IBM HIGHLIGHTS, 1996 - 2002

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1996

Business Performance

IBM revenue reaches $75.94 billion, an increase of six percent over 1995, and earnings grow by nearly 30 percent to $5.42 billion. There are 240,615 employees and 622,594 stockholders at year end.

Speaking in Atlanta to a group of shareholders, analysts and reporters at the corporation's annual meeting, IBM chairman Louis V. Gerstner, Jr., discusses IBM's condition, prospects for growth and the importance of network computing to the company's future.

IBM reaches agreement with the United States Department of Justice to terminate within five years all remaining provisions of the Consent Decree first entered into by IBM and the U.S. government in 1956.

Organization

IBM forms the Network Computer Division in November. The company says it will operate its worldwide services business under a single brand: IBM Global Services. IBM puts its industry-specific business units on a single global general manager.

IBM and Tivoli Systems Inc. enter a merger agreement. Tivoli is a leading provider of systems management software and services for distributed client/server networks of personal computers and workstations. IBM's acquisition of Tivoli extends the company's strength in host-based systems management to multiplatform distributed systems.

IBM and Edmark Corporation, a developer and publisher of consumer and education software, complete a merger in December. IBM acquires The Wilkerson Group, one of the world's oldest and largest consulting firms dedicated to the pharmaceutical and medical products industry.

Products & Services

IBM introduces in September its third generation of microprocessor-based mainframes, the S/390 Parallel Enterprise Server. With twice the performance of IBM's previous high-end S/390 CMOS servers, it can be linked to other S/390 systems to deliver more than 10,000 MIPS. At the same time, IBM also launches the System/390 Multiprise 2000 line, designed specifically for customers who need more flexible networking capabilities and computing power. Shipments of mainframe power grow 50 percent during the year.

IBM announces in February the RS/6000 Model F30 server to support World Wide Web home pages and other applications, and in June, the company rolls out enhanced RS/6000 Internet POWERsolution Web Servers, new Internet POWERsolution Firewall and Proxy Servers, and new Internet Commercial Application Servers. The following month, three new RS/6000 servers debut — Models G40, J40 and R40 — using symmetric multiprocessor computing and the PowerPC 604 chip. New RS/6000 servers, including Internet-ready systems equipped with Lotus

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Notes and electronic-commerce software, are brought out in October. The U.S. Department of Energy selects IBM to build the world's fastest supercomputer. Capable of performing more than three trillion calculations per second (3 teraflops), the RS/6000 SP will simulate nuclear explosions and reduce the need for live tests. IBM also announces the R/390, a new server comprised of a RISC System/6000 computer with an integrated S/390 processor card.

IBM introduces the AS/400 Advanced Series, to support Lotus Notes and provide easy Internet access, AS/400 Advanced Entry for the owners of small businesses, and a new AS/400 Advanced 36 business computer.

In personal systems hardware, IBM announces the IBM PC Server 704, its first Pentium Pro-based server; new models of the PC Server family; new models of the PC 700 line; the Aptiva S Series, the first home computer that lets people place the monitor and media drives on the desk and tuck the tower out of the way; ThinkPad 560, ultra-thin 1.2-inch, 4.1-pound package; and new models of ThinkPad 760 and 365 series. The IBM ThinkPad 701, ThinkPad 755, Aptiva, PC 300 and PC Servers are featured in "Goldeneye," a new James Bond adventure film.

IBM becomes the first major company to introduce a network computer — the IBM Network Station, a new kind of desktop device that provides access to networked applications and processing power while reducing the cost of desktop computing. The Network Station enables customers to use an economical platform for doing net-based business ("e-business"). Among the storage product announcements are: two 2.5-inch disk drives, including the highest capacity low-profile drive available for notebook computers and the world's first disk drive products to exceed one billion bits of data in a square inch of disk space; new models of the RAMAC Array storage, including RAMAC 3, RAMAC Virtual Array Model 2, RAMAC Scalable Array and RAMAC Electronic Array; and the 3466 Network Storage Manager. IBM unveils in October the lightest 2.5-inch hard disk drive for mobile computers. (The world's first hard disk drive for computer storage was invented 40 years ago by IBM, and was the size of two refrigerators; this new drive is so small that two could be fitted into a shirt pocket.)

At Uniforum in San Francisco in February, IBM Chairman Louis V. Gerstner, Jr., lays out IBM's commitment to open, standards-based computing in the first ever keynote address at the major gathering of the world's UNIX community.

IBM introduces OS/390, a network-ready, open, integrated large server operating system that can run both MVS and UNIX applications, and a new release of the Virtual Storage Extended/Enterprise System Architecture operating system.

The DB2 Universal Database, a multimedia and Web-enabled solution, is announced in December. Earlier, IBM introduces 12 application development and data management solutions, including VisualAge for BASIC and new DATABASE2 versions. IBM's CICS transaction processing software is ported to run on all leading platforms. In 1996, some 70 percent of the

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world's business information is managed by IBM databases, and IBM transaction processing software handles more than 20 billion mission-critical business transactions a day.
IBM introduces in September OS/2 Warp 4, which incorporates Netscape Navigator, Sun's Java technology and IBM speech-recognition software. More than 50,000 copies of OS/2 Warp Server, IBM's PC server operating system, are sold worldwide through the end of April, and the total number of OS/2 Warp licenses reaches six million and overall OS/2 purchases top 12 million by December.

Among the other 1996 software announcements are: the initial availability of the IBM Net.Commerce system, software that makes it possible for businesses to quickly, easily and safely create virtual storefronts on the Internet; IBM Software Servers, an integrated series of leading IBM and Lotus software solutions for Internet access, data management and collaborative computing; the delivery of VoiceType 3.0 for Windows 95, enabling users to work with their computers simply by talking to them; the introduction of VoiceType Simply Speaking, software that allows users to open an application, dictate a memo or edit a document without touching a keyboard; IBM AntiVirus Version 2.5; and IBM PC SystemView 4.0.

At Fall Internet World 1996 in December, IBM Chairman Louis V. Gerstner, Jr., unveils the notion of the "new killer apps," a world of transaction-intensive, networked applications delivered to a world of connected individuals by all of the world's most important institutions. At a time when the conventional wisdom casts the Internet as the home of games, information and e-mail, this speech reorients the debate around the more profound vocational implications of networked computing.

IBM launches a number of network computing products and services in 1996, including: IBM Cryptolope containers to seal intellectual property in a digital package so that people can buy and sell content securely over the Internet; the WOMplex (Web Object Manager), an IBM technology that enables web sites to serve millions of visitors in a highly customized way; Weblicator, a Lotus replication technology for standard web browsers allowing users to download copies of Web sites and browse them later without being connected to the Internet; the SecureWay Key Management Framework, a collection of applications, services and cryptographic engines that help make the Internet safe for electronic commerce; World Avenue, an online shopping mall designed to help retailers get on the Net more quickly and more affordably than they could on their own; Insure-Commerce, a set of network-based products and services to help the worldwide insurance industry reach and serve its customers; Managed Data Network Services, a family of networking solutions for high-speed business communications and corporate intranets; and the IBM Network Printer 24 (the fourth member of the IBM Network Printer family which is introduced in June and includes the IBM Network Printer 12 and 17, and IBM Network Color Printer).

IBM unveils the PowerPC 401GF embedded controller, a chip with high-performance and low-power features for consumer electronics, communications and office automation products.

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IBM begins a pilot program with MasterCard in September using Secure Electronic Transaction (SET) technology. The software secures credit card transactions over the Internet.

At the 1996 Centennial Olympic Games in Atlanta, Georgia, IBM demonstrates the largest integrated information technology system ever seen by a mass audience. IBM systems are deployed on 30 interconnected venues. An estimated three terabytes of time-sensitive, transaction-oriented data are collected during accreditation, games management, scoring and other events, and are passed through 7,000 microcomputers, 250 LANs, 500 data lines and 2,000 wireless computers and other system communications devices. The system also supports 80 AS/400 servers and four System/390 mainframe computers. An IBM SP2 supercomputer acts as the World Wide Web server and runs the Regional Weather Forecasting System.

Three of the U.S.'s leading healthcare organizations — spanning eight states and almost 30,000 physicians — use IBM's Health Data Network solution to link their healthcare enterprises.

Lucent Technologies and IBM's ISSC subsidiary sign a multi-year, multi-billion dollar outsourcing agreement, in which ISSC will manage the majority of Lucent's day-to-day information technology operations. IBM and The MetraHealth Companies, Inc., a subsidiary of United HealthCare Corporation, signs a 10-year, $540 million contract for information technology services. IBM reports in August that its worldwide outsourcing business reaches a total commercial contract value of $40 billion since the business was launched in 1991, driven by new business signings of $5.1 billion recorded during the first half of the year.

Alliances

Sixteen banks and IBM come together to form the Integrion Financial Network to deliver home banking to more than half of the retail banking population in North America.
IBM and Hughes announce a multi-year agreement to create high-speed communications products based on a new type of silicon chip that is several hundred percent faster than current commercial offerings.

The National Hockey League, in partnership with IBM, form an alliance — NHL Interactive Cyber Enterprises — that will use new and emerging technology to promote the growth of hockey worldwide. The PGA of America teams with IBM to present a state-of-the-art cybercast of the 78th PGA Championship which takes place in August in Louisville, Ky.

IBM and Siemens Power Systems Control announce a service that enables electric utilities to use computer networks — including the Internet — to offer excess electric power transmission capacity for sale.

IBM partners with American Express to pilot smart cards for ticketless air travel.

ISSC Australia and Telstra, Australia's largest telecommunications provider, say they intend to establish the country's largest commercial communications and data processing center.

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Science & Technology

For the fourth consecutive year, IBM surpasses its own record for U.S. patents, receiving 1,867 U.S. patents from the U.S. Patent and Trademark Office, 329 more than any other company receives in 1996.

Three IBMers are inducted into the Women in Technology International Hall of Fame: Ruth Leach Amonette, IBM retiree (and in 1943, the company's first female vice president); Dr. Barbara D. Grant, general manager, Tucson, and vice president, Storage Systems Division; and Linda S. Sanford, general manager, System/390 Division.

In the Deep Blue versus World Chess Champion Garry Kasparov tournament — the first ever traditional chess match between man and computer — IBM's Deep Blue wins one match, ties two and loses three. Deep Blue is a combination of special purpose hardware and software with an IBM RISC System/6000 SP2, a system capable of examining 200 million moves per second, or 50 billion positions, in the three minutes allocated for a single move in a chess game.

IBM sets a new world record in magnetic data-storage density — five billion bits of data per square inch — the equivalent of 312,500 double-spaced typewritten pages (a stack 104 feet high) in one square inch of disk surface.

IBM scientists publish evidence that a fundamentally new type of electron behavior is responsible for the so-called "high-temperature" superconductivity that was first discovered in a certain class of ceramic materials 10 years ago.

IBM researchers demonstrate technologies that allow an "electronic wallet" to receive pages, act as a universal credit card, scan in a receipt, transmit messages or be used as a phone.

Facilities

IBM says it will expand operations at its computer disk drive manufacturing sites near Szekesfehervar, Hungary and in Singapore. The company also announces an additional $440 million investment for disk drive and component manufacturing expansion, including a new disk drive manufacturing facility in Prachinburi, Thailand; and new capacity in San Jose, Calif., and Mainz, Germany.

IBM says it will open a new international HelpCenter in Dublin, Ireland, and expand its HelpCenter in Greenock, Scotland, as part of a $150 million investment by the IBM PC Company to maintain and expand its worldwide PC telephone support capabilities.

Corporate Citizenship

IBM is the largest corporate contributor in 1996. Over the last decade, IBM has contributed more than $1.3 billion to nonprofit organizations, schools and universities — close to four million hours of volunteer time in the United States alone, and millions more around the world.

IBM hosts the National Education Summit attended by U.S. governors, business leaders and President Bill Clinton. The summit addresses ways to raise national education standards and achievement. Speaking at the opening plenary session, IBM Chairman Louis V. Gerstner, Jr., delivers remarks on the role of industry in transforming the nation's schools. IBM has contributed $35 million to help school systems remove barriers to student achievement.

Twelve non-profit organizations and consortia are selected to receive grants valued at a total of $2.5 million through the company's Workforce Development Technology Grant Program which funds the innovative uses of technology in job training and adult education.

IBM establishes a computer training center in Bosnia-Herzegovina.

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Business Performance

IBM revenue increases to $78.50 billion, three percent more than in 1996, and net earnings reach $6.09 billion, a 12 percent increase over the year before. There are 269,465 employees and 623,537 stockholders at year end.

IBM Chairman Louis V. Gerstner, Jr., addresses more than 900 stockholders at the IBM annual meeting in Dallas, and describes how the company is rebuilding the competitiveness of its traditional businesses, and its progress in moving into new, high-growth areas, such as distributed software and services.

Organization

IBM announces plans in May to become sole proprietor of Advantis — the U.S. data network services arm of the IBM Global Network — by buying Sears' 30 percent equity interest. The company acquires in December Eastman Kodak's share of Technology Service Solutions, which was formed in 1994 by IBM and Eastman Kodak. TSS becomes a wholly-owned subsidiary of IBM. IBM and NetObjects, Inc., announce that IBM has purchased a majority interest in NetObjects, a leading provider of website development tools for designers and intranet developers.

Tivoli Systems, a subsidiary of IBM, and Software Artistry, Inc., reach a merger agreement, in which Software Artistry — a leading provider of both consolidated service desk and customer relationship management solutions for distributed enterprise environments — will become a Tivoli business unit. Tivoli Systems also acquires Unison Software, Inc., a leading developer of workload management software for distributed computing environments.

Products & Services

IBM completes in June one of the most important product transitions in the company's history with the debut of a new generation of System/390 servers, all powered by advanced microprocessors. The microprocessor "engines" help make the S/390 Parallel Enterprise Server -

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Generation 4 (G4) more powerful and less costly to produce and maintain than previous models, which used bipolar processor technology. Four months later, IBM unveils 15 new models of the S/390 Multiprise 2000 server family.

The company reports in September performance improvements from the new Power PC 604e microprocessor that make the RS/6000 SP up to 58 percent faster. The next month, the RS/6000 Model 70 server, the most comprehensive 64-bit UNIX computing solution available, is rolled out.

The company announces in August a new family of AS/400e series servers to help small and medium-sized companies and departments of large enterprises to take advantage of business opportunities on the Internet.

IBM introduces Netfinity, a new line of enterprise PC servers beginning with the Netfinity 7000 supporting the Microsoft Windows NT computing environment. Netfinity servers range from entry level models to high-capacity symmetric multiprocessing machines. The company also rolls out the IBM PC Server 315 during the year.

IBM introduces in March the IntelliStation, a line of Microsoft Windows NT-based workstations for commercial users. The new family complements IBM's RS/6000 line of UNIX workstations and servers. The first in that line of professional workstations is the IBM IntelliStation Z Pro. The new IntelliStation M Pro NT workstation is added to the line up in October.

IBM says in July that two new network computers are joining the existing IBM Network Station 100: the IBM Network Station Series 300 and the Series 1000. Shipments of the Network Station Series 1000, the industry's first network computer to run Java applications, including Lotus eSuite, begin on Dec. 1.

Other personal systems announcements in 1997 include: the PC 300PL; three new models of the IBM Aptiva S series and four new models of the Aptiva C series in February; eight new models in the E, L and S series of the Aptiva PC line in September; the Aptiva E16 and Aptiva L71 in November; the ThinkPad 380, ThinkPad 310ED and ThinkPad 560X; and the ScrollPoint mouse — the latest ease-of-use innovation for PC users to provide one-touch, 360-degree scrolling for easy Internet surfing and document navigation.

IBM introduces in April the RAMAC Virtual Array Storage 2 Turbo system, which delivers up to 100 percent faster performance than the original RAMAC Virtual Array introduced in 1996. The following month, the Travelstar 5GS is rolled out as the world's first 5-gigabyte laptop disk drive. IBM delivers in June the Magstar Virtual Tape Server, an integrated hierarchical storage management system for users of ES/9000, ES/3090 and S/390 enterprise servers. The company announces in October the 8.1-gigabyte Travelstar 8GS, the first drive to exceed 3 billion bits per square inch on each of its disk platters, a world record. (Not much larger than a music cassette

tape, it will hold enough information that when printed, would constitute a stack taller than the Empire State Building.) That same month, IBM begins shipping four new server hard disk drives, including the 9.1-gigabyte Ultrastar 9ZX, with the fastest seek time (10,000 rpm) of any hard disk drive being shipped. The next month, IBM announces the world's highest capacity desktop OPC disk drive. The 16.8-gigabyte drive incorporates breakthrough technology called giant magnetoresistive (GMR) heads. No bigger than the head of a pin, the GMR head is the world's most sensitive sensor for reading and writing computer data on magnetic disks.

IBM sets a record by backing up a 736-gigabyte Oracle database, one of the largest databases ever tested, in less than an hour and a half.

IBM begins shipment in September of DB2 Universal Database, the industry's first fully scalable, Web-ready database management system. Called "universal" because it can sort and query alphanumeric data — as well as text documents, images, audio, video and other complex objects — DB2 Universal Database can perform a wide range of tasks from decision support to business transactions. The company later announces the DB2 Scholars Program, a higher education initiative designed to provide universities, professors and students with more than $30 million in database applications, training and support. The DB2 Scholars Program is a worldwide program that offers 150 colleges and universities copies of IBM's DB2 Universal Database, along with service and support for schools offering course work in relational databases.

Among IBM's other software products 1997 announcements are: the latest version of IBM eNetwork Software, to permit faster access to enterprise and Internet information; OS/390 Version 2 Release 4; VSE/ESA Version 2 Release 3; VisualAge 2000, designed to help companies make their applications Year 2000 ready; the availability of Lotus Domino for System/390 mainframe servers, providing the industry's leading groupware solution on the industry's most powerful and secure server; ADSTAR Distributed Storage manager Version 3; and MQSeries Version 5 messaging software.

With the introduction of eSuite in November, Lotus becomes the first company to offer a complete set of business productivity software written in Java for the network computing environment. Included in the eSuite are e-mail, calendar, address book, word processing, spreadsheet, presentation graphics and project scheduling applications. IBM ships four million Lotus Notes seats in the fourth quarter of 1997, the largest quarter ever of unit volumes for Notes. The totaled installed base reaches 20 million, up from 2.2 million when Lotus joined IBM in 1995.

IBM unveils ViaVoice continuous speech recognition technology for Mandarin Chinese in September. In developing the product, researchers identified and classified thousand of vocal tones and homonyms, created an algorithm that deconstructs syllables into parts, and developed a new language model to transform spoken words into the right combination drawn from 6,700 Chinese characters. Two months later, IBM announces ViaVoice Gold, software that gives people

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a hands-free way to dictate text and navigate the desktop with the power of natural, continuous speech.

At a White House ceremony in July announcing the release of the Clinton Administration's framework for global e-commerce, IBM Chairman Louis V. Gerstner, Jr., delivers remarks on how the Internet has transformed the way companies do business. In October, Mr. Gerstner announces to IBM employees the debut of a major strategic campaign built around the IBM-coined term "e-business" and details the company's commitment to lead on two fronts: successfully taking customers into this world; and transforming IBM into the world's leading example of e-business. In his first major customer address on e-business — and a speech considered by many as the first "wake-up call" to Wall Street on the implications of the networked world — Mr. Gerstner describes to the Securities Industries Association in November the Internet's ability to challenge centuries-old business models and transform the nature of all important transactions between individuals and institutions.

The company launches a free U.S. Patent Search Web site (www.ibm.com/patents) that provides access to more than two million patents issued by the U.S. Patent and Trademark Office from 1974 to the present. Also rolled out is Asset Services, a new Internet-delivered offering to help customers track, manage and maintain control of their multivendor desktop computers and software, and the costs of distributed computing.

IBM announces Magic 3D Coloring Book, the first in a series of award-winning Crayola interactive multimedia products that inspire creativity and learning among young children. IBM's Edmark educational software subsidiary ships "Let's Go Read! An Island Adventure," the first in a new series to help children build reading skills.

Six new active matrix Thin Film Transistor Flat Panel color monitors are brought to market.

IBM introduces IBM ServicePac, an offering of packaged technical support to customers of all sizes. IBM expands its Business Computing Utility service offering to Prague. First established in Budapest, this unique e-business service gives small- and medium-sized businesses access to business management applications running on servers at IBM data centers 24 hours a day, seven days a week.

The State Hermitage Museum of St. Petersburg, Russia, and IBM announce an art and technology partnership. Also announced during the year are technology projects with the Library of Congress and with Yale University's Beinecke Rare Book and Manuscript Library to use IBM Digital Library technology to preserve art and scholarship while protecting ownership rights.

IBM says that the National Football League, NBC Sports and IBM will jointly produce the official Super Bowl XXXII Web site. IBM Canada Ltd. signs a one-year sponsorship with the Ottawa Senators NHL team.

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Alliances

IBM and EDS announce a software agreement — believed to be one of the largest in the history of the software industry — that gives EDS access to a wider range of products to support its clients' global needs while streamlining costs associated with software purchases.

IBM, Telstra and Lend Lease Corporation form an information alliance, signing Australia's largest information technology outsourcing deal and establishing a new network services company called Advantra. As part of the agreement, IBM Global Services Australia will take responsibility for Telstra's data center operations, creating the largest data processing center in the Southern Hemisphere.

IBM, China Great Wall Computer Shenzhen Company and Shenzhen Kaifa Technology Company Limited establish The Shenzhen Hailiang Storage Products Co., Ltd., a new joint venture for the manufacture of magnetoresistive head gimbal assembles, a key component of hard disk drives.

Science & Technology

For the fifth consecutive year, IBM receives more U.S. patents — 1,724 in all — than any other company.

In a six-game match, a chess-playing IBM computer known as Deep Blue defeats chess grandmaster Garry Kasparov — the first time a reigning world champion loses a match to a computer opponent in tournament play. Deep Blue is an IBM RS/6000 SP supercomputer capable of calculating 200 million chess positions per second. At the Wake Forest University commencement exercises in May, IBM Chairman Louis V. Gerstner, Jr., offers the graduating class his perspective on what was learned from the "man-versus-machine" match.

Three IBM scientists — Robert Dennard, Mark Dean and Dennis Moeller — are inducted into the U.S. National Inventors Hall of Fame. To date, only 137 people have been so honored. IBM Fellow Emeritus Richard L. Garwin receives the Enrico Fermi Award for contributions to national security and arms control, and for his achievements in nuclear and particle physics.

NASA's *Pathfinder*, equipped with IBM RS/6000 technology for its onboard flight computer, lands on Mars. (The flight computer is responsible for more than 100 pyro events, including deploying the parachutes, inflating the airbags and firing the retro rockets that allow *Pathfinder* to land safely.) The Space Shuttle carries 11 ThinkPads into Earth orbit. Combined, the ThinkPads can process more than half a billion instructions per second.

IBM scientists announce a breakthrough semiconductor manufacturing process that uses copper instead of aluminum to link transistors in chips, the culmination of 30 years of experimentation and inquiry. With copper, which conducts electricity 40 percent more efficiently than aluminum, semiconductor devices like microprocessors and memory chips can be more powerful and more energy efficient.

IBM Research sets a new world record for disk drive storage density — 10 gigabits per square inch, equivalent to 1,450 average-length novels.

IBM's Tokyo Research Laboratory unveils software that reads aloud information displayed on the computer screen. The software allows the visually impaired to access and use the Internet.

Two IBM Research scientists create the world's first public-key encryption scheme that provides a mathematically proven uniform level of computer data security.

Facilities

IBM dedicates its new state of the art corporate headquarters in Armonk, N.Y. in September. Although smaller than previous headquarters, the new 280,000 square feet facility has an open office design and many more meeting areas for team and customer interaction. The building is equipped with a high-speed wire and wireless communication network, and a technology gallery that features IBM products and innovations throughout the company's history.

IBM announces plans to invest $700 million to build one of the world's most advanced microdevelopment facilities at IBM's site in East Fishkill, N.Y. The facility will be among the first to produce chips on 12-inch silicon wafers and will use IBM's unique copper manufacturing process and advanced X-ray lithography technology.

IBM announces a five-year, $25 million investment to establish the Solutions Research Center — its eighth research center in the world — in Delhi, India. As part of its mission, the Center will foster joint research projects with India's top universities and educational institutions, and will focus initially on weather forecasting.

Corporate Citizenship

IBM gives more than $100 million to programs for people in need, including corporate contributions and donations from the IBM International Foundation. Individual employees give another $30 million in matching grants and donations to nonprofit organizations and educational institutions in the communities where they work. Each year IBM provides several million dollars' worth of new technology to more than 1,600 U.S. nonprofit health and human services organizations through the United Way's network of agencies. IBM employees volunteer nearly four million hours of service.

IBM provides $10 million in new Reinventing Education grants to 12 U.S. school districts and state education departments, bringing the total to $35 million since the program was established in 1994. IBM Reinventing Education grants in South Africa — part of a $35 million IBM initiative — help equip schools and train teachers on how technology can help them develop innovative curricula.

The U.S. Environmental Protection Agency recognizes IBM for outstanding contributions in protecting the Earth's ozone layer. Since 1993, IBM has completely eliminated the annual use of more than 12 million pounds of CFCs and three million pounds of methyl chloroform from its

products and processes. More than two-thirds of the nonhazardous waste generated by IBM during the year is recycled.

IBM receives the Golden Ladder Award from *We* magazine for being the "No. 1 Employer in America for People with Disabilities."

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Business Performance

IBM revenue reaches $81.66 billion, four percent more than in 1997, and net earnings are $6.32 billion, a four percent increase over the year before. There are 291,067 employees and 616,800 stockholders at year end.

IBM Chairman Louis V. Gerstner, Jr., addresses stockholders in April at the Chicago annual meeting, focusing on IBM's leadership and technology breakthroughs of the past year. The next month, he meets with security analysts in New York and outlines the company's three emerging engines of growth — services, software and OEM technology (primarily semiconductors and storage).

Organization

The IBM Technology Group is established in October to pursue growth opportunities in the OEM marketplace.

IBM expands the number of industry-focused solution units from 11 to 20, consolidates the overall management of the industries into six sectors, creates a new centralized industry marketing team and streamlines its solutions development efforts. In addition, two geographic units — IBM North America and IBM Latin America — are unified into IBM Americas.

IBM acquires CommQuest Technologies, Inc., a company that designs and markets advanced semiconductors for wireless communications applications, such as cellular phones and satellite communications. CommQuest becomes a unit of IBM's Microelectronics Division.

IBM's Tivoli Systems completes its merger with Software Artistry, Inc., a leading provider of both consolidated service desk and customer relationship management solutions for distributed enterprise environments.

IBM acquires The Chem Systems Group Inc., a management consulting firm serving chemical and petroleum companies, which will function as part of IBM Consulting.

IBM creates an independent software company to focus on the high-growth customer relationship management market. The company is to be headquartered in Indianapolis, with sales, development and support locations worldwide.

IBM and AT&T announce in December a series of strategic agreements under which AT&T will acquire IBM's Global Network business for $5 billion in cash, and the two companies will enter

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into outsourcing agreements with each other. IBM will outsource a significant portion of its networking needs to AT&T, and AT&T will outsource certain applications processing and data center management operations to IBM.

Products & Services

IBM introduces in May the IBM S/390 - Generation 5 (G5) server, the most powerful S/390 computing system. Two months later, IBM says the S/390 G5 Parallel Enterprise Server 10-way Turbo model has smashed the 1,000 MIPS barrier, making it the world's most powerful mainframe. The company ships its 1,000th S/390 Parallel Enterprise Server - Generation 5 in November — less than 100 days after G5 manufacturing began, marking the largest ramp-up in S/390 history. In all, 1998 shipments of mainframe computing power, measured in MIPS, increase 60 percent over 1997.

IBM unveils ASCI Blue Pacific — the world's most powerful computer — which is capable of performing 3.9 trillion calculations per second. It would take 63,000 years for a person using a calculator to perform as many calculations as this computer can perform in a single second. IBM announces in April improvements to the RS/6000 SP — the result of IBM's new 332 MHz PowerPC 604e microprocessor — that deliver five times the performance of the IBM Deep Blue computer that defeated chess Grand Master Garry Kasparov. The next month, the company rolls out the RS/6000 HA50 High-Availability Cluster Server which uses clustering technology that allows more than one computer to be linked together to provide superior reliability and availability. A month after that, IBM reports record-breaking business intelligence benchmarking results using the RS/6000 SP, DB2 Universal database Enterprise-Extended Edition and IBM's Serial Storage Architecture disk technology. IBM and FTL Systems announce in June breakthrough software running on an RS/6000 SP supercomputer that can test and verify electronic circuits and chip designs hundreds of times more complex than can be tested at the time. IBM introduces its first server — the RS/6000 Enterprise Server Model S70 — powered by a new second-generation 64-bit microprocessor that set a record for speed on the Web, and the RS/6000 43P Models 260 and 150. The U.S. National Weather Service selects IBM to provide an IBM RS/6000 SP — more than 10 times more powerful than the system made famous during Deep Blue's 1997 victory over chess Grand Master Garry Kasparov — to improve the agency's national weather and climate forecasting capabilities. IBM debuts the RS/6000 HA-S70 Advanced Cluster Server, a packaged solution that includes two preconfigured S70 Advanced servers coupled with IBM's High Availability Cluster Multi-Processor software.

The AS/400e server 170 and AS/400e server 150 are introduced in February, followed by the AS/400e model S40 and 650 and AS/400e model 170 in August. During 1998, IBM delivers an AS/400 to a customer every 12 minutes of every workday.

The Netfinity 3500 server is rolled out in February. Two months later, IBM announces a broad range of e-business tools, including the Netfinity 5500 midrange server; the Netfinity 3000, a

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low- cost, entry-level server; the IntelliStation M Pro, to allow users run graphics-intensive applications and business applications on the same platform; the PC 300PL; the next generation of IBM monitors; and packaged e-business network solutions.

The company reports record-breaking performance for business intelligence solutions based on its Netfinity line of servers along with Windows NT-based workstation performance records by the IBM IntelliStation M Pro. IBM also introduces the Netfinity 7000M10, 55000M10 and 5000 servers; the IntelliStation E Pro, a Windows NT workstation for customers who require fast 2D and entry-level 3D graphics; and enhancements to its Network Station family of network computers, making IBM the first thin client maker to support more than 30 languages.

Other 1998 personal system announcements include: the PC 300GL based on the Intel Celeron processor; Aptiva E76, the first model of the Aptiva E Series to be powered by an Intel Pentium II processor; Aptiva E86, the first member of the E Series to feature DVD technology; Aptiva E84 and E56; Aptiva E85 and E96; Aptiva SE7 and E4N; Aptiva E2U, E3U, E5U and E6U, three of which deliver ViaVoice speech recognition software; ThinkPad 385XD and 380XD, 310ED and 560X; ThinkPad 600 Model 35U; ThinkPad 600 560Z and 380Z models; and the ThinkPad i Series, IBM's first mobile computer line designed exclusively for consumers.

IBM introduces in January its Home Director Professional solution, providing consumers with an intelligent link between commonly available home systems, such as security, lighting and HVAC systems. The company also rolls out Universal Management, the industry's most comprehensive suite of systems management tools designed to lower the cost of ownership throughout the PC life cycle.

During the year, IBM sets repeated records in hard disk drive storage densities, culminating with a world record drive for notebook computers — holding 14.1 gigabits per square inch, or a trail of paper more than 1,200 miles long. In addition, the Microdrive is introduced in September as the world's smallest and lightest hard disk drive. Weighing less than an AA battery, it can hold more than 200 times more data than a floppy disk.

In other storage systems developments, IBM announces Travelstar 6GT, the highest capacity 2.5-inch slimline hard disk drive for notebook computers, holding 6.4-gigabytes or about three times as much information as the average notebook hard drive; the next generation of 18GB and 9GB 10,000 rpm hard disk drives and 20/40GB DLT and 10/20GB NS Internal SCSI Tape Drives; performance enhancements for the Magstar MP 3570 Tape Subsystem; the world's smallest and lightest hard disk drive, with a disk platter the size of a large coin; the Travelstar 14GS notebook computer hard drive that can hold all of the double-spaced text of paper stacked 2,338 feet high; and Ultrastar 9LZX hard drive, ideal for use by video producers and movie editors.

To mark the 100th anniversary of magnetic recording in November, IBM announces the IBM Deskstar 25GP as the world's highest capacity hard drive for desktop PCs. (The first disk drive in 1956 had a capacity of 5 megabytes; the Deskstar 25GP has 5,000 times the capacity of that first

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drive.) IBM also marks the 10th anniversary of its storage management software architecture in August. The company reports that its OEM Magnetoresistive (MR) Head business has shipped more than 50 million MR heads and 2.5 million giant MR heads since the business began in late 1996.

IBM's Lotus Notes seats number over 34 million, up from 2.2 million in 1995 when Lotus joined IBM. The company has more than 1 million DB2 licenses, nearly 40 million users worldwide and 11,000 corporate customers. IBM's CICS software processes more than 20 billion transactions a day or 260,000 transactions per second, and more than $100 billion in transactions per week, the same level as the NASDAQ market.

Among the software announcements during 1998 are: the expansion of the VisualAge 2000 portfolio of Year 2000 tools with unique Millennium Language Extensions and the new Application Testing Collection; the beginning of shipments of the IBM Suite for Windows NT and IBM Enterprise Suite for Windows NT, two software suites that make it easy for Windows NT users to build, deploy and manage business applications; several enhancements to the WebSphere application server product line; ViaVoice 98, the next generation of IBM's speech recognition software; new products and enhancements to the eNetwork Software family of host integration products; IBM MQSeries Workflow; the third release of the San Francisco application business components for Java; IBM Global Sign-On Version 2, software to eliminate the need for people using multiple systems to sign onto each one individually; and Tivoli Systems, Inc., announces the first release of TME 10 Output Manager, an output management solution for client/server production environments.

Online sales of IBM products reach $38 million a day in December.

IBM helps set new Internet records at the Nagano Olympic Winter Games in February. The official Nagano Web site, powered by IBM, registers an unprecedented total of nearly 650 million hits from around the world over the course of the 16-day event. (By comparison, the 1996 Atlanta Olympic Summer Games registered 187 million hits.) The *Guiness Book of Records* officially recognizes IBM for setting two world records in Internet traffic on the 1998 Nagano Olympic Winter Games Web site: "The Most Popular Internet Event Ever Recorded" and, with 110,414 hits, "The Most Hits On An Internet Site in One Minute."

For the fourth consecutive year, IBM and The All England Lawn Tennis Club collaborate to produce the official Wimbleton Web site, which records over 106 million page views and over 224 million server hits during the 1998 Championships. The official Web site of the 1998 French Open tennis championships, designed and hosted by IBM, is the most highly trafficked official Grand Slam Web site to date, recording 146.9 million server hits during the two-week tournament in June. Then in September, the official 1998 U.S Open Web site, powered by IBM for U.S. Tennis Association, records 382 million hits and 242 million page views during the two-week tournament.

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Other IBM e-business and network computing announcements during 1998 include: the industry's premier system security for conducting business over the Internet encompassing a hardware/software solution integrated with IBM's flagship enterprise operating system, OS/390, and IBM S/390 Parallel Enterprise servers - Generation 3 (G3) and Generation 4 (G4); Home Page Reader for Windows, a talking Web browser that opens the World Wide Web with spoken Internet access to blind and visually impaired users; a set of agreements by IBM, Security Dynamics Technologies, Inc. and RSA Data Security, Inc., to allow corporate users to more easily select and integrate security products providing features such as single sign-on, cryptography, authentication services and encryption for their networks; IBM eNetwork Law Enforcement Express, to extend the reach of host- and Web-based applications to the mobile patrol force by allowing law enforcement agencies to take advantage of available Internet and intranet information in real-time; eNetwork Firewall Version 3.2 for Windows NT and AIX, offering customers comprehensive firewall solutions to support their e-business initiatives; eNetwork On-Demand Server, software that makes it easier to deploy and use Web-based applications within an enterprise; the Electronic Expense Reporting Solution, an integrated, online expense processing tool; and the IBM Real Estate Solution, a complete technology package of hardware, software, Internet tools and digital imaging peripherals for real estate agents.

CBS News selects the IBM News Archive Application to manage the entire digital and physical assets of its vast broadcast archive, and the WB Television Network picks IBM to provide an integrated distribution and spot insertion solution for its WeB Division.

Among the other 1998 product announcements are: the 8239 Token-Ring Stackable Hub; expansion of the Ethernet networking product family; InfoPrint 20, a workgroup laser printer; the next generation of printing solutions, including InfoPrint Manager 3.1; the T55, the first sub-$1,000 15-inch active matrix Thin Film Transisitor flat panel monitor; three new flat panel monitors — Models 9516-B23, 9514-B03 and 9514-B23; G54 and G74 General Business Series monitors; the T85 18-inch active matrix Thin Film Transistor flat panel monitor; and the IdeaScan scanner.

IBM delivers in September the world's first copper-based microprocessors, including a PowerPC 740/750 operating at 400 MHz. Microprocessors that incorporate copper wiring boost chip performance by about one-third. IBM says it will incorporate copper into its S/390, RS/6000 and AS/400 server families.

IBM becomes the first company to introduce silicon germanium chip-making technology into mainstream manufacturing, offering the first SiGe-based standard products for use in wireless communications products such as cell phones and pagers. SiGe chips provide high performance and less power consumption with lower cost, helping to usher in new breeds of network appliance devices for personal communication.

IBM also introduces a faster, 300 MHz version of the PowerPC 750 microprocessor; the POWER microprocessor that performs like eight chips in one; four new single-chip MPEG-2 video

encoders, which significantly expand IBM's family of professional digital video products; and new semiconductor packaging products that can help electronics manufacturers integrate more components onto a single microchip.

IBM wins more than $30 billion in new IBM Global Services (IGS) contracts. Of the 38 outsourcing contracts IBM signs in 1998 that are worth $100 million or more, nearly half are with customers outside the United States, more than double the percentage of two years ago. For example: the French insurance company GAN selects IBM to help deploy a worldwide satellite network connecting 1,000 of the company's general agents; eight Singapore government institutions and ministries award desktop outsourcing contracts worth more than S$16 million to IBM; Korean Airlines signs a 10-year, $120 million outsourcing contract with IGS; IGS and SC Johnson Wax establish a comprehensive global information technology (IT) alliance, including a 10-year, multi-million outsourcing contract for IGS to manage SC Johnson Wax's data center operations across Europe and to support manufacturing sites in the U.K. and Holland; Kao Corporation and IBM Japan, Ltd. sign a strategic outsourcing contract; Fiat and IBM announce a $175 million outsourcing relationship in Latin America; Equifax broadens its U.K. outsourcing contract with IBM with a new 10-year contract for $220 million; and Lend Lease extends its outsourcing agreement with IBM Global Services Australia in a $167 million, six-year contract extension.

Cable & Wireless Communications announce a 10-year, $3 billion strategic information technology partnership with IBM, the largest of its kind between a major communications company and a leading IT services provider. The Boeing Company awards IBM a comprehensive IT contract valued at more than $2 billion over five years. GE Capital Services and IBM announce their intent to enter into a long-term IT alliance, under which GE Capital will outsource its mainframe and midrange processing for its own businesses to IGS, and IBM will acquire the commercial data center outsourcing business of GE Capital Services Technology Management Services and serve its current external customers worldwide. The Hertz Corporation renews its five-year, $100 million-plus contract for a variety of IT services. Chiron Corporation and IBM establish a 10-year, $139 million IT outsourcing relationship. IBM establishes a five-year, $110 million-plus partnership with Consolidated Freightways.

The company introduces IBM Security Services to help customers assess and improve security in their computing environments and IBM Distributed Learning Services, which help companies assess training needs and implement technology-based learning programs. Also announced is IBM Asset Services, an offering to help customers track, manage and control their multivendor desktop computers and software.

IBM and The Little Tikes Company introduce the *Young Explorer* fun and learning computer center — an all-in-one computing solution for early childhood centers, preschools, elementary schools, libraries. IBM will provide the computer and the educational software from its Edmark

subsidiary; Little Tikes will manufacture the furniture components. In addition, IBM launches World Book multimedia software, the first in a series of DVD-ROM reference offerings for families.

Alliances

IBM says in April that it has become the first international provider of e-business services in China and the company announces major initiatives with China Telecom to jointly develop other technology-based operational solutions for China's telecommunications industry. Two months after that, IBM reports strategic agreements with the Chinese Ministry of Information Industry and key business partners to expand the development and use of e-business solutions, based on IBM's Network Computing Framework and Java technology, in China.

IBM and Dassault Systemes announce a new strategic alliance to deliver new integrated solutions in response to an emerging new market opportunity called Product Development Management II.

Groupe Bull and IBM extend their agreement to include development of PowerPC-based UNIX systems and the AIX operating system.

IBM and STMicroelectronics announce a joint effort to accelerate development of advanced system-on-a-chip products.

The company says that it has formed a partnership with Voice Control Systems, Inc., to marry the power of advanced speech recognition with the telephone.

Science & Technology

IBM Chairman Louis V. Gerstner, Jr., attends CeBit '98 in Hanover, Germany, in March, and provides IBM's first in-depth discussion of deep computing (emerging computer systems that combine ultrafast processing with sophisticated analytical software) and pervasive computing (tiny intelligent processing devices embedded in the global fabric of computing and communications) as important emerging technology trends and the natural extensions of networked computing.

For the sixth year in a row, IBM receives the most U.S. patents — 2,658 — which is 733 more than the number two company and 40 percent more than IBM won last year. IBM becomes the first company ever to break the 2,000 U.S. patent issuance barrier in a single year. IBM now owns more than 30,000 patents worldwide, including 14,000 in the United States. IBM has 2,900 researchers worldwide.

U.S. Vice President Al Gore announces Blue Pacific — the world's fastest computer — which is jointly developed by the U.S. Energy Department's Lawrence Livermore National Laboratory and IBM, can perform 3.9 trillion calculations per second (15,000 times faster than the average desktop computer) and has over 2.6 trillion bytes of memory (80,000 times more than the average PC).

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IBM perfects the Silicon-on-Insulator process for building high-speed transistors that enhance chip speed by up to 35 percent and reduce power requirements by up to 66 percent.

The company unveils an experimental microprocessor that operates at 1,000 megahertz or three times faster than the fastest Intel Pentium chip.

IBM Research engineers at the Austin Research Lab demonstrate the world's first experimental CMOS microprocessor that can operate at one billion cycles per second (1 GHz)
Scientists at the IBM Zurich Research Laboratory and the French National Center for Scientific Research discover "molecular wheels": propeller-shaped molecules that rotate rapidly in a bearing-like structure formed by surrounding molecules.

IBM provides the details of a collaboration between a team of scientists at its Thomas J. Watson Research Center and an eminent Renaissance art historian to reconstruct Michelangelo's (second) Pietá. The project, based on new computerized geometric three-dimensional modeling techniques that will make near-perfect digital replication of very large scale objects possible, will yield nearly two billion bits of data.

Facilities
IBM says it will spend more than $100 million on several major new initiatives, including expansion of the company's Burlington, Vt., facility for making "masks" — stencils used to transfer circuit designs onto actual chips.

The company also reports a $20 million expansion of its operations in China, with the unveiling of a new plant for manufacturing hard disk drive magnetoresistive (MR) heads. The plant willl be operated by the Shenzhen IBM Technology Products Co., Ltd., a new company which is fully-owned by IBM.

Motorola and IBM announce in June the transition of the Somerset PowerPC microprocessor design center in Austin, Texas, from joint ownership to becoming wholly-owned by Motorola. The Somerset facility opened in 1992 and has been jointly funded and staffed to support the development of products based on the PowerPC architecture.

IBM's Transarc subsidiary opens a new Customer Solutions Center in San Diego, Calif.

Corporate Citizenship
U.S. President Bill Clinton presents IBM Chairman Louis V. Gerstner, Jr., with the first Ron Brown Award for Corporate Leadership in recognition of the company's long-standing commitment to workforce diversity.

Speaking on behalf of the information technology industry at the OECD Ministerial Conference in Ottawa, Canada, IBM Chairman Louis V. Gerstner, Jr., delivers a major address on the policy and regulatory environment required for e-business.

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IBM announces in August a $1 million investment in Ireland's school system as part of its global Reinventing Education program. Ireland is the first European country to be selected as an IBM Reinventing Education partner. IBM's Reinventing Education initiative — which is recognized in a Harvard Business School case study as a model for corporate philanthropy in education — contributes more than $35 million to 15 school districts and six states in the United States alone, and is expanded in 1998 to include projects in Brazil, Canada, Columbia, India, Ireland, Italy and Vietnam.

IBM and the United Way of America launch the KidSmart Early Learning Program, a project to install computer learning centers in more than 1,000 nonprofit preschool sites across the United States.

As part of its $3.5 million commitment to support the development of Internet2, IBM announces the names of seven higher education institutions that will receive resources through the company's sponsored research program. Donated resources will be in the form of hardware, software, switches and other pieces of network infrastructure critical to Internet2 applications, connections and operation.

The City of Oakland (Calif.), IBM and Bridge West Oakland Housing, Inc. announce a $1.2 million plan to install a computer training facility in a public housing development — including network stations in each apartment — so that welfare and low-income residents can learn critical job skills in their own homes.

IBM establishes a computer training center in Novi Sad, the capital of the northern province Vojvodina, in the Federal Republic of Yugoslavia, to train refugees of the region who lost their homes during the war.
Individual employees in the United States give $43.9 million through matching grants and donations to nonprofit organizations and educational institutions. IBMers volunteer four million hours of service to local causes, from tutoring youngsters in math and science to teaching PC skills to single parents. IBM dedicates $116 million to benefit people in need.

IBM increases the number of women executives by 18 percent and the number of minority executives by more than 15 percent in the United States.

1999

Business Performance
IBM revenue reaches $87.5 billion, up seven percent over 1998, and net earnings are $7.7 billion, a 22 percent increase over the prior year. There are 307,401 employees and 646,702 stockholders at year's end.

1999

Organization

IBM and Sequent Computer Systems announce a merger agreement under which IBM will sell Sequent's product line worldwide and integrate Sequent technologies into IBM products. The merger supports IBM's strategy to deliver leadership solutions for e-businesses, emerging "NetGen" companies and UNIX and NT customers. Sequent then becomes a wholly-owned subsidiary of IBM.

IBM says that Whistle Communications, Inc., the industry's leading manufacturer of "thin server" products, will become a wholly-owned subsidiary, an acquisition that will strengthen IBM's ability to help small companies set up comprehensive Web capabilities and provide Internet access and e-mail services to multiple employees, all through a single Internet connection.

IBM acquires Mylex Corporation, a leading developer of technology for moving, storing, protecting and managing data in desktop and networked environments as a wholly-owned subsidiary. The acquisition strengths IBM's efforts to deliver "one-stop shopping" to storage customers in the OEM market and will broaden IBM's data storage offerings.

Products & Services

The company rolls out the S/390 G6 Server as the world's most powerful commercial enterprise server. The S/390 Parallel Enterprise Server - Generation 6 is the first enterprise server to use IBM's innovative copper chip technology, and extends customers' ability to handle millions of e-business workload transactions and large-scale enterprise resource planning applications. The S/390 G6 family's largest system can deliver more than 1,600 MIPS capacity.

IBM launches the next generation of its RS/6000 SP supercomputer with POWER3 microprocessors that more than double its number-crunching power at approximately the same price. The POWER3 can perform up to two billion operations per second and is more than twice as powerful as the POWER2 Super Chip inside IBM's "Deep Blue," the computer that beat world chess champion Garry Kasparov in 1997.

The National Center for Atmospheric Research in Boulder, Colo., takes delivery of an IBM RS/6000 SP that will accelerate researchers' abilities to simulate global climate patterns. The new RS/6000 SP — code-named "blackforest" — is five times larger and 20 times more powerful than the system made famous during Deep Blue's historic 1997 victory over world chess champion Garry Kasparov.

IBM becomes the leading vendor in the field of high performance computing. More universities, government laboratories and businesses use IBM supercomputers (RS/6000 SPs) than those of any other manufacturer on the "TOP500 Supercomputing Sites" list.

IBM launches the IBM Enterprise Storage Server — code-named "Shark" — a new generation of enterprise disk storage systems. Shark is the most scaleable storage system in the world (from

420 GB to 11 TB), and it provides the fastest throughput of any storage system in the world. Pitney Bowes Inc. becomes the first company to take delivery of a production level machine.

IBM announces support for Linux, the open-source operating system, becoming the only company to provide complete solutions of hardware, software and technical support for Linux.

IBM, the company that defined ultraportable computer design with such milestones as the ThinkPad 701C with a fold-out "butterfly" keyboard, unveils the ThinkPad 570 as its next-generation ultraportable PC. This powerful notebook PC is the first of a new breed of "transformer" systems that instantly converts from an all-in-one, desktop-replacement notebook PC into a thin and light ultraportable.

IBM announces the computer industry's first desktop PC equipped with speech recognition technology for small and growing businesses. The IBM PC 300GL Small Business Series features ViaVoice, speech recognition software designed to deliver simplicity and naturalness in speech dictation and voice control via the computer system.

IBM introduces two new high-performance hard drive models: the 36-gigabyte Ultrastar 36ZX — which can hold the equivalent of 1,188 feet of shelved books — and the Ultrastar 18LZK with the fastest seek time (4.9 msec) of any hard drive in the industry.

The company also launches a Deskstar 37GP as the world's highest capacity hard disk drive for desktop PCs. It can hold the equivalent text of a stack of paper four times higher than New York's World Trade Center or seven full-length feature films.

IBM begins shipping the IBM 340 megabyte microdrive, the world's smallest hard disk drive. Designed for use in digital cameras and small PCs, the microdrive has a disk platter the size of a large coin and weighs less than a AA battery.

Later, the company announces the Travelstar 25GS, the world's highest capacity notebook PC hard drive, holding four times as much data as the average notebook hard drive. It also has the highest rpm of any notebook PC hard drive. Introduced at the same time is the Travelstar 12GN, the most rugged hard drive available anywhere.
The Ultrastar 72ZX is unveiled as the world's highest capacity server-class hard drive, holding the equivalent of a floor of books at the New York Public Library in a drive the size of a paperback novel.

IBM reaches a major milestone in shipping its one-millionth copper PowerPC chip, just one year after shipping its first copper chip. IBM's copper PowerPC processors are helping to fuel the company's growth as a major OEM supplier to makers of networking gear. At the same time, IBM introduces the copper-based PowerPC 440, the industry's highest performance embedded processor to date, which can be used to boost the flow of traffic in the routers, hubs and switches that power networks like the Internet.

1999

Alliances

IBM and Dell Computer Corporation announce a $16 billion technology pact, the largest agreement of its kind in the information technology industry. As part of the agreement, Dell will purchase storage, microelectronics, networking and display technology from IBM for integration into Dell computer systems. In the future, the agreement is expected to include IBM's copper, silicon-on-insulator and other advanced technologies.

Later, IBM and EMC Corporation announce a five-year strategic technology and business alliance valued at $3 billion, which significantly expands an existing business relationship between the two industry leaders and will benefit many of IBM's and EMC's mutual customers. Under the terms of the accord, EMC will continue to purchase advanced IBM disk drives for incorporation into EMC's Symmetrix Enterprise Storage systems.

IBM completes a strategic agreement with Ford Motor Company to provide application development — including a unique Accelerated Solutions Center (ASC) — and deployment services to reduce time-to-market and yield worldwide cost efficiencies. At the ASC, IBM is to support up to 150 concurrent application projects in such areas as distribution, finance, human resources, marketing and sales, manufacturing and product development.

Lotus Development Corp. and IBM join with leading academic institutions to form the Institute for Knowledge Management. This initiative is the first of its kind for the information technology industry, and offers corporate enterprises and organizations the first opportunity to access the world's largest information base on Knowledge Management structures and applications.

IBM becomes the first corporate partner approved to connect to Abilene, a new high-speed network of leading research universities in the United States. Through Abilene, IBM researchers will collaborate with Internet2 research institutions on the development of advanced Internet applications that will enable IBM customers to exploit the full potential of e-business.

Science & Technology

For the seventh consecutive year, IBM is awarded the most U.S. patents. Awarded a record 2,756 of the patents issued by the U.S. Patent and Trademark Office in 1999, IBM tops the next closest company by more than 900 patents, for a total of more than 15,000 during the 1990s.

Among the inventions for which IBM is awarded U.S. patents in 1999 are: a method and apparatus for performing computer-based on-line commerce using an intelligent agent; a system for ordering items over a computer network using an electronic catalog; fundamental improvements to the Silicon-on-Insulator chip manufacturing process; and a means for significantly reducing the stresses on chip packaging caused by different thermal expansion rates.

IBM scientists achieve a major advance in semiconductor technology by combining both logic and memory circuits on a single piece of silicon. This breakthrough can significantly enhance the performance of many electronic products, from personal computers to cell phones and video

games, while reducing the number of chips inside and making the products smaller and less expensive.

IBM announces a $100 million research initiative to build “Blue Gene,” a supercomputer 500 times more powerful than the fastest computers today and about two million times more powerful than today’s top desktop PCs. Blue Gene will consist of more than one million processors capable of more than one quadrillion operations per second (one petaflop). That kind of speed and power will help scientists to model the folds of human proteins — which control all cellular processes in the body — to gain better insights into diseases and ways to control them.

IBM’s S/390 G5 Server sets a new record for Internet performance, posting a rating of 21,591 hits per second — a 50 percent increase over the previous record.

IBM researchers set a world record by sorting one trillion bytes of data in 17 minutes, about one-third the time of the previous record of 50 minutes. The sorting benchmark tests the efficiency of a computer’s input-output management and internode communication rather than pure calculating power. The achievement illustrates IBM’s commitment to providing its e-business customers with the ability to speed processing and manage valuable data.

An IBM RS/6000 S80 almost doubles the best Java performance claim to date and sets a world record for Web serving, while a cluster of five 12-way RS/6000 S70 Advanced Enterprise Servers set a new world record for transaction processing by clustered servers, surpassing all other computer makers in a key computing criteria used to evaluate both system performance and availability. Later in the year, an IBM RS/6000 S80 Enterprise Server sets a new world record for transaction processing performance by a single-server system.

IBM’s high-performance network routing products set a new record — more than 1,000 transactions per second — in a high-demand environment requiring extremely fast responses. In tests conducted by independent consultants, IBM’s high-performance routing products processed transactions up to 77 percent faster than similar offerings from Cisco Systems.

Company researchers and engineers set a new world record in hard-disk storage density, writing and reading data bits so small that an unprecedented 35.3 billion of them would fit within a square inch. The new record density is a 75 percent increase over the 20-billion-bit milestone IBM achieved earlier in the year and is expected to lead to disk drives that could store three times more information than those available today.
The IBM S/390 CMOS Cryptographic Coprocessor chip — a key product for providing secure e-business — receives the U.S. government’s highest certification for commercial security. To date, IBM offers the only two products to achieve a Federal Information Processing Standard 140-1 Level 4 certification.

IBM establishes the Deep Computing Institute, a $29 million research initiative that will bring together experts in academia and industry to address some of the world’s most challenging

business and scientific problems. Deep computing combines massive computation and very sophisticated software algorithms to attack problems previously beyond information technology. The Institute is headquartered at IBM's Thomas J. Watson Research Center in Yorktown Heights, N.Y.

Facilities
IBM announces plans to create the IBM Design Center for e-transaction processing, a 10,500-foot facility in Poughkeepsie, N.Y., where customers can explore the leading edge of e-commerce and develop new approaches to e-business.

Corporate Citizenship
IBM introduces the IBM IntelliStation E Pro — the world's first personal computer to be made from 100 percent recycled resin for all plastic parts. IBM's integration of recycled plastics in new system production is unmatched in the computer industry and demonstrates IBM's technological leadership in introducing products that satisfy both the customer's requirements for features and price, and are environmentally conscious.

2000

Business Performance
IBM revenue climbs to $88.4 billion, one percent more than the year before, and net earnings of $8.1 billion are five percent ahead of 1999. There are 316,303 employees and 664,291 stockholders at year end.

IBM handles 96 percent (400,000 a month) of its procurement invoices on the Web and online procurement saves the company $377 million (up from $270 million in 1999).

Organization
Samuel J. Palmisano becomes president and chief operating officer, and John M. Thompson becomes vice chairman.

IBM names Harriet P. Pearson as its first chief privacy officer to guide the company's privacy policies and practices, lead initiatives across IBM to strengthen consumer privacy protection and further the company's leadership efforts in those areas.

IBM forms a Life Sciences business unit to deliver leading-edge IT solutions for bio-technology, genomic, e-health, pharmaceutical, agri-science and other life sciences industries. The new organization brings together the company's strengths in such areas as e-business, supercomputing, data and storage management, data mining and knowledge management along with computational biology and parallel computing.

IBM acquires Aragon Consulting Group, a marketing research and strategy firm based in St. Louis.

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IBM acquires OpenOrders Inc., a leading provider of enterprise-scale order management and fulfillment software for e-commerce.

Products & Services

IBM introduces the IBM eServer, a new generation of servers featuring mainframe-class reliability and scalability, broad support of open standards for the development of new applications, and capacity on demand for managing the unprecedented needs of e-business. The new servers feature technology from IBM's high-end servers applied across the entire product line, and include: the eServer zSeries -- the most reliable, mission-critical data and transaction server in the industry; eServer pSeries -- the most powerful, technologically advanced UNIX server; eServer iSeries -- the high performance, integrated business server for mid-market companies; and the eServer xSeries -- the affordable Intel-based server with mainframe-inspired reliability technologies.

IBM unveils the eServer zSeries 900, the first mainframe built from scratch with e-business as its primary function. The reinvented mainframe is built to handle the unpredictable demands of e-business, allowing thousands of servers to operate within one box. Along with the new design, IBM also introduces z/OS, a new 64-bit operating system.

IBM announces the IBM eServer pSeries 680 -- code-named "Turbo" -- as the most powerful commercial server in history. Built on the award-winning RS/6000 S80 design, the p680 immediately captures eight major performance benchmark records using up to 24 copper microprocessors with IBM's breakthrough Silicon-on-Insulator (SOI) technology.

The company reports that it has reached a new milestone in server sales with the shipment of the 1,000th RS/6000 S80 server just four months after its product launch. Six months later, IBM announces "Blue Hammer," the world's most powerful UNIX cluster system dedicated to Web-based commerce, to bring the comprehensive management capabilities of IBM's industry-leading supercomputers to its top-performing RS/6000 S80 enterprise server.

IBM debuts a commercial version of ASCI White -- the most powerful supercomputer in the world. The new RS/6000 SP system uses performance-enhancing copper microprocessors, silicon switching technology and advanced software to provide e-businesses with the unmatched processing speed, scalability and reliability needed for demanding e-commerce applications. Also introduced is the RS/6000 44P Model 270, the world's fastest 4-way Web Server. The first entry UNIX server to implement performance-enhancing copper technology, the Model 270 is ideal for running sophisticated e-commerce applications as well as general business applications used by small- and medium-sized companies. Complementing the Model 270, IBM also rolls out the RS/6000 44P Model 170 uniprocessor system.
The Finnish academic supercomputing center -- CSC -- selects an ultra-powerful IBM RS/6000 SP system as its next generation supercomputer for the Ministry of Education. Upon installation, the IBM system will be the most powerful commercial supercomputer in Europe. IBM reports that its next generation RS/6000 SP system with DB2 Universal Database Version 7.1 set a new

record for business intelligence performance in the TPC-H benchmark, easily beating the previous record at a price/performance ratio three times better than the competition.

IBM begins volume shipments of the new line of AS/400e servers powered by the world's first production microchips made of silicon-on-insulator transistors and copper wiring.

The IBM IntelliStation Z Pro NT-based workstation is announced in January, demonstrating IBM's ability to support companies integrating both UNIX- and Windows NT-based workstations in heterogeneous environments. Complementing the new IntelliStation, IBM offers the T56A 15-inch Thin Film Transistor flat panel monitor and the P96 19-inch cathode ray tube monitor. Five months later, IBM rolls out the IntelliStation M Pro and Z Pro, affordable NT computer workstations for tackling complex digital design projects. And four months after that, the company announces the IntelliStation E Pro workstation to deliver workstation power for the price of a PC, along with new models of the IntelliStation M Pro and Z Pro.

IBM introduces in March the Netfinity 7100 and 7600 four-way servers built for Windows 2000 and which leverage IBM's X-architecture Super Server technologies. That same month, IBM and Microsoft announce a new Internet appliance -- the IBM Netfinity A100 -- using an operating system based on Windows 2000 technologies for Web hosting and serving. One month later, IBM debuts new Netfinity thin servers designed to deliver the highest computing power per square foot on Intel based platforms. With the new offerings, known as the 4500R and 6000R, IBM now provides the industry's most complete rack optimized server product line for Linux, Windows and Novell operating systems.

IBM announces the world's most powerful Intel-based server, the 64-processor NUMA-Q E410, along with the industry's most affordable technology-leading two-way server, the Netfinity 3500 M20.

IBM says in March that the US. Commerce Department has approved the sale of a special series of secure IBM PC 300PL and IntelliStation PCs with 256-bit digital key decryption and management capabilities to businesses, organizations, governments and people around the world. The following month the new low-cost desktop IBM PC 300, the company's smallest, is introduced.

In IBM's most dramatic and significant rollout of desktop technology since the Personal Computer of 1981, the company announces in March the NetVista brand of new personal computing devices, including next-stage PCs, Internet access devices and thin clients. Among the products introduced are the NetVista All-in-One high performance device, NetVista Legacy-Free PC, NetVista Internet Appliance, and NetVista Zero Footprint Thin Client. Two months later, IBM announces the All-in-One NetVista X40 and S40 which extend the classic ThinkPad design to the desktop. The company broadens its NetVista family of desktop business computers in June with the A20, A40 and A40p models. It launches the NetVista A20i, A20m, A40i, A20 and A40

systems to round out the NetVista brand of desktop computer devices in September, and announces the NetVista A60i desktop computer in November.

IBM announces the ThinkPad X series, the ultraportable full-featured notebook computer slimmer then a deck of cards and lighter than a half-gallon of milk.

In October, IBM introduces the eServer xSeries 330, the industry's first 1 Ghz thin server and the first web application server in the IBM eServer family. A few days later, it launches a new line of eServer appliances, including the xSeries 130 and 135, two speedy web-hosting appliance servers; xSeries 150, a storage appliance with scalability up to 1.7TB; iSeries 400 model 270 and model 820, two Lotus Domino server appliances. And in November, the company announces the eServer x200 and x220, two servers designed for small and medium businesses.

IBM ships 73 percent more terabytes of storage than in 1999, increasing shipped disk storage to more than 11,000 terabytes in 12 months. Combined, all IBM "Shark" enterprise storage servers worldwide hold more than seven petabytes of data, roughly equal to the printed text of 700 U.S. Libraries of Congress.

The company launches a new technology initiative, code-named "Storage Tank," to deliver storage networking, i.e., a universal storage system capable of sharing data across any storage hardware, platform or operating system. In March, IBM announces two products that set world records for data storage: the Deskstar 75GXP, holding 75 gigabytes (GB) of data, and the Deskstar 40GV, holding 40 GB and setting a new areal density record of 14.3 billion bits per inch. The next month, IBM introduces the world's most versatile, highest capacity notebook computer hard disk drives and the first with built-in features designed to deliver smoother, more lifelike video images. The new offerings include the Travelstar 32GH, 30GT and 20GN. IBM reports in August that it is the first company to ship products based on a breakthrough industry standard technology for tape storage. Using IBM's Linear Tape-Open Ultrium products, customers can store information with up to twice the capacity and speed and about the same cost of existing competitive technology.

IBM begins to market new disk storage systems to original equipment manufacturers (OEM). The new offerings include Windows NT and UNIX storage server solutions and network attached storage (NAS) appliances. The new solutions incorporate industry-leading RAID controllers from Mylex Corporation, which was acquired by IBM in 1999 to strengthen IBM's NT and UNIX attached storage offerings, as well as its storage area network and NAS solutions portfolio. The first product to debut from the marketing initiative is the IBM ProFibre Storage Array, about the size of a briefcase and capable of storing the contents of a large academic research library.

IBM introduces the new IBM Network Station Windows-based Terminal, designed for customers who want a fast, simple way to access Windows applications and other server-based applications while enjoying thin-client benefits; triples its line of space-saving Thin Film Transistor flat panel

monitors by offering the IBM T54A, T74A and T86A; and announces the T84H hybrid monitor, an 18-inch flat panel monitor to process both analog and digital signals.
In April, IBM rolls out the Web-ready Infoprint 21 workgroup laser printer, which allows users to print documents stored on the Internet or a local hard drive without having to open a single file. Five months later, IBM announces the Infoprint 12 desktop laser printer for small and home office environments. Also in 2000, IBM introduces Infoprint Color 130 Plus, breakthrough color printing technology that bridges the gap between transactional statements and personalized color graphic printing applications for commercial and corporate print shops, and brings to market the IBM 4400 series, a new family of thermal printers designed to enhance supply chain operations.

IBM announces a $1 billion commitment to data management leadership and B2B transactions and introduces DB2 Universal Database Version 7 -- the only database in the industry to fully integrate e-business, business intelligence and content management capabilities. During the year IBM introduces WebSphere Commerce Suite version 4.1 and WebSphere Commerce Studio, e-commerce software to help companies move to the next generation of e-business; WebSphere Transcoding Publisher, new software that dynamically translates Web information, including text and images, to a format readable on a variety of Internet appliances; and WebSphere Commerce Suite, Marketplace Edition as the first software to enable businesses to create online marketplaces that interact with handheld devices such as mobile phones, PDAs and pagers.

IBM introduces Linux software and services for the S/390 enterprise server. In November, the company announces the IBM Small Business Suite for Linux -- including DB2 Universal Database, WebSphere Application Server and Lotus Domino -- the first Linux-based integrated software solution for small businesses.

In March, IBM unveils the IBM Content Manager, a first-of-a-kind offering to help companies manage the exploding amount of digital information facing organizations in the e-business world. Content Manager, based on DB2, sits at the heart of some of the world's largest media collections, including the Dutch National Library, the National Palace Museum in Taiwan, the Vatican Library and the State Hermitage Museum in St. Petersburg, Russia.

IBM introduces ViaVoice for Windows, Release 8.0, a family of voice recognition software.

In building and managing the technology infrastructure for the Sydney 2000 Olympic Games, IBM turns in a Gold Medal performance. The official Games Web site, powered by IBM, handles unprecedented Internet traffic with 11.3 billion hits, a 1,700 percent increase over the Nagano Games official site in 1998. More than 13 million lines of software code are written and thoroughly tested before the Games begin. Nearly 6,000 people provide technology support for 300 medal events in 37 sports competitions held in 39 venues. More than 7,300 IBM PCs and ThinkPads are connected to the Olympic Games information technology network, 540 Netfinity Servers support the Games Management System by storing massive amounts of data, 50 IBM RS/6000 PC and three RS/6000 SP servers manage and organize data generated by Olympics.com and an intranet system, and three S/390 Parallel Sysplex power the Central Results System.

2000

IBM Global Services adds hosted storage and storage management to its portfolio of network-delivered services.

Texaco awards a five-year, $100 million to IBM Global Services to be its primary information technology (IT) service provider. Aventis, a leading life sciences company, and IBM sign a ten-year, $1.5 billion global IT services agreement under which IBM will manage and run core elements of Aventis' IT operations. IBM reports that it will provide IT services to The New Power Company, a new energy services company launched by Enron Corporation, under a ten-year agreement valued at up to $1.5 billion. In one of Europe's largest outsourcing agreements, The Bank of Scotland awards IBM a ten-year, $1 billion contract to manage and operate the Bank's IT infrastructure. IBM announces a 15-year, $1 billion global technology services agreement with mg technologies ag, an IT company. Westpac Banking Corporation selects IBM to supply its IT services for the next ten years in a $2.3 billion agreement. IBM and Xcel Energy, one of the 10 largest utilities in the United States, announce an 11-year strategic relationship to strengthen the latter's technology infrastructure while cutting IT costs in 12 states. The total value of the relationship now exceeds $1.2 billion.

During its six days of coverage, the Official GRAMMY Webcast, designed and hosted by IBM, registers 119 million hits, 9.6 million page views and two million visits. More tennis fans than ever before enjoy a "virtual seat" at the world-famous Wimbledon tennis Millennium Championships, recording 2.3 billion hits on the IBM-designed and delivered official Web site. IBM builds and hosts the official American Theatre Wing's Tony Awards Web site. Weather.com, one of the top 25 Web sites, announces that it will use IBM technology and services to serve its massive volume of maps and images on the popular Linux operating system.

IBM solutions, including the Netfinity 4000R servers, will become part of the Internet infrastructure for weather.com, The Weather Channel Web site and the world's leading source of Web-based weather information.

Edison Schools Inc., the leading U.S. private manager of public schools, selects IBM to help build a new model for technology in schools. IBM will provide Edison with a technology solution, including Netfinity Servers, IBM NetVista Desktops, ThinkPads, network infrastructure and Tivoli enterprise network management software for its rapidly growing national network of K-12 schools.

The company introduces IBM Insight at School, a new business intelligence solution for the K-12 market, which provides schools with the technology, consulting and services that will help them make more informed decisions to improve the learning process.

IBM announces the establishment of a $500 million global fund to significantly enhance its Net Generation financing program and expand the company's support to fast-growing business-to-business Internet companies. It introduces Home Page Reader 3.0 for Windows, a low-cost, easy-to-use talking Web browser allowing many visually impaired and blind users to

buy, sell or trade on the Web for the first time. IBM sells its information services extended directory assistance solution to, and retains an equity interest in, Information Services eXtended, Inc., a new company formed by Spencer Trask Intellectual Capital Company LLC.

Alliances

IBM and retail industry applications leader Retek announce an expansion of their strategic alliance to produce significant benefits for the worldwide retail industry while generating revenues of more than $1 billion by 2003 for the two companies.

IBM joins with Microsoft, Avaya, Arthur Andersen and Hanny Holdings to launch Enfrastructure Inc., the first full-service infrastructure and technology provider.

IBM China Company Limited and China Great Wall Shenzhen Co., Limited announce the formation of Beijing GKI Electronics Co., Ltd. as a joint venture to provide advanced printed circuit board assembles to Nokia joint venture companies.

Hitachi, IBM, LG Electronics, Matsushita Electric (Panasonic), Nortel Networks, Seagate Technology, Solectron and Toshiba, along with technology partners Ariba and i2 announce the creation of e2open.com, an independent, global business-to-business e-marketplace for the computer, electronics and telecommunications industries.
Bank of America, The Chase Manhattan Bank and IBM form Viewpointe Archive Services, a new check image archive company to provide Web-based check imaging.

IBM acquires equity in Structural Bioinformatics, Inc., the company's first equity investment in a life sciences business.

Science & Technology

For the eighth consecutive year, IBM receives the most U.S. patents, some 2,886 in all and 850 more than the closest competitor.

IBM is awarded the 2000 U.S. National Medal of Technology for the company's record of innovation in storage technology. This marks the seventh time that IBM and its scientists have received the nation's highest award for technological innovation, more than any other company or organization.

IBM scientists say they have discovered a way to transport information on the atomic scale that uses the wave nature of electrons instead of conventional wiring. This new phenomenon, called the "quantum mirage" effect, may enable data transfer within future nanoscale electronic circuits too small to use wires.

2000

IBM's Alamaden Research Center develops the world's most advanced quantum computer and scientists demonstrate that such devices can solve problems that are impossibly hard for conventional computers.

Company researchers demonstrate breakthrough results in developing a new family of experimental high-speed computer circuits that run at test speeds up to five times faster than today's top chips. The new circuits employ an innovative design called "Interlocked Pipelined CMOS" to reach speeds of 3.3 to 4.5 billion cycles per second using conventional silicon transistors.
IBM reports that it has developed a new method for building microchips that can deliver up to a 30 percent boost in computing speed and performance. The new technique uses a material known as a "low-k dielectric" to shield millions of individual copper circuits on a chip, reducing electrical "crosstalk" between wires that can hinder chip performance and waste power.

IBM begins production of powerful new microchips for servers, communications equipment and pervasive computing products, using the most advanced chip-making technology ever developed. The new technology -- named CMOS 9S -- unites for the first time IBM innovations in copper wiring, silicon-on-insulator transistors and improved, "low-k dielectric" insulation to build chip circuits nearly 800 times thinner than a human hair.

Scientists in IBM laboratories in New York and California combine nanotechnology with chemistry to make a radically new class of magnetic materials that may allow future computer hard disks and other data systems to store more than 100 times more data than current products.

IBM, Infineon Technologies, and UMC announce plans to jointly develop advanced technologies for use in the production of logic chips with circuit sizes from 0.13 to 0.10 micron. IBM says it is developing a series of chips based on InfiniBand technology to help link multiple computer systems and peripherals such as hard drives to work together as a single high-performance server. IBM researchers unveil IBM Memory eXpansion Technology that doubles the memory capacity of computer servers, a breakthrough that could save Internet Service Providers and other large technology installations millions of dollars.

IBM announces an initial $100 million investment to develop information technology solutions and partnerships to enable the breakthrough work being conducted to interpret the complex genetic code. IBM and NuTec Sciences, Inc., report they are building the world's largest commercial supercomputer -- a 7.5-teraflop computing cluster -- which NuTec will use to investigate how genes interact in the human body to cause life-threatening diseases. [1218]

Scientists from IBM, Compaq and AltaVista compete the first comprehensive "map" of the World Wide Web and uncover divisive boundaries between regions of the Internet that can make navigation difficult.

IBM ships the world's clearest computer display -- 12-times sharper than current displays -- ten years sooner than thought possible.

Facilities
IBM makes the largest capital investment in its history -- $5 billion -- and announces plans in October to build the world's most technologically advanced chip-making facility in East Fishkill, New York. The new $2.5 billion facility will combine for the first time anywhere IBM chip-making breakthroughs such as copper interconnects, silicon-on-insulator and low-k dielectric insulation on 300mm wafers. Planned to begin operations in late 2002, the new facility will add 1,000 new jobs as it reaches full production the following year.

That same month, IBM announces plans to invest $300 million to build an organic chip packaging manufacturing facility in Shanghai, China, to support the company's growing semiconductor business.

Corporate Citizenship
IBM contributes more than $126 million to programs around the world that help people in need. Individual employees add another $49 million through matching grants and donations to nonprofit organizations and educational institutions and volunteer 4 million hours of their time to a broad range of local issues.

2001

Business Performance
IBM's revenue is $85.9 billion, a decline of 3 percent from 2000, and net income is $7.7 billion, down 4.9 percent from the year before. There are 319,876 employees and 673,967 stockholders at year end.

Organization
IBM acquires CrossWorlds Software, Inc., a leading provider of software to automate business processes that integrate multiple applications. The acquisition further strengthens IBM's business in the fast-growing e-business infrastructure software segment.

IBM acquires Mainspring, a digital business strategy consulting firm in April, and the assets of Informix Software -- the database business of Informix Corporation -- in a cash transaction valued at $1 billion in July.

Nextant, a leading technology and consulting firm in the energy field, purchases IBM's Chem Systems business unit.

Products & Services
The company reports that it has nearly doubled the mainframe's ability to process highly secure Internet transactions, and says the IBM eServer z900 is the first server to achieve a record 3,850 transactions per second. IBM ships its 1,000th IBM eServer z900 on September 24 to Boscov's, the largest family-owned department store company in the United States.

2001

In October, IBM announces the eServer p690 ("Regatta") as the world's most powerful UNIX server, crowning a five-year effort to deliver a new class of UNIX system that incorporates microprocessor breakthroughs and mainframe technologies. When tackling the most complex problems, multiple p690 servers can be linked together to create supercomputers powered by more than 1,000 processors. Later in the month, IBM reports that "Regatta" sets a world record for processing speed on the important Fluent engineering benchmark. The company begins shipping "Regatta" in volume in December.

The company announces the IBM eServer p660 Model 6M1, the world's most powerful midrange server. In October, it introduces the IBM eServer p610 as the world's most powerful entry server, a two-way UNIX system that provides industry-leading performance, wireless manageability features and advanced self-healing technologies.

World Access, a global provider of telecommunications services, purchases the largest-ever IBM eServer iSeries system -- the eServer i840 -- to process billings for more than 100 million telephone calls per day.

The Personal Systems Group says it will use "self healing" technology in an online customer service infrastructure to diagnose and resolve common information technology (IT) problems.

IBM unveils plans for the eServer x430, a powerful 64-way server designed to bridge the gap between smaller Intel-based platforms and the mainframe. The x430 will be the first enterprise server designed to take full advantage of the new Linux Application Environment. … The company rolls out the eServer x250 (4-way), eServer x350 (4-way) and the eServer x370 (8-way), all with the new Intel 900 MHz Pentium III Xeon processors. … Also introduced are the IBM eServer xSeries 300, a powerful and affordable thin (1.75-inch) server and a new series of server appliances to provide up to a fivefold increase in the speed of delivering Web content to end users. … IBM debuts the IBM eServer x380, IBM's first Itanium-based server, which, with new IntelliStation Z Pro workstations, will form a new Linux supercluster at the National Center for Supercomputing Applications. … In June, IBM announces eServer xSeries 232 and 342 that include intelligent management features to support IBM's Project eLiza initiative, a multi-billion dollar program aimed at creating a realm of self-managing servers requiring little or no human interaction. The new systems offer small and medium businesses access to mainframe and self-healing technologies at entry-level prices. … In August, the company introduces the IBM eServer x200VL, the industry's most powerful small business server, along with the x200 and x220.

With the IBM eServer Cluster 1300, the company introduces the industry's first prepackaged Linux clusters integrating best-of-breed components into a single, easy-to-order and -deploy package. The Cluster includes the IBM eServer x330, the industry's most powerful thin server, and the x342.

2001

IBM rolls out its first Intel-based servers featuring the IA-32 Intel Xeon Processor MP ("Foster" MP) and incorporating IBM's Enterprise X-Architecture. The new eServer x360 marks the debut of IBM's XA-32 core chip set (code named "Summit") that features IBM's most advanced Copper Chip and Silicon-on-Insulator breakthroughs and mainframe-inspired technologies to help customers consolidate scores of Intel servers and reduce total cost of ownership. The company begins shipping the new server in December.

IBM becomes the first vendor to offer an all-wireless line of products and services to make it easier for companies to extend their business to mobile devices. Included in the move are IBM's lines of ThinkPad notebook computers, pervasive devices and servers; software, support and services to give customers mobile access to critical applications in the office, on the road or anywhere in between; and programs to enable IBM's network of 90,000 business partners to sell and develop wireless solutions.

IBM announces a new rack-mounted computer workstation -- the IntelliStation R Pro -- and the flat-panel T210 monitor that help free up space and reduce energy and maintenance costs on cramped financial trading floors. … In addition, the company rolls out the IntelliStation M Pro, using microprocessors based on IBM's copper chip technology for improved 3D performance.

IBM's desktop product launches in 2001 include: the NetVista A20 and A20i … NetVista A60 and A60i … the NetVista X40 and X40i all-in-one desktop PCs, along with a new wireless keyboard and mouse … new NetVista A60 and A61 systems featuring Pentium 4 processor speeds of up to 1.7GHz … the new NetVista A21 … the NetVista M series, focusing on maximizing performance and stability … an upgraded NetVista A series … and an improved NetVista X series. … In October, IBM announces the most comprehensive set of changes to its lineup of NetVista thin clients in more than two years, creating a new suite of products that leverage the Linux operating system. Included in the announcement are two new thin client devices -- the NetVista N70 and the NetVista N2200 Thin Client Linux Express.

IBM's notebook product launches in 2001 include: the ThinkPad A21e essentials model -- an affordable commercial notebook for budget-conscious businesses … ThinkPad i Series 1200 and 1300 wireless notebook models … the ThinkPad A22m and A22p, offering many of the capabilities of a desktop workstation with the flexibility of a mobile PC … the ThinkPad T22, with the latest technology in a thin and light form … the ThinkPad X21, featuring low voltage Intel processors and nearly five hours of battery life … a new ThinkPad R series line (R30) … a new ThinkPad A series (A30) … an improved ThinkPad X series (X22) … and the refreshed ThinkPad T series (T23).

IBM announces the general availability of the ThinkPad TransNote, the world's first portfolio notebook combining a mobile computer with a digital notepad and featuring one of the industry's most radical design changes since the clamshell.

2001

IBM introduces a new line of workgroup printing solutions, including the Infoprint 1120, 1125, 1130, 1140 and 1145 printers. The company also announces the IBM Infoprint 4100 family as the next generation of high-speed continuous-form printers, and the Infoprint 1116, a 16-page-per-minute, entry-level laser printer.

The company unveils the T220, the world's highest resolution flat panel monitor, with a 22.2-inch screen that shows 12-times more detail than current monitors.

IBM announces a new portfolio of products and technology to lead the industry's rapid migration to open storage networking. Included in the announcement are the industry's first open NAS Gateway -- IBM Total Storage Networked Attached Storage 300G -- which allows Local Area Network-based clients and servers to easily interoperate with an existing Storage Area Network; and the IBM TotalStorage IP Storage 200i, a high-performance, low-cost iSCSI storage appliance connecting users to pooled storage on a network using Internet protocols.

IBM rolls out a comprehensive lineup of new storage networking products, including: IBM TotalStorage NAS 200, a tower (one processor and up to 216 GB) or rack (two processors and up to 1.74 GB); TotalStorage NAS 300, designed for mission critical applications; and TotalStorage NAS 300G, to bridge the gap between local area network and a storage area network.

IBM becomes the first storage vendor to offer mainframe customers a Fibre Channel-based connection (FICON) to their high-end disk systems. FICON provides peak data transfer rates almost six times faster than the current ESCON technology employed by competitors. In addition, the company rolls out the Model B20 and Model B10 of IBM's TotalStorage Virtual Tape Server that for the first time incorporate IBM's patented copper chip technology.

In October, IBM announces an array of storage networking products for mid-market customers, including a new storage server -- the IBM TotalStorage Fibre Array Storage Technology 700 Storage Server -- and enhanced network attached storage and Internet protocol storage products designed to provide increased scalability and performance.

IBM says that it will deliver the broadest portfolio of Linux storage products in the industry, including high to low end disk and tape systems.

The company is the first to mass-produce computer hard disk drives using a revolutionary new type of magnetic coating that is expected to eventually quadruple the data density of current hard disk drive products. Key to IBM's data storage breakthrough is a three-atom-thick layer of ruthenium, a precious metal similar to platinum, sandwiched, like "pixie dust," between two magnetic layers. In November, IBM introduces Deskstar 120GXP, the industry's lowest-power consumption 3.5-inch desktop hard drive with a 120 GB capacity and performing at 7200 rpm; and the Travelstar 60GH and Travelstar 40GN family.

2001

IBM announces the availability of z/OS, a new self-managing 64-bit operating system for the IBM eServer z900. z/OS features Intelligent Resource Director, an exclusive IBM technology that makes the z900 the only server capable of automatically reallocating processing power to a given application on the fly.

IBM says its middleware software portfolio will capitalize on the company's new eServer p690 ("Regatta") to deliver an e-business infrastructure solution offering the highest speed connections in the world running on a UNIX system.

IBM announces the availability of the Globus Toolkit for IBM eServer systems. The Toolkit is the middleware that joins large numbers of disparate servers into huge mega-computers, allowing application developers to create computer Grids in which users share supercomputing power, data and applications via the Internet.

IBM launches WebSphere Translation Server software to help remove language as a barrier to global communication and e-commerce by enabling businesses to provide real-time Web pages, e-mail and chat conversations in multiple languages. … The company announces WebSphere Commerce Suite Version 5.1, new e-commerce software to cut through the complexities and costs of selling goods across borders and cultures. … IBM unveils WebSphere Technology For Developers as the industry's first software for Web services. … IBM introduces WebSphere Version 4 software, the first in the industry to fully address a fundamental shift in the e-infrastructure market, where one-size-fits-all software has become obsolete.

The company introduces IBM Director, a systems management software solution which includes an advanced self-healing computer feature called Software Rejuvenation to automatically reduce server downtime by predicting and repairing software failures before they happen.

IBM announces the worldwide availability of iSeries Connect, an integrated software product to help small to mid-sized customers link their businesses to expanding global e-marketplaces. Two months later, the company also announces across-the-board support of open Internet standards for its infrastructure software to provide businesses with new levels of connectivity on the Web and new software capabilities to exploit that connectivity.

CommerceQuest becomes IBM's 10,000th DB2 Universal Database licensee.

IBM Microelectronics announces a new family of chips -- the IBM PowerPC IAP (Internet Appliance Platform) -- that is expected to help launch a wave of lower-power Internet-attached consumer electronics.

IBM unveils 30 new Web-hosting services to meet growing market demand, and Web-hosting contracts exceed $1 billion during the first half of the year.

2001

IBM is selected by a consortium of four U.S. research centers in August to build the world's most powerful computing Grid, an interconnected series of Linux clusters capable of processing 13.6 trillion calculations per second. The Grid system -- known as the Distributed Terascale Facility -- will enable thousands of scientists around the United States to share computing resources over the world's fastest research network in search of breakthroughs in life sciences, climate modeling and other critical disciplines. That same month, IBM is selected to partner with several centers in the U.K. National Grid to link a massive network of computers throughout the United Kingdom, leveraging the company's expertise in scalable servers and storage, open standards, self-managing technologies , services and e-business software.

The Recording Academy and IBM launch the 43rd Annual GRAMMY Award Webcast. … For the sixth consecutive year, IBM produces and hosts the 2001 Masters Tournament Web site, including, for the first time, wireless access, Internet radio and expanded remote camera coverage with streaming video. … IBM builds and hosts the Tony Awards Web site in partnership with Tony Award Productions. … NHL.com, the official Web site of the National Hockey League, decides to run its Web site on IBM Linux systems as part of an overall site improvement plan.

As part of the company's Project eLiza -- a multi-billion dollar program to develop self-managing systems that reduce the cost and complexity of the IT infrastructure -- IBM delivers the industry's first services to automate key e-business processes that predict, identify and intercept problems on a real-time basis; a partner program in which major IT vendors and customers develop a road map for advanced e-business technology; and new technologies for IT security and management, including software from Tivoli.
IBM announces a worldwide initiative to align its extensive safety and security offerings within an expanded IBM Global Services Practice and to create a new corporate-level Global Solutions Office to address broader and emerging safety and security issues in industry, global commerce and society.

IBM offers IBM StartNow Wireless Solutions to help small and medium businesses connect a mobile work force to corporate data.

AstraZeneca, one of the world's largest pharmaceutical companies, signs a $1.7 billion, seven-year, outsourcing agreement with IBM. The agreement covers the provision of IT infrastructure services to 45 countries, and is the largest of its kind in the pharmaceutical industry.

IBM and Carrier unveil a new wireless remote monitoring and control service called "Myappliance.com" as the first Web-enabled air conditioner that wirelessly communicates in real time with other devices, such as mobile phones and PCs. The new service will be built on an e-infrastructure supported by IBM services, software and hardware.

2001

Building on a 20-year relationship, IBM and J. D. Edwards form an alliance to jointly sell and market collaborative commerce solutions to selected markets and accounts within the public sector and the wholesale distribution industry.

Using IBM technology and the new IBM NetVista Internet Appliance, crew members on Royal Caribbean International's newest ship, *Radiance of the Seas*, receive onboard access to e-mail, Internet and productivity applications.

Alliances

IBM, Hitachi, Ltd., and its wholly-owned subsidiary, Hitachi Data Systems, announce a strategic technology agreement to extend interoperability between the companies' storage servers and allow customers to more easily deploy open storage networks.

Pfizer, Microsoft and IBM form a new independent company -- Amicore -- to develop software and services for physician practices.

IBM enters an alliance with Internet HealthCare Group to provide IHCG's partner companies with IBM information technology.

IBM and LSI Logic Corporation complete a technology licensing agreement to accelerate the integration of high performance digital signal processor capability into custom chips for next-generation networking equipment, wireless handsets and other advanced communication products.

IBM and eBay Inc. form a strategic software, sales and marketing alliance.

IBM and MDS Proteomics form an alliance to speed drug development for a wide range of diseases.

IBM and Trilogy establish an alliance to jointly market and deploy e-business and channel management solutions to Global 2000 companies in the financial services and automotive industries.

ALLTEL and IBM form a joint venture to provide Corebank, a continuous real-time core banking system to European financial services organizations.

IBM and NeTune Communications launch an alliance that includes an IBM equity investment in NeTune, a $112 million outsourcing agreement and a commitment to jointly develop digital solutions for the entertainment industry.

IBM and Financial Fusion agree to jointly offer Global 1000 financial institutions in North America a broad suite of e-business services and solutions for online retail banking and capital markets.

2001

MCNC, a nonprofit corporation, and IBM announce they will collaborate on one of the first computer Grids in the United States to offer computing, data storage and networking resources for life sciences research. The new Grid system will be accessible to thousands of researchers and educators throughout North Carolina to help accelerate the pace of gnomic research.

Science & Technology

For the ninth consecutive year, IBM is awarded the most U.S. patents -- with a record 3,411 -- for a 20 percent increase over its previous record set in 2000. This achievement makes IBM the first patent holder to be granted more than 3,000 U.S. patents in a single year.

IBM scientists develop a breakthrough transistor technology that could lead to the production of a new class of smaller, faster and lower power computer chips than are now possible with silicon. They build the world's first array of transistors out of carbon nanotubes -- tiny cylinders of carbon atoms that measure as small as 10 atoms across and are 500 times smaller than today's silicon-based transistors.

The U.S. Government dedicates ASCI White, the world's fastest supercomputer at the Lawrence Livermore National Laboratory in California. ASCI White, an IBM system, covers a space the size of two basketball courts and weighs 106 tons. It contains six trillion bytes (TB) of memory, almost 50,000 times greater than the average personal computer, and has more than 160 TB of IBM TotalStorage 7133 Serial Disk System capacity -- enough to hold six Library of Congress book collections.

IBM and the Department of Energy's Lawrence Livermore National Laboratory announce they will jointly design a new supercomputer in the Blue Gene family. Called Blue Gene/L, the machine will be at least 15 times faster, 15 times more power efficient and consume about 50 times less space per computation than today's fastest supercomputers.

The U.S. National Center for Atmospheric Research selects IBM to provide the world's powerful supercomputer for predicting climate changes. Code-named "Blue Sky," the system will be powered by IBM's SP supercomputer and IBM eServer p690 systems, and is designed to achieve a peak speed of seven trillion calculations per second with 31.5 trillion bytes of IBM SSA disk storage.

IBM and The National Center for Supercomputing Applications (NCSA) at the University of Illinois announce that NCSA will install two IBM Linux clusters, creating the world's fastest Linux supercomputer in academia. The clusters will have two teraflops of computing power and will be used by researchers to study fundamental scientific questions, such as the nature of gravity waves first predicted by Albert Einstein.

NASA astronauts on *Atlantis* and *Discovery* shuttle missions successfully store and bring back digital images on IBM's award-winning one-gigabyte, one-inch IBM Microdrive.

2001

IBM researchers discover a new process for manufacturing computer displays that can vastly improve screen quality and viewing angles while saving manufacturers millions of dollars.

IBM achieves a breakthrough method to alter silicon -- the fundamental material at the heart of microchips -- which is expected to boost chip speeds by up to 35 percent. Called "Strained Silicon," the technology stretches the material, speeding the flow of electrons through transistors to increase performance and decrease power consumption in semiconductors.

Scientists at IBM's Almaden Research Center perform the world's most complicated quantum-computer calculation to date. They cause a billion-billion custom-designed molecules in a test tube to become a seven-qubit quantum computer to solve a simple version of the mathematical problem at the heart of today's data security cryptographic systems.

IBM builds the world's fastest silicon-based transistor using a modified design and IBM's proven silicon germanium technology to reach speeds of 210 GigaHertz while drawing just a milliamp of electrical power. The new transistor will drive communications chips to speeds of 100GHz within two years -- five times faster and four years sooner than recent competitive approaches.

IBM scientists make a "voltage inverter" -- one of the three fundamental logic circuits that are the basis for all current computers -- from a carbon nanotube, a single tube-shaped molecule of carbon atoms that is 100,000 times thinner than a human hair.

IBM and the Korea Institute of Science Technology and Information agree that IBM will provide one of the 10 largest supercomputers in the world -- capable of 4.24 trillion calculations per second -- for use in Korea's life science and high performance research efforts.

IBM unveils the IBM PowerPC 405LP, the first of a family of chips capable of ultra-low-power operation and ideal for battery-powered portable consumer electronic devices.

Sony Computer Entertainment Inc., IBM and Toshiba Corporation announce plans to research and develop an advanced chip architecture for a new wave of devices in the emerging broadband era.

IBM joins the Extreme Ultra Violet LLC industry consortium to support the development of EUV lithography technology which would allow semiconductor manufacturers to etch circuit lines smaller than 0.1 micron.

IBM researchers disclose advances in the development of an alternate type of transistor that could lead to major semiconductor improvements. Called a "double-gate" transistor, the device can carry twice the electrical current, operate at twice the speed and be reduced in size well below conventional transistors.

IBM and the U.S. Department of Energy's Oak Ridge National Laboratory agree to research and develop advanced computer architectures to increase the understanding of diseases. At the heart of the agreement is IBM's Blue Gene research project, which combines advanced protein science with IBM's next-generation cellular architecture supercomputer design.

Researchers at the Winship Canver Institute at Emory University team with NuTec Sciences, Inc. and IBM to develop an integrated information system that will enable physicians to tailor cancer treatments based on a patient's specific generic makeup.

Boeing Satellite Systems and IBM say they have created the world's most powerful satellite-based digital signal processor, designed to make space borne wireless communications available to a wide audience of users.

IBM researchers demonstrate Wireless Security Auditor, the industry's first automated tool to monitor 802.11 wireless networks and collect security-related information.

IBM launches a company-wide initiative to improve the energy efficiency of information technology for enterprises and consumers and establishes a worldwide low-power computing research effort to be coordinated at its research lab in Austin, Texas.

Facilities
IBM completes the Toronto Software Laboratory in Canada, occupies Beacon Square -- a four-story office building in Boca Raton, Florida -- and opens a high-tech center in Boston for e-business collaboration, design and development.

Corporate Citizenship
IBM's global contributions, funded through the IBM Corporation and the IBM International Foundation, total $127 million. In addition, employees donate more than four million hours of their time and contribute $51.2 million to educational institutions and nonprofit organizations in the United States.

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Business Performance
IBM revenue declines three percent from the prior year to $85.9 billion, and net income is $7.7 billion, compared to $8.1 billion in 2001. There are 315,889 employees and 674,326 stockholders at year's end.

Organization
Samuel J. Palmisano is elected chief executive officer effective March 1, while remaining president of IBM. In October he is elected chairman of the board, effective January 1, 2003. (On that date, Palmisano becomes chairman, president and chief executive officer of IBM.) Louis V. Gerstner, Jr., remains IBM chairman through the end of 2002.

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IBM and PricewaterhouseCoopers agree in July that IBM will acquire the former's global business consulting and technology services unit -- PwC Consulting. Under the terms of the agreement, IBM will pay PricewaterhouseCoopers an estimated purchase price of $3.5 billion in cash and stock. The transaction gives IBM an unmatched capability to help customers solve their business issues and to exploit world-class technology for improved business performance. IBM and PricewaterhouseCoopers complete IBM's acquisition of PwC Consulting in October. The combination creates a new global business unit, IBM Business Consulting Services -- comprising more than 30,000 IBM and 30,000 transferring PwC Consulting professionals -- which becomes part of IBM Global Services.

In November IBM says that it will combine the Server Group and the Storage Systems Group into a new Systems Group, effective January 1, 2003.

IBM Research launches On Demand Innovation Services, a new services arm which for the first time provides customers with a discrete team of researchers who will specialize in high-end business transformation and technology consulting. The new organization is initially staffed with 200 IBM Research consultants and supported with investments of $1 billion over the next three years.

The company launches a new services business -- IBM Engineering & Technology Services -- focused on helping companies across a variety of industries design innovative electronic products.

IBM completes its acquisition in January of CrossWorlds Software, Inc., a leading provider of software to automate business processes that integrate multiple applications. CrossWorlds becomes a unit of the IBM Software Group.

IBM acquires TrelliSoft, Inc., a privately-held provider of storage resource management software based in Illinois, and Access360, a privately-held provider of identity management software based in California.

In October, IBM says that it intends to acquire EADS Matra Datavision, a wholly-owned subsidiary of EADS Group. EADS Matra Datavision is the leading Product Lifecycle Management provider in France.

The following month, IBM acquires Tarian Software, a privately-held provider of e-records management software based in Ottawa, Ontario.

IBM and Rational Software Corp. agree in December that IBM will acquire Rational for approximately $2.1 billion. Rational provides open, industry standard tools and services for developing business applications and building software products and systems.

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Products & Services

In February, IBM introduces the eServer z800, a lower-priced, entry-class mainframe that fundamentally changes the economics of mainframe computing. With this move, IBM delivers for the first time advanced Parallel Sysplex clustering technology to entry-class mainframe customers. ..... In September, a 16-way IBM eServer z900 Turbo running the Z/OS 1.4 operating system sets a new speed record for secure e-business transactions.

IBM in February announces the eServer p610 Models 6C1 and 6E1, which consume 57 percent less electricity and generate up to 63 percent less heat -- and cost substantially less -- than the competing Sun 280R .... and in April, the company rolls out the eServer p670, a mid-range server with POWER4 microprocessor technology that costs up to 34 percent less than comparable Sun Microsystems' machines. ..... Also in April, IBM demonstrates the scalability of the IBM eServer p670 and its AIX operating system by supporting a record 12,600 users of the Oracle ® E-Business Suite with an average response time of 1.199 seconds. ..... A month later, the 32-way IBM eServer p690 server sets a new transaction processing record, handling 403,255 transactions per minute in the TPC-C benchmark (compared to 389,434 processed by a competing Hewlett-Packard 9000 enterprise server, while using only half the number of processors). ..... In May, the U.S. National Centers for Environmental Prediction select a massive IBM supercomputer that when fully deployed will be about four times faster than the most powerful supercomputer in the world. The supercomputer will be delivered in stages, beginning in 2002. The first phase -- a cluster of 44 IBM eServer p690 servers supported by 42 terabytes of IBM TotalStorage FAStT500 Storage Server disk storage -- will have a peak speed of 7.3 teraflops (7.3 trillion calculations per second). IBM will expand the system to reach a peak speed well in excess of 100 teraflops by 2009. ..... In June, IBM reports that it has shipped 1,000 IBM eServer p690 systems in less than six months of system availability, marking a key milestone in one of the most successful rollouts in the server industry. (The 1,000th p690 is delivered to The Spiegel Group, a specialty retailer, to help power the Marketmax merchandising suite of software and consolidate the workload of 15 non-IBM servers.) ..... Also in June, the High Performance Computing Center for North Germany selects the IBM eServer p690 as the clustered technology to support its supercomputing infrastructure. The IBM supercomputer, delivering four trillion calculations per second, will form the basis of the Center's grid infrastructure, providing all universities and research institutes within Germany's six Northern Federal states with accurate analysis and mathematical models. ..... The same month, the U.S. Naval Oceanographic Office acquires a p690-based supercomputer, named Blue Ocean, to perform basic research in the development of a practical vaccine for malaria and other infectious diseases. Processing over six trillion calculations a second, the supercomputer will also assemble the world's most detailed model of ocean waves, currents and temperatures. ..... Also in June, the company rolls out the IBM eServer p630 that offers 84 percent greater performance than Sun's V480. (IBM reports in December that it has begun shipping the p630 to customers.) ..... General Motors in August selects a supercomputing infrastructure based on IBM's pSeries 690 server to power GM's vehicle design applications. ..... In November, IBM announces the eServer p650, the world's most powerful eight-way UNIX server. The p650 is the first server to include IBM's newest 64-bit microprocessor, POWER4+, and it brings to the midrange the blazing performance and

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autonomic computing capabilities of the groundbreaking IBM eServer p690. ..... Also in November, IBM debuts the IBM eServer p655, an ultra dense UNIX server targeted at the high performance computing market that is capable of reaching half a trillion operations per second in a single frame in peak processing power.

The U.S. Department of Energy (DOE) awards a contract to IBM in November to build the two fastest supercomputers in the world with a combined processing power of up to 467 trillion calculations per second, exceeding the combined power of the world's 500 fastest supercomputers. The first system, called ASCI Purple -- will provide DOE with the first supercomputer capable of up to 100 teraflops; the second supercomputer, a research machine called Blue Gene/L, will have a performance of up to 367 teraflops with 130,000 processors running Linux.

The Research Center Juelich in Germany purchases a new supercomputer based on IBM POWER4 microprocessor technology that will achieve a peak performance of 5.8 trillion computations a second. When delivered and installed, the new system will be the fastest supercomputer in Germany.

IBM announces the IBM eServer i890, featuring mainframe-class technology and the company's game-changing POWER4 microprocessor. The 32-way i890, running the latest release of the iSeries operating system -- OS/400 Version 5 Release 2 -- nearly doubles the processing power of the previous top-of-the-line iSeries, the i840, and delivers enhanced server consolidation capabilities with support for up to 32 OS/400 or Linux dynamic logical partitions.

During 2002, IBM introduces: in February, the IBM eServer xSeries 330 with Memory eXpansion Technology that can effectively double memory and significantly increase performance compared with servers with an equal amount of memory. ..... in March, the IBM eServer xSeries 440 with Enterprise X-Architecture technology. Offering a building block style architecture, the x440 allows customers to pay for computing power incrementally as they need it, and is designed to support up to 16 processors and 64 GB of memory. (IBM begins shipping the 16-way IBM eServer x440 in volume in December.) ..... in June, the IBM eServer x235 two-way server for medium-size businesses deploying solutions such as file and print as well as more critical mail/collaboration solutions. ..... in July, the IBM eServer x345, a rack-based server designed to dramatically reduce the proliferation of cables that add complexity and cost to high-density environments. ..... the following month, the IBM eServer x335, a rack-optimized server that sets the design standard for web application serving (able to run both the Linux and Windows operating systems, the x335 offers customer flexibility to link together many servers in powerful clusters or computing grids) and new two- or four-way eServer x440 entry models. ..... in November, new models of the four-way IBM eServer x255 rack and tower system, new four-way models of the eServer x360 rack-dense server, new four- and eight-way models of the highly scalable eServer x440 and the IBM eServer x225 featuring the Intel Xeon processor.

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IBM announces plans in April to introduce a powerful blade system that delivers high performance computing in an ultra-dense server. Five months later, the new IBM eServer BladeCenter system is introduced as one of the most powerful blade servers in the industry. Blade servers -- which are on removable cards that plug into a chassis (or shared infrastructure) -- are used to consolidate information technology (IT) infrastructures in such areas as e-mail and collaboration, e-commerce applications, Linux clusters and other enterprise applications. The need for high reliability is magnified in blade systems where potentially hundreds of servers are stacked like books on a shelf in a single small space.

In October, IBM defines the next phase of its company-wide Autonomic Computing initiative, including plans for a series of products and offerings coordinated by the recently formed Autonomic Computing cross-company unit, and a new autonomic deployment model that outlines a staged approach for helping customers chart a course for establishing an autonomic IT environment.

Among the company's 2002 product introductions are: in February, workstations offering up to 2.5 times faster graphics performance than Sun's fastest workstation. The new offerings include the IntelliStation POWER 265 UNIX workstation and the IntelliStation Pro Series (E Pro 6204 and 6214, and M Pro 6229 and 6850). ..... and, in November, the mid-range IntelliStation M Pro 6219, designed for the ultimate in graphics performance; the high-end IntelliStation Z Pro 6221, in a new compact minitower optimized for multitasking and multithreaded applications; and the IntelliStation POWER p630 for 3D visualization in MCAD/CAE, geophysical and scientific analysis. Weta Digital, Ltd., says in May it will move a significant proportion of production work related to "The Lord Of The Rings" film trilogy onto more than 150 IBM Intellistation 6580-WEA workstations running Linux.

IBM introduces in June, the IBM NetVista A30 and A30p desktop PCs for small businesses, and the NetVista M42, with the fastest technology available in a desktop from IBM; and, in October, the IBM NetVista S42, one of its smallest yet most functional desktops.

IBM announces "ThinkVantage Technologies," a set of PC solutions designed to help customers drive down IT support costs, such as IBM RapidRestore PC, a software tool preloaded on IBM PCs that can restore previously saved data and applications after a software failure.

The company's 2002 ThinkPad notebook introductions include the A31p, IBM's first mobile computer designed to meet the specific, high-performance needs of workstations. ..... the T30, a thin and light mobile computing powerhouse with UltraNav, a revolutionary, programmable multi-pointing system that allows users to quickly and easily choose the way they want to work. ..... the R32 notebook for the small and medium business and education markets. ..... and the X30 notebook, a 3.6-pound ultraportable computer that can stretch battery life to eight hours.

IBM also launches the IBM SurePOS 300 Series point-of-sale (POS) system, as well as new models of the IBM SureOne, IBM SurePOS 600 Series and IBM SurePOS 500 Series.

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In storage products activities in 2002: IBM debuts the Travelstar GNX hard disk drive in February ..... in May, IBM supports the introduction of "Bluefin," a new technology that is expected to provide an industry-wide management solution for interoperable storage area networks. ..... the following month, the company ships its 10,000th IBM TotalStorage Enterprise Storage Server ("Shark"), to Commerzbank, a leading international investment and banking institution based in Frankfurt, Germany. ..... in July, the company introduces: the IBM TotalStorage Enterprise Tape Drive 3590 Model H, that stores up to 50 percent more information than the previous model; the Ultrastar 146Z10, an industrial-strength server hard disk drive for use in the most intensive business environments (it is the first 10,000 rpm hard drive of its generation to ship in volume, with a top capacity of 146 gigabytes); the IBM TotalStorage Enterprise Storage Server ("Shark") Model 800 powered by IBM's copper microchips and industry's first 2-Gigabit-per-second Fibre/FICON data transfer rates; and the IBM TotalStorage Network Attached Storage 100, a thin self-managing, self-healing appliance for e-mail archiving, server consolidation, storage backup or archiving paper documents. ..... in September, the company debuts the IBM Deskstar 180GXP, the world's fastest desktop hard disk drive. ..... in November, IBM launches the Travelstar 80GN, the world's highest capacity mobile hard disk drive at 80 GB, made possible by enhancements to the company's patented "Pixie Dust" technology which boost storage density by 100 percent. ..... also in November, IBM announces the IBM TotalStorage Network Attached Storage 200, TotalStorage NAS Gateway 300, and TotalStorage FAStT, new network attached storage systems that double the processor speed and storage capacity of previous models.

The following printer products are rolled out in 2002: the Infoprint Color 1220 and 1228 printers in January ..... the Infoprint 2085 and Infoprint 2105 midrange cut-sheet printers in April … the IBM 6400 Model 020 matrix printer, which is designed for industrial print applications and prints at 2,000 lines per minute, and enhancements to the Infoprint 4000 and 4100 high-speed, high-volume production printers, in May. ..... and the Infoprint 4100 HS2 simplex model and 4100 HD3/HD4 duplex model for continuous forms printing in October.

IBM announces: z/OS 1.3, the latest release of the flagship operating system of the eServer mainframe. ..... IBM WebSphere Voice Server for Transcription, new speech recognition technology for advanced, enterprise-wide, industry-specific dictation and transcript. ..... WebSphere Everyplace Access, new software to give employees access to data over virtually any device on any network. ..... in April, more than 30 new and enhanced Tivoli software products and a strategy to help customers more cost-effectively manage their e-business infrastructure. ..... IBM Tivoli Privacy Wizard, a new publicly-available software tool that helps organizations define privacy policies based on legal and organizational requirements and standardize privacy implementation across the enterprise. ..... in June, IBM Content Manager version 8, to help customers manage and integrate all forms of information located in various data sources, including scanned images, audio, video and information from multiple software vendors' products. ..... the next month, DB2 version 8. ..... in September, ViaVoice Translator, affordable machine translation software that enables speedy and convenient language translation on handheld computers. ..... in October, IBM Lotus Sametime 3 for instant messaging and IBM Lotus QuickPlace 3, the self-service Web tool for team collaboration.

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IBM moves key applications to Linux, including the application that monitors server performance for its worldwide Lotus Notes e-mail system, supporting more than 300,000 IBM employees worldwide. IBM estimates deployment of Linux on IBM eServer systems will help achieve more than $10 million per year in savings in the total ownership costs within its worldwide IT infrastructure.

The Home Depot, the world's largest home improvement retailer, selects IBM WebSphere and DB2 e-business software to serve more than 1,300 stores, 300,000 associates, millions of customers and integrate more than 45,000 business partners.

IBM introduces Web Services Hosting technology, tools that allow developers and service providers to host and monitor Web services. ..... The company announces Service Provider Delivery Environment, an open-standards framework to give wireless and wireline telecommunications service providers the flexibility to introduce new voice, text and Internet-based services to their customers faster, easier and at lower cost. ..... IBM assists the Masters Golf Tournament in producing and hosting masters.org with expanded live streaming video coverage and downloadable hole-by-hole scoring. There are 1.5 million unique users logged on during Masters week, an increase in visitors of 37 percent over the year before. ..... In May, IBM supports the Broadway theater Tony Awards by designing, producing and hosting the awards Web site. ..... In July, IBM introduces Linux Virtual Services, that for the first time enables corporations to access large-scale computing infrastructure on-demand over the Internet. ..... IBM designs, develops and hosts the USTA's USOpen.org, one of the most highly trafficked Web sites of any annual sports event. More than 2.4 million unique users visit the site during the U.S. Open tennis tournament, nearly 20 percent more than in 2001.

IBM announces in February new software, storage and services for Grid computing, as well as plans to Grid-enable its entire product portfolio. Grid computing enhances Web services by coordinating global applications and resources at various locations, regardless of the underlying implementations and services. It shields the user from the complexities of the technology infrastructure and reduces complexity in two key ways: by virtualizing all of the resources and making them transparent to the user, and by infusing the infrastructure with open protocols that permit tremendous flexibility in deployment and automated management. ..... IBM and the U.S. Department of Energy (DOE) announce in March a collaboration to begin deploying the first systems on a nationwide computing Grid which will empower researchers to tackle scientific challenges beyond the capability of existing computers. Beginning with two IBM supercomputers and a massive IBM storage repository, the DOE Science Grid will grow into a system capable of processing more than 10 trillion calculations a second and storing information equivalent to 200 times the number of books in the Library of Congress. ..... Irving Wladowsky-Berger, vice president, Technology and Strategy, predicts publicly in May that Grid computing based on open standards will over time make e-business as accessible and easy as flipping a switch. ..... A month later, IBM's Grid computing general manager says businesses can improve the utilization of their technology infrastructures by 30 percent or more by taking advantage of Grid technologies to enable on-demand computing.

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IBM rolls out the Digital Media Factory, an open-technology framework comprised of IBM e-business infrastructure that can help all types of companies manage, store, protect and distribute digital video, audio and images.

IBM and Steelcase Inc. announce the creation of BlueSpace -- an interactive and personalized office of the future. The joint project combines IBM's technology expertise with Steelcase's workplace knowledge to create a new office environment that integrates the physical workspace with advanced computer, sensor, display and wireless technologies.

In May the company ships the 100 millionth chip made with silicon germanium, a technology pioneered by IBM that is revolutionizing the design of cell phones and other wireless electronic products.

IBM introduces the PowerPC 440GP and 405GPr processors designed to give chip designers a richer mix of features for a broad set of embedded applications; the IBM PowerNP NP2G network processor; and powerful new processors for the IBM eServer z900 with double-digit price/performance improvements. ..... In April, IBM discloses technical details of the new IBM PowerPC 440GX, which combines the PowerPC 440 processor core and other key functions on a single chip. (The new embedded processor, an upgrade to IBM's PowerPC 440GP, is targeted to support CPU speeds of 466 to 600 MHz.) ..... In June, IBM announces the industry's most advanced custom chip capability. The new IBM application-specific integrated circuit offering, called Cu-08, supports circuits as small as 90 nanometers (a nonometer is a billionth of a meter), as well as innovative materials and design techniques to drive power consumption down by as much as 40 percent while pushing performance up as much as 20 percent. ..... In October, the company introduces the IBM PowerPC 970 64-bit microprocessor and the PowerPC 405EP processor (for wireless local area network access points and other networking applications).

IBM is selected by a partnership of U.S. public safety and transportation agencies in Virginia, Maryland and the District of Columbia to build the Capital Wireless Integrated Network, the first operable wireless system to span multi-state government jurisdictions -- which will allow officials from more than 40 local, state and federal agencies to communicate with each other in real time. ..... The company says in October that will soon open the IBM Government Solutions Center, a computer science laboratory just outside Washington D.C. (in Vienna, Va..), to bring together IBM experts and public sector customers in a facility to research, validate and develop technology solutions for such initiatives as e-government, e-democracy and homeland security.

Nestlé, the world's largest food and beverage enterprise, selects IBM as the exclusive provider of servers, storage systems and database software for the next five years for the GLOBE data centers at the heart of Nestlé's worldwide business transformation initiative. ..... Amtrak and IBM complete an agreement aimed at boosting the carrier's IT systems while cutting costs $85 million over a seven-year period. ..... IBM launches a new disaster recovery service to help customers better safeguard their networks, provide faster and more secure back-up systems for their data and ensure near uninterrupted access to critical business information.

2002

One year after announcing its Project eLiza initiative to develop self-managing or "autonomic" systems, IBM demonstrates new technology that can save an estimated 20 percent on customer information technology budgets. The new technology includes Enterprise Workload Manager, ITS Electronic Service Agent, Enterprise Identity Mapping and "Raquarium."

Eight U.S. major league baseball teams use IBM's PROS, a Web-based software application which allows scouts to quickly collect, store and access information on prospects and players.

IBM provides enhanced voice recognition technology for a revolutionary new navigation system for select models of the 2003 Honda Accord.

Alliances

Hitachi, Ltd. and IBM announce plans in April to form a strategic alliance to accelerate the delivery of advanced storage technologies and products to market. Under the terms of the preliminary agreement, the two companies plan a multi-year alliance to research and develop new open standards-based technologies for future storage networks, systems and solutions. Hitachi and IBM say they intend to combine various hard disk drive (HDD) operations into a new standalone, joint venture company, integrating their R&D and manufacturing operations, as well as related sales and marketing teams. Two months later, the two companies announce a definitive agreement to transfer their HDD operations to a new company under majority Hitachi ownership. Hitachi agrees to purchase the majority of IBM's HDD-related assets for $2.05 billion. Hitachi will initially own 70 percent of the new company -- Hitachi Global Storage Technologies -- and will make a series of fixed payments to IBM before assuming full ownership after three years.

IBM and Red Hat announce a multiyear alliance, including services and expanded support for software and servers, that will enable the two companies to provide broad Linux support to enterprise customers around the world.

IBM invests in Aprion Digital, a supplier of state-of-the-art digital ink jet printing technology.

In a unique collaboration, IBM, Sony Corporation, Sony Computer Entertainment Inc. and Toshiba Corporation sign a multi-year agreement to jointly develop semiconductor technologies based on silicon-on-insulator and other IBM materials advances. This will lead to the development of high-performance, low-power chips necessary for a wide range of future electronic products -- from digital consumer applications to supercomputers.

Nextel Communications, Inc. and IBM form an alliance covering the development, marketing and deployment of mobile e-business solutions to enterprise customers in the United States, as well as an eight-year, $1.2 billion outsourcing initiative to manage and enhance Nextel's customer care capabilities.

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Nokia and IBM join forces in April in the public wireless LAN business. Three months later, the two companies announce an agreement on digital content delivery for mobile applications and services.

IBM and Accelrys, Inc. -- one of the largest software vendors in life sciences -- form an alliance to enhance drug research and development.

IBM and VMware, Inc. are developing tools using dynamic logical partitioning to consolidate more than 20 "virtual servers" on a single IBM eServer.

IBM and Great Wall Technology Limited sign a three-year agreement in which Great Wall Technology's subsidiary -- ExcelStor Technology -- will manufacture the 40 gigabyte version of IBM's Deskstar 120GXP desktop drive. The agreement makes Great Wall Technology the first Chinese company to manufacture and sell computer hard disk drives for the worldwide market.

American Express and IBM form a technology services partnership in February in which IBM will provide utility-like access to its vast computing resources. The agreement is valued at more than $4 billion over seven years. The following month, the two companies agree to jointly develop a Web-based expense report and reconciliation tool designed to reduce the cost of managing everyday business expenses.

IBM and Xilinx announce in March a two-year, multi-million dollar agreement under which IBM will manufacture the newly-announced Xilinx Virtex-II Pro semiconductor products. The two companies sign an agreement in June under which IBM will license field programmable gate array technology from Xilinx for integration into IBM's Cu-08 ASIC product offering.

IBM and Dassault Systemes sign an agreement with Toyota Motor Corporation to build a world-class collaboration around PLM Solutions covering vehicle development processes.

IBM and The Thomson Corporation agree to combine IBM's e-learning technologies and Thomson's learning products and services to jointly pursue the $18 billion global market for corporate and government e-learning .

Air Canada begins using new wireless mobile IBM self-service kiosks in a trial program to expedite passenger check-in at Toronto's Lester B. Pearson Airport. The mobile kiosks represent the first jointly developed solution resulting from the strategic relationship between IBM and Air Canada.

IBM and Mayo Clinic say they will jointly develop an information system to give Mayo Clinic investigators information to help them more quickly identify potential clinical trial participants.

2002

Science & Technology

For the tenth consecutive year, IBM leads the world in generating the most U.S. patents -- with 3,288 -- nearly doubling the output of the second most productive company. In the past decade, IBM inventors have received a record 22,357 patents, besting the next closest company, Canon, by nearly 7,000 patents. During this period, IBM has generated more patents than 10 of the largest U.S. information technology companies combined, including Hewlett-Packard/Compaq, Intel, Sun, Microsoft, Dell, Apple, EMC, Oracle, and EDS. In addition, IBM is the only company to be granted 3,000 U.S. patents in a single year, passing that milestone each of the past two years.

IBM has more systems than any vendor on a list of the world's most powerful supercomputers, nearly doubling the number of machines posted by the second place company, the combined Hewlett-Packard/Compaq.

The company creates the world's fastest silicon-based transistor, achieving speeds of 350 GigaHertz. The new transistor performs nearly 300 percent faster than production devices and 65 percent faster than previously reported silicon transistors.

IBM scientists build the world's smallest working silicon transistor. At six nanometers in length, the new transistor is at least 10 times smaller than the state-of-the-art production transistors.

IBM researchers create the highest performing nanotube transistors to date and prove that carbon nanotubes -- tube-shaped molecules made of carbon atoms that are 50,000 times thinner than a human hair -- can outperform the leading silicon transistor prototypes available.

Using an innovative nanotechnology, IBM scientists in Switzerland demonstrate a data storage density of a trillion bits per square inch -- 20 times higher than the densest magnetic storage available. IBM achieves this density -- enough to store 25 million printed textbook pages on a surface the size of a postage stamp -- in a research project called "Millipede."

IBM records 1 terabyte (TB) of data to a linear digital tape cartridge, storing 10 times more data than any linear tape cartridge then available. (One terabyte is equal to 16 days of continuously running DVD movies or 8,000 times more data than a human brain retains in a lifetime.) The 1 TB initiative had been under development since April 2001 at IBM's Almaden Research Center in San Jose, Calif., and IBM storage product development laboratories in San Jose, Calif.; Tucson, Ariz., and Yamato, Japan. (This achievement coincides with IBM's 50th anniversary of magnetic tape storage that ushered in a new era of information processing. In May 1952, IBM introduced the Model 726 tape drive [see http://www-1.ibm.com/ibm/history/exhibits/701/701_1415bx26.html] which stored a total of 1.4 megabytes -- equal to one floppy disk in 2002 -- on a movie reel over 12 inches in diameter and using a special tape media developed by 3M.)

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Company researchers build and operate the world's smallest working computer circuits using an innovative new approach in which individual molecules move across an atomic surface like toppling dominoes. The new "molecule cascade" technique enables IBM scientists to make working digital-logic elements some 260,000 times smaller than those used in most advanced semiconductor chips.

IBM announces a research collaboration that will help NASA scientists analyze tele-robotic data during the 2003 Mars Exploration Rover expeditions.

IBM researchers demonstrate the industry's first self-diagnostic tool that can automatically monitor 802.11 wireless networks and report security problems in real-time.

The company begins a research program to develop technologies that could help solve continually escalating power consumption issues and help reduce cooling and power supply costs for IT infrastructures.

Researchers from IBM and Nion Co. develop innovative technology to peer deep inside materials and view atoms interacting in different environments at a resolution never before possible.

IBM develops and demonstrates a tiny device that measures heart rate and is able to sense when the person wearing it is in distress and then call a cell phone for immediate help.

Facilities

IBM opens a 300 millimeter semiconductor facility in East Fishkill, N.Y. The new 140,000 square foot facility -- designed to satisfy growing demand for IBM' s leading-edge chip technologies through high-end "foundry" manufacturing services -- contains 200 miles of piping and tubing, 600 miles of cable and wiring and two million pounds of ductwork.

IBM and Sanmina-SCI Corporation, a global electronics manufacturing service provider, agree in January that IBM will outsource a significant portion of its desktop personal computer manufacturing needs to Sanmina-SCI and that Sanmina-SCI will acquire IBM's NetVista desktop manufacturing operations in the United States and Europe. IBM, which will continue to design and market the NetVista line of desktops, signs a three-year, $5 billion outsourcing agreement with Sanmina-SCI for desktop manufacturing services. Under the agreement, Sanmina-SCI will acquire and use existing IBM desktop manufacturing buildings and equipment in Research Triangle Park, N.C., for U.S. and Canadian customers, and assume the management of IBM's current outsourced manufacturing contract, and acquire IBM manufacturing equipment, in Greenock, Scotland, for European and other customers.

The IBM Silicon Valley Laboratory in San Jose, Calif., marks its 25th anniversary in September and the unveiling of Silicon Valley's first IBM Design Center for e-business infrastructure (a 3,000 square foot, $2 million state-of-the-art facility in which IBM technical experts host workshops for customers and collaborate with them to design and develop new e-business

solutions). Opened in 1977 on 90 acres, the Silicon Valley Laboratory was the first software development facility of its kind. Its track record of achievements include IMS, the workhorse database technology; the relational database; DiscoveryLink; 1,000 patents; and creation of IBM's content management technology.

IBM says in May that it is realigning its Microelectronics Division to increase operational efficiencies and capitalize on emerging growth opportunities. As part of this realignment, the division will increase its use of leading-edge copper technology and close older aluminum technology capacity.

IBM establishes the Development Center for Telecom and e-business -- in San Mateo, Calif., Sydney, Australia and Hursley, U.K. -- to assist independent software vendors in creating e-business applications that can connect easily to telephone networks.

Corporate Citizenship

IBM is ranked Top Corporate Citizen of the year by *Business Ethics* Corporate Responsibility Report. The publication's annual listing of the 100 Best Corporate Citizens is based on a quantitative measure of 650 public companies' corporate service to seven stakeholder groups.

IBM announces a $15 million grant program designed to drive higher-quality training for U.S. public school teachers. The announcement brings IBM's investment in its global Reinventing Education initiative -- serving 65,000 teachers and six million students -- to $70 million. The company also rolls out the IBM Scholars Program, a comprehensive offering to give participants in higher education free software, discounts on course materials and information on IBM's university-related initiatives.

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