,843 |
| Actual return on plan assets | **(2,405)** | 1,395 | **(1,559)** | (196) |
| Employer contribution | **—** | — | **417** | 66 |
| Acquisitions/divestitures, net | **(29)** | 36 | **—** | (50) |
| Plan participants' contributions | **—** | — | **27** | 28 |
| Benefits paid from trust | **(2,595)** | (2,421) | **(748)** | (728) |
| Foreign exchange impact | **—** | — | **(1,376)** | (2,015) |
| Settlements | **—** | — | **(63)** | (115) |
| Fair value of plan assets at end of year | **39,565** | 44,594 | **21,531** | 24,833 |
| Fair value of plan assets in excess of benefit obligation | **956** | 7,055 | **(270)** | 3,683 |
| Unrecognized net actuarial losses/(gains) | **4,297** | (2,768) | **2,871** | (1,860) |
| Unrecognized prior service costs | **803** | 883 | **140** | 168 |
| Unrecognized net transition asset | **(351)** | (491) | **(42)** | (56) |
| Adjustment to recognize non-U.S. minimum liability | **—** | — | **(462)** | (90) |
| Net prepaid pension asset recognized in the Consolidated Statement of Financial Position | **$ 5,705** | $ 4,679 | **$ 2,237** | $ 1,845 |

Actuarial assumptions used to determine costs and benefit obligations for principal pension plans follow:

| | U.S. Plan | | | Non-U.S. Plans | | |
|---|---|---|---|---|---|---|
| WEIGHTED-AVERAGE ACTUARIAL ASSUMPTIONS AS OF DECEMBER 31: | **2001** | 2000 | 1999 | **2001** | 2000 | 1999 |
| Discount rate | **7.0%** | 7.25% | 7.75% | **4.5-7.1%** | 4.5-7.1% | 4.5-7.3% |
| Expected return on plan assets | **10.0%** | 10.0% | 9.5% | **5.0-10.0%** | 5.0-11.0% | 6.0-10.5% |
| Rate of compensation increase | **6.0%** | 6.0% | 6.0% | **2.0-6.1%** | 2.6-6.1% | 2.6-6.1% |

The company evaluates its actuarial assumptions on an annual basis and considers changes in these long-term factors based upon market conditions and the requirements of SFAS No. 87, "Employers' Accounting for Pensions."

The change in the discount rate for the 2001 U.S. plan year had an effect of an additional $9 million of net retirement plan cost for the year ended December 31, 2001. The change in expected return on plan assets and the discount rate for the 2000 U.S. plan year had an effect of an additional $195 million and $26 million of net retirement plan income, respectively, for the year ended December 31, 2000. This compares with an additional $46 million and $65 million of net retirement plan cost for the year ended December 31, 1999, as a result of plan year 1999 changes in the rate of compensation increase and the discount rate, respectively.

*Funding Policy*

It is the company's practice to fund amounts for pensions sufficient to meet the minimum requirements set forth in applicable employee benefits laws and local tax laws. From time to time, the company contributes additional amounts as it deems appropriate. Liabilities for amounts in excess of these funding levels are accrued and reported in the company's Consolidated Statement of Financial Position. The assets of the various plans include corporate equities, government securities, corporate debt securities and real estate.

*Other*

As described earlier in this note, the company provides defined benefit pension plans in a number of countries. Page 98 includes an aggregation of the significant non-U.S. plans. SFAS No. 132, "Employers' Disclosures about Pensions and Other Postretirement Benefits," requires that companies disclose the aggregate benefit obligation (BO) and plan assets of all plans in which the BO exceeds plan assets. Similar disclosure is required for all plans in which the accumulated benefit obligation (ABO) exceeds plan assets. BO reflects the present value of the pension obligation assuming salary increases and is included in the table on the top of page 98. The ABO reflects this obligation based upon current salary levels (i.e., no salary increases). Accordingly, the ABO is a subset of the BO and the plans listed under the Plans with an ABO in excess of plan assets are also included in the amounts for Plans with a BO in excess of plan assets. The aggregate BO and plan assets are also disclosed for plans in which the plan assets exceed the BO.

| | **2001** | | 2000 | |
|---|---|---|---|---|
| (dollars in millions) | **Benefit Obligation** | **Plan Assets** | Benefit Obligation | Plan Assets |
| Plans with BO in excess of plan assets | **$ 12,358** | **$ 10,929** | $ 4,209 | $ 3,919 |
| Plans with ABO in excess of plan assets | **$ 3,041** | **$ 2,636** | $ 530 | $ 400 |
| Plans with assets in excess of BO | **$ 9,443** | **$ 10,602** | $ 16,941 | $ 20,915 |

## NONPENSION POSTRETIREMENT BENEFITS

The total cost of the company's nonpension postretirement benefits for the years ended December 31, 2001, 2000 and 1999, were $404 million, $401 million and $371 million, respectively. The company has a defined benefit postretirement plan that provides medical, dental and life insurance for U.S. retirees and eligible dependents. The total cost of this plan for the years ended December 31, 2001, 2000 and 1999, was $376 million, $374 million and $342 million, respectively. Effective July 1, 1999, the company established a "Future Health Account (FHA) Plan" for employees who were more than five years away from retirement eligibility. Employees who were within five years of retirement eligibility are covered under the company's prior retiree health benefits plan. Under either the FHA or the preexisting plan, there is a maximum cost to the company for retiree health care. For employees who retired before January 1, 1992, that maximum became effective in 2001. For all other employees, the maximum is effective upon retirement.

Certain of the company's non-U.S. subsidiaries have similar plans for retirees. However, most of the retirees outside the U.S. are covered by government-sponsored and administered programs. The total cost of these plans for the years ended December 31, 2001, 2000 and 1999, was $28 million, $27 million and $29 million, respectively. At December 31, 2001 and 2000, Other liabilities in the Consolidated Statement of Financial Position include non-U.S. postretirement benefit liabilities of $200 million and $208 million, respectively.

The net periodic postretirement benefit cost for the U.S. plan for the years ended December 31 include the following components:

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| Service cost | **$ 65** | $ 50 | $ 48 |
| Interest cost | **437** | 449 | 424 |
| Expected return on plan assets | **—** | (2) | (6) |
| Amortization of prior service costs | **(148)** | (147) | (143) |
| Recognized actuarial losses | **22** | 24 | 19 |
| Net periodic post-retirement benefit cost | **$ 376** | $ 374 | $ 342 |

The changes in the benefit obligation and plan assets of the U.S. plan for 2001 and 2000 are as follows:

| (dollars in millions) | **2001** | 2000* |
|---|---|---|
| Change in benefit obligation: | | |
| Benefit obligation at beginning of year | **$ 6,443** | $ 6,178 |
| Service cost | **65** | 50 |
| Interest cost | **437** | 449 |
| Actuarial (gains)/losses | **(183)** | 363 |
| Participant contributions | **71** | 23 |
| Benefits paid from trust | **(68)** | (110) |
| Direct benefit payments | **(617)** | (510) |
| Benefit obligation at end of year | **6,148** | 6,443 |
| Change in plan assets: | | |
| Fair value of plan assets at beginning of year | **4** | 105 |
| Actual return on plan assets | **1** | (14) |
| Participant contributions | **71** | 23 |
| Benefits paid | **(68)** | (110) |
| Fair value of plan assets at end of year | **8** | 4 |
| Benefit obligation in excess of plan assets | **(6,140)** | (6,439) |
| Unrecognized net actuarial losses | **781** | 986 |
| Unrecognized prior service costs | **(653)** | (801) |
| Accrued postretirement benefit liability recognized in the Consolidated Statement of Financial Position | **$ (6,012)** | $ (6,254) |

** Reclassified to conform with 2001 presentation.*

The plan assets primarily comprise short-term fixed-income investments.

The benefit obligation was determined by applying the terms of medical, dental and life insurance plans, including the effects of established maximums on covered costs, together with relevant actuarial assumptions. These actuarial assumptions include a projected health care cost trend rate of 6 percent. The projected health care cost trend rate assumption is projected to increase to 10 percent in 2002, and is assumed to decrease gradually to 5 percent by 2007 and remain constant thereafter.

| WEIGHTED-AVERAGE ACTUARIAL ASSUMPTIONS FOR NON-PENSION POSTRETIREMENT BENEFIT PLANS AS OF DECEMBER 31: | **2001** | 2000 | 1999 |
|---|---|---|---|
| Discount rate | **7.00%** | 7.25% | 7.75% |
| Expected return on plan assets | **5.0%** | 5.0% | 5.0% |

The company evaluates its actuarial assumptions on an annual basis and considers changes in these long-term factors based upon market conditions and the requirements of SFAS No. 106, "Employers' Accounting for Postretirement Benefits Other Than Pensions." The discount rate changes did not have a material effect on net postretirement benefit cost for the years ended December 31, 2001, 2000 and 1999.

The health care cost trend rate has an insignificant effect on plan costs and obligations. A one-percentage-point change in the assumed health care cost trend rate would have the following effects at December 31, 2001:

| (dollars in millions) | One-Percentage-Point Increase | One-Percentage-Point Decrease |
|---|---|---|
| Effect on total service and interest cost | $ 6 | $ (6) |
| Effect on postretirement benefit obligation | $ 24 | $ (29) |

## v Segment Information

IBM uses advanced I/T to provide customer solutions. The company operates primarily in a single industry using several segments that create value by offering a variety of solutions that include, either singularly or in some combination, technologies, systems, products, services, software and financing.

Organizationally, the company's major operations comprise a Global Services segment; three hardware product segments—Enterprise Systems, Personal and Printing Systems, and Technology; a Software segment; a Global Financing segment; and an Enterprise Investments segment. The segments are determined based on several factors, including customer base, homogeneity of products, technology and delivery channels.

The Global Services segment is the world's largest I/T services provider, supporting computer hardware and software products and providing professional services to help customers of all sizes realize the full value of I/T. The segment provides value through three primary lines of business: Strategic Outsourcing Services, BIS and Integrated Technology Services. Strategic Outsourcing Services creates business value through long-term strategic partnerships with

customers by taking on responsibility for their processes and systems. BIS provides business/industry consulting and end-to-end e-business implementation of such offerings as Supply Chain Management, Customer Relationship Management, Enterprise Resource Planning and Business Intelligence. Integrated Technology Services offers customers a single I/T partner to manage multivendor I/T systems' complexity in today's e-business environment including such traditional offerings as Product Support, Business Recovery Services, Site and Connectivity Services, and Systems Management and Networking Services. Learning Services supports the three primary lines of business and helps customers design, develop and deploy curricula to educate their employees. The Global Services segment is uniquely suited to integrate the full range of the company's and key industry participants' capabilities, including hardware, software, services and research.

The Enterprise Systems segment produces powerful multipurpose computer servers that operate many open-network-based applications simultaneously for multiple users. They perform high-volume transaction processing and serve data to personal systems and other end-user devices. The servers are the engines behind the bulk of electronic business transactions, including e-commerce. Brands include the zSeries mainframe servers, the heart of the e-business infrastructure for mission-critical data and transaction processing, the pSeries servers, the most powerful technologically advanced UNIX servers, the iSeries mid-range servers, integrated mid-range business servers that run sophisticated business applications and the Intel-based xSeries servers. The segment also includes system-level product businesses such as the company's disk storage products, including the Enterprise Storage Server known as "Shark," tape subsystems and the company's storage area networking products.

In the first quarter of 2001, the company reorganized the Personal Systems segment and renamed it the Personal and Printing Systems segment. In accordance with the organizational change, the company transferred the Printing Systems Division from the Technology segment to the Personal and Printing Systems segment. In addition, the xSeries (Intel-based) servers were transferred to the Enterprise Systems segment from the Personal Systems segment. The Personal and Printing Systems segment produces general-purpose computer systems, advanced function printers, and point-of-sale solutions. Major business units include Personal Computers, Retail Store Solutions, and Printing Systems. Major brands include ThinkPad mobile systems and NetVista.

The Technology segment provides components such as semiconductors and HDDs for use in the company's products and for sale to original equipment manufacturers (OEM). Major business units include Microelectronics and Storage Technology.

The Software segment delivers operating systems for the company's servers and e-business enabling software (middleware) for IBM and non-IBM platforms. The segment's business offerings align with key customer opportunity areas—transformation and integration, leveraging information, organizational effectiveness and managing technology. In addition to its own development, product and marketing effort, the segment supports 56,000 business partners to ensure that the company's software and hardware offerings are included in their solutions.

The Global Financing segment is the world's largest provider of financing services for I/T. The segment provides lease and loan financing that enables the company's customers to acquire complete I/T and e-business solutions—hardware, software and services—provided by the company and its business partners. Global Financing, as a reliable source of capital for the distribution channel, also provides the company's business partners with customized commercial financing for inventory, accounts receivable and term loans, helping them manage their cash flow, invest in infrastructure and grow their business. Global Financing also selectively participates in syndicated loan activities.

The Enterprise Investments segment provides industry-specific I/T solutions, supporting the Hardware, Software and Global Services segments of the company. The segment develops unique products designed to meet specific marketplace requirements and to complement the company's overall portfolio of products. Enterprise Investments revenue is primarily derived from the sale of software products.

Segment revenue and pre-tax income include transactions between the segments that are intended to reflect an arm's-length transfer price. Specifically, semiconductors and HDDs are sourced internally from the Technology segment for use in the manufacture of the Enterprise Systems segment and Personal and Printing Systems segment products. In addition, technology, hardware and software that are used by the Global Services segment in outsourcing engagements are mostly sourced internally from the Enterprise Systems, Personal and Printing Systems and Software segments. For the internal use of I/T services, the Global Services segment recovers cost, as well as a reasonable fee reflecting the arm's-length value of providing the services. The Global Services segment enters into arm's-length leases at prices equivalent to market rates with the Global Financing segment to facilitate the acquisition of equipment used in outsourcing engagements. Generally, all internal transaction prices are reviewed and reset annually if appropriate.

The company uses shared-resources concepts to realize economies of scale and efficient use of resources. Thus, a

considerable amount of expense is shared by all of the company's segments. This expense represents sales coverage, marketing and support functions such as Accounting, Treasury, Procurement, Legal, Human Resources, and Billing and Collections. Where practical, shared expenses are allocated based on measurable drivers of expense, e.g., headcount. When a clear and measurable driver cannot be identified, shared expenses are allocated on a financial basis that is consistent with the company's management system; e.g., image advertising is allocated based on the gross profit of the segments. The unallocated corporate amounts arising from certain acquisitions, indirect infrastructure reductions and certain intellectual property income are recorded in net income but are not allocated to the segments.

The following tables reflect the results of the segments consistent with the company's management system. These results are not necessarily a depiction that is in conformity with generally accepted accounting principles; e.g., employee retirement plan costs are developed using actuarial assumptions on a country-by-country basis and allocated to the segments on headcount. Different amounts could result if actuarial assumptions that are unique to the segment were used. Performance measurement is based on income before income taxes (pre-tax income). These results are used, in part, by management, both in evaluating the performance of, and in allocating resources to, each of the segments. The results for 2000 and 1999 have been reclassified to reflect the organizational changes and product transfers made in 2001.

*Management System Segment View*

| | | Hardware | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (dollars in millions) | Global Services | Enterprise Systems | Personal and Printing Systems | Technology | Software | Global Financing | Enterprise Investments | Total Segments |
| **2001:** | | | | | | | | |
| **External revenue** | **$ 34,956** | **$ 13,743** | **$ 11,982** | **$ 7,970** | **$ 12,939** | **$ 3,407** | **$ 1,118** | **$ 86,115** |
| **Internal revenue** | **2,647** | **710** | **73** | **2,325** | **981** | **836** | **4** | **7,576** |
| **Total revenue** | **$ 37,603** | **$ 14,453** | **$ 12,055** | **$ 10,295** | **$ 13,920** | **$ 4,243** | **$ 1,122** | **$ 93,691** |
| **Pre-tax income/(loss)** | **$ 5,161** | **$ 1,830** | **$ (153)** | **$ (374)** | **$ 3,168** | **$ 1,143** | **$ (317)** | **$ 10,458** |
| **Revenue year-to-year change** | **5.7%** | **(2.6)%** | **(20.5)%** | **(10.7)%** | **3.7%** | **(4.5)%** | **(18.2)%** | **(2.8)%** |
| **Pre-tax income year-to-year change** | **14.3%** | **(4.8)%** | **(251.5)%** | **(155.1)%** | **13.4%** | **(2.8)%** | **(6.7)%** | **(4.0)%** |
| **Pre-tax income margin** | **13.7%** | **12.7%** | **(1.3)%** | **(3.6)%** | **22.8%** | **26.9%** | **(28.3)%** | **11.2%** |
| 2000*: | | | | | | | | |
| External revenue | $ 33,152 | $ 14,194 | $ 15,098 | $ 8,519 | $ 12,598 | $ 3,500 | $ 1,369 | $ 88,430 |
| Internal revenue | 2,439 | 649 | 70 | 3,007 | 828 | 944 | 3 | 7,940 |
| Total revenue | $ 35,591 | $ 14,843 | $ 15,168 | $ 11,526 | $ 13,426 | $ 4,444 | $ 1,372 | $ 96,370 |
| Pre-tax income/(loss) | $ 4,517 | $ 1,922 | $ 101 | $ 679 | $ 2,793 | $ 1,176 | $ (297) | $ 10,891 |
| Revenue year-to-year change | 2.2% | 3.1% | (3.0)% | (2.3)% | 0.0% | 9.6% | (17.8)% | 0.6% |
| Pre-tax income year-to-year change | 1.2% | 21.3% | 304.0% | 51.2% | (9.9)% | 12.3% | 57.4% | 9.2% |
| Pre-tax income margin | 12.7% | 12.9% | 0.7% | 5.9% | 20.8% | 26.5% | (21.6)% | 11.3% |
| 1999*: | | | | | | | | |
| External revenue | $ 32,172 | $ 13,834 | $ 15,593 | $ 8,026 | $ 12,662 | $ 3,219 | $ 1,651 | $ 87,157 |
| Internal revenue | 2,636 | 568 | 45 | 3,774 | 767 | 835 | 19 | 8,644 |
| Total revenue | $ 34,808 | $ 14,402 | $ 15,638 | $ 11,800 | $ 13,429 | $ 4,054 | $ 1,670 | $ 95,801 |
| Pre-tax income/(loss) | $ 4,464 | $ 1,584 | $ 25 | $ 449 | $ 3,099 | $ 1,047 | $ (697) | $ 9,971 |
| Pre-tax income margin | 12.8% | 11.0% | 0.2% | 3.8% | 23.1% | 25.8% | (41.7)% | 10.4% |

** Reclassified to conform with 2001 presentation.*

RECONCILIATIONS TO IBM AS REPORTED

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| REVENUE: | | | |
| Total reportable segments | **$ 93,691** | $ 96,370 | $ 95,801 |
| Other revenue and adjustments | **(249)** | (34) | 391 |
| Elimination of internal revenue | **(7,576)** | (7,940) | (8,644) |
| Total IBM consolidated | **$ 85,866** | $ 88,396 | $ 87,548 |

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| PRE-TAX INCOME: | | | |
| Total reportable segments | **$ 10,458** | $ 10,891 | $ 9,971 |
| Elimination of internal transactions | **108** | 62 | (47) |
| Sale of Global Network | **—** | — | 4,057 |
| 1999 actions | **—** | — | (2,205) |
| Unallocated corporate amounts | **387** | 581 | (19) |
| Total IBM consolidated | **$ 10,953** | $ 11,534 | $ 11,757 |

IMMATERIAL ITEMS

*Investment in Equity Alliances and Equity Alliances Gains/Losses*
The investments in equity alliances and the resulting gains and losses from these investments that are attributable to the segments do not have a significant effect on the financial position or the financial results of the segments.

SEGMENT ASSETS AND OTHER ITEMS

The Global Services assets primarily are accounts receivable, maintenance inventory, and plant, property and equipment including those associated with the segment's outsourcing business. The assets of the Hardware segments primarily are inventory and plant, property and equipment. The Software segment assets mainly are plant, property and equipment, and investment in capitalized software.

To accomplish the efficient use of the company's space and equipment, it usually is necessary for several segments to share plant, property and equipment assets. Where assets are shared, landlord ownership of the assets is assigned to one segment and is not allocated to each user segment. This is consistent with the company's management system and is reflected accordingly in the schedule on page 104. In those cases, there will not be a precise correlation between segment pre-tax income and segment assets.

Similarly, the depreciation amounts reported by each segment are based on the assigned landlord ownership and may not be consistent with the amounts that are included in the segments' pre-tax income. The amounts that are included in pre-tax income reflect occupancy charges from the landlord segment and are not specifically identified by the management reporting system.

Capital expenditures that are reported by each segment also are in line with the landlord ownership basis of asset assignment.

The Global Financing segment amounts on page 104 for Interest income and Cost of Global Financing interest expense reflect the interest income and interest expense associated with the Global Financing business, as well as the income from the investment in cash and marketable securities. The reconciliation and explanation of the difference between Cost of Global Financing and Interest expense for segment presentation versus presentation on the Statement of Consolidated Earnings are included on pages 66 and 67 of the Management Discussion.

The segment information for 2000 and 1999 has been reclassified to reflect the organizational changes and product transfers between the segments in 2001.

*Management System Segment View*

| (dollars in millions) | Global Services | Hardware: Enterprise Systems | Hardware: Personal and Printing Systems | Hardware: Technology | Software | Global Financing | Enterprise Investments | Total Segments |
|---|---|---|---|---|---|---|---|---|
| **2001:** | | | | | | | | |
| **Assets** | **$ 10,340** | **$ 3,208** | **$ 1,904** | **$ 9,136** | **$ 3,356** | **$ 36,670** | **$ 106** | **$ 64,720** |
| **Depreciation/amortization** | **1,219** | **308** | **131** | **1,105** | **782** | **2,476** | **8** | **6,029** |
| **Capital expenditures/ investment in software** | **1,519** | **390** | **128** | **1,855** | **839** | **3,143** | **7** | **7,881** |
| **Interest income** | **—** | **—** | **—** | **—** | **—** | **2,941** | **—** | **2,941** |
| **Cost of Global Financing interest expense** | **—** | **—** | **—** | **—** | **—** | **1,140** | **—** | **1,140** |
| 2000*: | | | | | | | | |
| Assets | $ 10,492 | $ 3,451 | $ 2,448 | $ 9,316 | $ 2,488 | $ 40,822 | $ 246 | $ 69,263 |
| Depreciation/amortization | 1,243 | 425 | 154 | 1,060 | 665 | 2,696 | 12 | 6,255 |
| Capital expenditures/ investment in software | 1,311 | 325 | 180 | 1,744 | 770 | 2,898 | 9 | 7,237 |
| Interest income | — | — | — | — | — | 3,051 | — | 3,051 |
| Cost of Global Financing interest expense | — | — | — | — | — | 1,319 | — | 1,319 |
| 1999*: | | | | | | | | |
| Assets | $ 9,312 | $ 3,788 | $ 1,691 | $ 9,187 | $ 2,527 | $ 39,686 | $ 369 | $ 66,560 |
| Depreciation/amortization | 1,259 | 234 | 149 | 2,077 | 576 | 2,976 | 15 | 7,286 |
| Capital expenditures/ investment in software | 1,292 | 363 | 163 | 1,792 | 656 | 3,217 | 12 | 7,495 |
| Interest income | — | — | — | — | — | 2,961 | — | 2,961 |
| Cost of Global Financing interest expense | — | — | — | — | — | 1,232 | — | 1,232 |

** Reclassified to conform with 2001 presentation.*

## RECONCILIATIONS TO IBM AS REPORTED

| (dollars in millions) | **2001** | 2000 | 1999 |
|---|---|---|---|
| Assets: | | | |
| Total reportable segments | **$ 64,720** | $ 69,263 | $ 66,560 |
| Elimination of internal transactions | **(4,884)** | (5,300) | (5,776) |
| Unallocated amounts: | | | |
| Cash and marketable securities | **5,313** | 2,268 | 4,563 |
| Notes and accounts receivable | **2,810** | 3,145 | 2,658 |
| Deferred tax assets | **4,624** | 5,498 | 5,428 |
| Plant, other property and equipment | **3,260** | 3,798 | 4,161 |
| Pension assets | **9,408** | 6,809 | 5,636 |
| Other | **3,062** | 2,868 | 4,265 |
| Total IBM consolidated | **$ 88,313** | $ 88,349 | $ 87,495 |

### REVENUE BY CLASSES OF SIMILAR PRODUCTS OR SERVICES

For the Personal and Printing Systems, Software and Global Financing segments, the segment data on page 102 represents the revenue contributions from the products that are contained in the segments and that are basically similar in nature. The following table provides external revenue for similar classes of products within the Technology, Enterprise Systems and Global Services segments. The Technology segment's OEM hardware comprises revenue primarily from the sale of HDD storage files, semiconductors and display devices. Other technology is primarily design services for OEM customers. The Enterprise Systems segment's storage comprises revenue from the Enterprise Storage Server ("Shark"), other disk storage products and tape subsystems.

| | Consolidated | | |
|---|---|---|---|
| (dollars in millions) | **2001** | 2000* | 1999* |
| Technology: | | | |
| OEM | **$ 7,624** | $ 8,229 | $ 7,740 |
| Other technology | **346** | 290 | 286 |
| Enterprise Systems: | | | |
| Servers | **$ 10,947** | $ 11,497 | $ 11,024 |
| Storage | **2,755** | 2,539 | 2,381 |
| Networking products | **41** | 158 | 429 |
| Global Services: | | | |
| Services | **$ 29,953** | $ 28,036 | $ 27,035 |
| Maintenance | **5,003** | 5,116 | 5,137 |

** Reclassified to conform with 2001 presentation.*

### MAJOR CUSTOMERS

No single customer represents 10 percent or more of the company's total revenue.

### GEOGRAPHIC INFORMATION

| | Revenue* | | | Long-lived Assets** | | |
|---|---|---|---|---|---|---|
| (dollars in millions) | **2001** | 2000 | 1999 | **2001** | 2000 | 1999 |
| United States | **$ 35,215** | $ 37,216 | $ 37,171 | **$ 23,028** | $ 21,449 | $ 19,309 |
| Japan | **11,514** | 12,128 | 10,411 | **4,034** | 4,319 | 4,710 |
| Other countries | **39,137** | 39,052 | 39,966 | **9,572** | 10,029 | 10,259 |
| Total | **$ 85,866** | $ 88,396 | $ 87,548 | **$ 36,634** | $ 35,797 | $ 34,278 |

** Revenue is attributed to countries based on location of customer.*

*** Includes all non current assets except non current financial instruments and deferred tax assets.*

## Five-Year Comparison of Selected Financial Data

(dollars in millions except per share amounts)

| FOR THE YEAR: | 2001 | 2000 | 1999 | 1998 | 1997 |
|---|---|---|---|---|---|
| Revenue | **$ 85,866** | $ 88,396 | $ 87,548 | $ 81,667 | $ 78,508 |
| Net income | **7,723** | 8,093 | 7,712 | 6,328 | 6,093 |
| Per share of common stock: | | | | | |
| Assuming dilution | **4.35** | 4.44 | 4.12 | 3.29 | 3.00 |
| Basic | **4.45** | 4.58 | 4.25 | 3.38 | 3.09 |
| Cash dividends paid on common stock | **956** | 909 | 859 | 814 | 763 |
| Per share of common stock | **.55** | .51 | .47 | .43 | .3875 |
| Investment in plant, rental machines and other property | **5,660** | 5,616 | 5,959 | 6,520 | 6,793 |
| Return on stockholders' equity | **35.1%** | 39.7% | 39.0% | 32.6% | 29.7% |
| AT END OF YEAR: | | | | | |
| Total assets | **$ 88,313** | $ 88,349 | $ 87,495 | $ 86,100 | $ 81,499 |
| Net investment in plant, rental machines and other property | **16,504** | 16,714 | 17,590 | 19,631 | 18,347 |
| Working capital | **7,342** | 7,474 | 3,577 | 5,533 | 6,911 |
| Total debt | **27,151** | 28,576 | 28,354 | 29,413 | 26,926 |
| Stockholders' equity | **23,614** | 20,624 | 20,511 | 19,433 | 19,816 |

## Selected Quarterly Data

(dollars in millions except per share amounts and stock prices)

| | | | | Per Share of Common Stock | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Earnings | | | Stock Prices† | |
| | Revenue | Gross Profit | Net Income | Assuming Dilution | Basic | Dividends | High | Low |
| **2001** | | | | | | | | |
| **First quarter** | **$ 21,044** | **$ 7,608** | **$ 1,750** | **$ .98** | **$ 1.00** | **$ .13** | **$ 118.64** | **$ 83.75** |
| **Second quarter** | **21,568** | **8,038** | **2,045** | **1.15** | **1.17** | **.14** | **119.90** | **90.05** |
| **Third quarter** | **20,428** | **7,391** | **1,595** | **0.90** | **0.92** | **.14** | **115.40** | **87.49** |
| **Fourth quarter** | **22,826** | **8,745** | **2,333** | **1.33** | **1.35** | **.14** | **124.70** | **91.34** |
| **Total** | **$ 85,866** | **$ 31,782** | **$ 7,723** | **$ 4.35**** | **$ 4.45**** | **$ .55** | | |
| 2000* | | | | | | | | |
| First quarter | $ 19,348 | $ 6,934 | $ 1,519 | $ .83 | $ .85 | $ .12 | $ 128.25 | $ 99.50 |
| Second quarter | 21,651 | 7,863 | 1,941 | 1.06 | 1.10 | .13 | 126.94 | 101.25 |
| Third quarter | 21,781 | 7,704 | 1,963 | 1.08 | 1.11 | .13 | 134.94 | 100.00 |
| Fourth quarter | 25,616 | 9,553 | 2,670 | 1.48 | 1.52 | .13 | 119.63 | 80.06 |
| Total | $ 88,396 | $ 32,054 | $ 8,093 | $ 4.44* | $ 4.58 | $ .51 | | |

** Reclassified to conform with 2001 presentation.*

*** Earnings Per Share (EPS) in each quarter is computed using the weighted-average number of shares outstanding during that quarter while EPS for the full year is computed using the weighted-average number of shares outstanding during the year. Thus, the sum of the four quarters' EPS does not equal the full-year EPS.*

† *The stock prices reflect the high and low prices for IBM's common stock on the New York Stock Exchange composite tape for the last two years.*

# Stockholder Information

**INTERNATIONAL BUSINESS MACHINES CORPORATION**
*and Subsidiary Companies*

### IBM STOCKHOLDER SERVICES

*Stockholders with questions about their accounts should contact:*
EquiServe Trust Company, N.A.
Mail Suite 4688
P.O. Box 2530
Jersey City, New Jersey 07303-2530
(888) IBM-6700

Investors residing outside the United States, Canada and Puerto Rico should call (201) 324-0218.

Stockholders can also reach EquiServe Trust Company, N.A. via e-mail at: ibm@equiserve.com

Hearing-impaired stockholders with access to a telecommunications device (TDD) can communicate directly with EquiServe Trust Company, N.A., by calling (800) 490-1493. Stockholders residing outside the United States, Canada and Puerto Rico should call (201) 222-4489.

### IBM ON THE INTERNET

Topics featured in this Annual Report can be found via the IBM home page on the Internet (http://www.ibm.com). Financial results, news on IBM products, services and other activities can also be found via that address. Stockholders of record can receive online account information and answers to frequently asked questions regarding stockholder accounts via the internet (http://www.ibm.com/investor).

Stockholders of record can also consent to receive future IBM Annual Reports and Proxy Statements online through the Internet at this site.

### IBM INVESTOR SERVICES PROGRAM

The Investor Services Program brochure outlines a number of services provided for IBM stockholders and potential IBM investors, including the reinvestment of dividends, direct purchase and the deposit of IBM stock certificates for safekeeping. Call (888) 421-8860 for a copy of the brochure. Investors residing outside the United States, Canada and Puerto Rico should call (201) 324-0218.

*Investors with other requests may write to:*
IBM Corporation
Stockholder Relations
New Orchard Road
Armonk, New York 10504

### IBM STOCK

IBM common stock is listed on the New York Stock Exchange, on other exchanges in the United States and around the world.

### ANNUAL MEETING

The IBM Annual Meeting of Stockholders will be held on Tuesday, April 30, 2002, at 10 a.m. at the Kentucky International Convention Center, 221 Fourth Street, Louisville, Kentucky.

### STOCKHOLDER COMMUNICATIONS

Stockholders in the United States and Canada can get quarterly financial results, listen to a summary of the Annual Meeting remarks and hear voting results from the meeting by calling (800) IBM-7800. Callers can also request printed copies of the information via mail or fax. Stockholders residing outside the United States, Canada and Puerto Rico should call (402) 573-9861.

### LITERATURE FOR IBM STOCKHOLDERS

*The following literature on IBM is available without charge from:*
EquiServe Trust Company, N.A.
Mail Suite 4688
P.O. Box 2530
Jersey City, New Jersey 07303-2530
(888) IBM-6700

Investors residing outside the United States, Canada and Puerto Rico should call (201) 324-0218.

The Form 10-K Annual Report and Form 10-Q Quarterly Reports to the SEC provide additional information on IBM's business. The 10-K report is released in March; 10-Q reports are released in May, August and November.

An audio cassette recording of the 2001 Annual Report will be available for sight-impaired stockholders in June.

"IBM Environment and Well-Being: Progress Report" reports on IBM's health and safety, environmental and energy programs.

"Valuing Diversity: An Ongoing Commitment" communicates to the company's entire community of employees, customers, stockholders, vendors, suppliers, business partners and employment applicants the importance IBM places on the diversity of the company's workplace and marketplace.

### GENERAL INFORMATION

For answers to general questions about IBM from within the continental United States, call (800) IBM-4YOU. From outside the United States, call (404) 238-1234.

### CORPORATE OFFICES

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*and Subsidiary Companies*

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